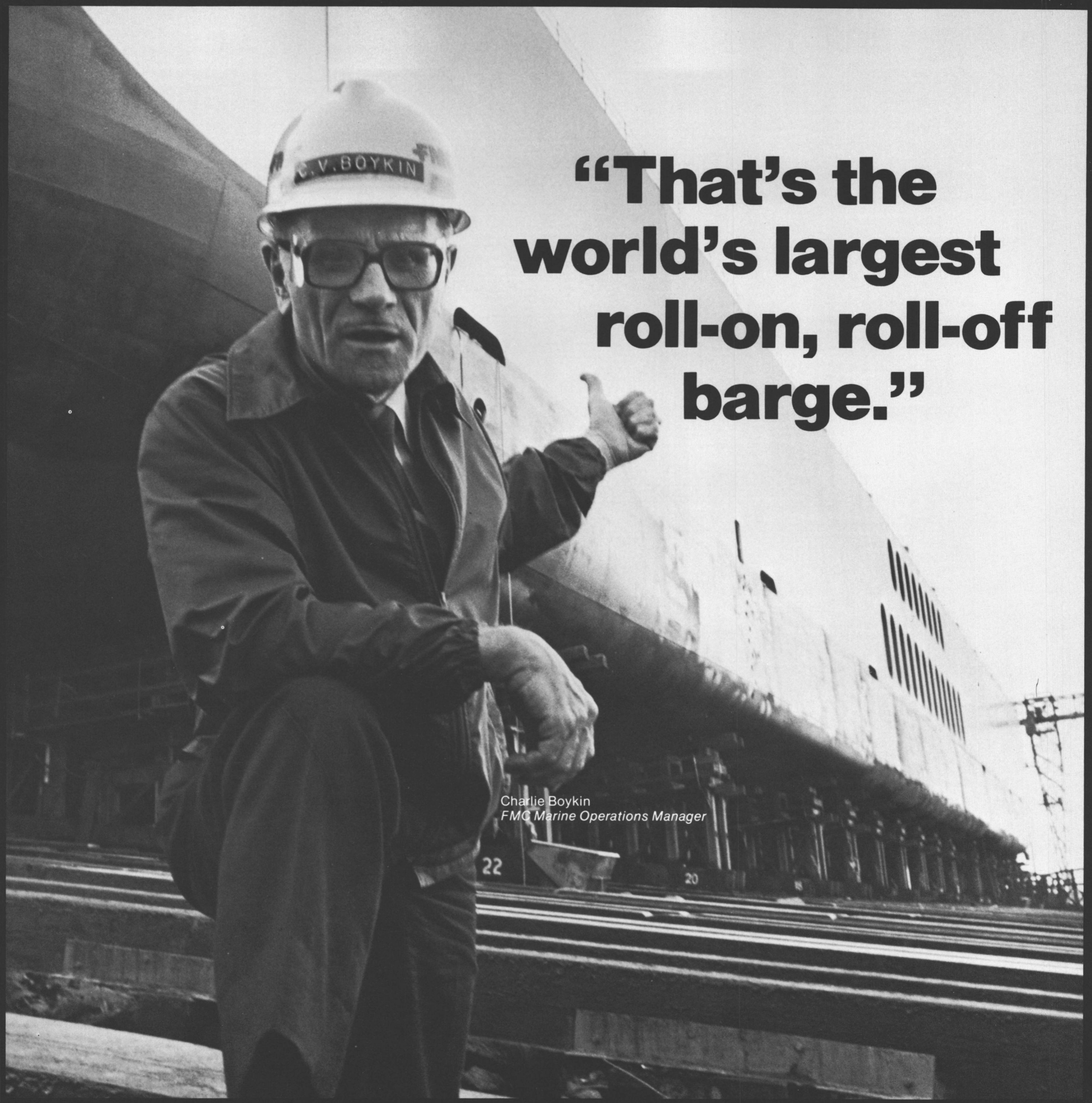
MARITIME REPORTER
AND
ENGINEERING NEWS



Port Of Portland's New 982-Foot Drydock Arrives At Swan Island, Completing 4,600-Mile Trip From Japan
(SEE PAGE 6)

SNAME Annual Program
(SEE PAGE 12)

NOVEMBER 1, 1978



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Photographic simulation of pilot house being elevated 28′ height of eye to 45′.



Tug Marjorie B. McAllister in notch of 18,000 ton/125,000 barrel barge.
Pilot house elevated to 45′ height of eye.



Tug Marjorie B. McAllister with barge on hawser,
pilot house lowered to a conventional 28′ height of eye.

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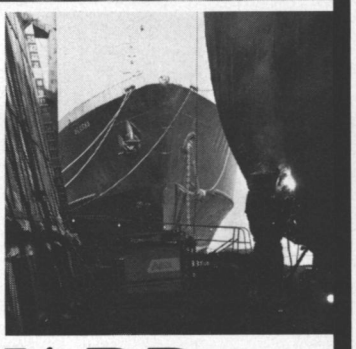

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Bourceau And Blackwell Speak At Bureau Veritas 150th Anniversary Dinner

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The celebration of the 150th anniversary took place on October 5, 1978, in New York City at the Waldorf Astoria.

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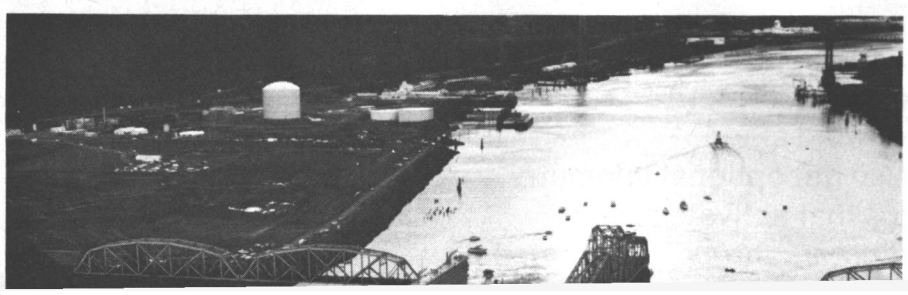

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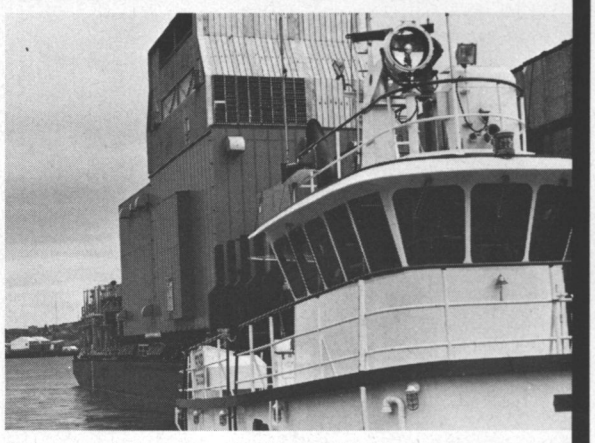

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The Port of Portland's new floating drydock—the world's third largest—is eased by powerful tugboats of Willamette Tug and Barge Company through the open span of the Burlington Northern Railroad Bridge across the Willamette River in downtown Portland, Ore. The 902-foot-long structure, with a width of 229 feet 10-3/8 inches, transited the 231.6-foot-wide bridge opening with hardly a hitch, under the direction of four Columbia River Pilots — Captains **Bill Ross,** command pilot, **Henry Childs, Don Sanford** and **C.D. Modrow**. A nudge here, a push and pull there, a frequent "Easy does it" over the tugboats' intercoms, and in less than an hour the drydock cleared the last dolphin and continued on upriver. The floating drydock, towed from Japan by its builder, IHI Industries, and moved from Astoria more than 100 miles up the Columbia and Willamette Rivers by Willamette Tug and Barge, already is booked by the Port for repair work through the next 12 months.

Port Of Portland's Drydock —Largest On West Coast— Arrives At Swan Island Yard

The arrival of the Port of Portland's 982-foot-long floating Dry Dock 4 completes five years of research, planning and construction, and was made possible by the confidence and financial support of Portland Metropolitan Area voters.

The Japanese towing firm Tokyo Marine Services delivered the huge drydock on September 21, completing a 4,600-mile tow from Japan.

In 1974, the Port commissioned a study on market and facility development at the Swan Island Ship Repair Yard by the New York firm of John J. McMullen Associates. Findings of that study revealed Portland had only one way to go if it was to remain a major West Coast ship repair center. It must plan and provide facilities for servicing large ships, particularly those soon to be in the Alaskan crude oil fleet.

The Port and consultants designed a drydock that would be 982 feet long, 185 feet wide and capable of lifting 81,000 long tons. This plan, along with construction of an additional 3,000 feet of repair berth space, new cranes and ancillary facilities, was presented to the voters in the tri-county Port District in November 1976, and passed with a margin that looked like a mandate. The total amount authorized was $84 million, with the plan that the obligation would come off the tax rolls in from three to five years, at which time it was anticipated revenues from the new facilities would be sufficient to pay off the bonds.

With the green light from the community, the Port and its consultants began an intense period of final design, and were calling for bids on all major projects by late fall 1977. The Port benefited from an intense period of international competition. Ishikawajima-Harima Heavy Industries Co. (IHI) of Japan was low at $17.5 million among eight bidders for the drydock—nine million under the Port engineer's estimate, and more than $18 million under original estimates.

Other major bids came in under estimates. With the entire Swan Island Ship Repair Yard expansion project nearing completion, it appears likely the total project will cost about $20 million less than the $84 million authorized. The effect may be that the project could come off the tax rolls in two years, instead of the three to five predicted.

In the new Dry Dock 4, the Port of Portland will have the largest floating drydock on the U.S. West Coast, and the third largest in the world. The new dock will be 982 feet (299.31 meters) long overall and 185 feet (56.39 meters) clear width between fenders. Lift capacity will be 81,000 long tons, affording service to ships in the 120,000 to 275,000-dwt class. Over the keel block length will be 902 feet (274.93 meters), and depth over the keel blocks will be 35 feet (10.67 meters). Lift time, with capacity vessel, will be two hours.

The Swan Island Ship Repair Yard is the only publicly owned, privately operated major shipyard in the United States, occupying 125 acres (50.59 hectares) at the northern tip of Swan Island on the Willamette River's 40-foot (12.19 meters) channel. It is five miles downstream from Portland's central business district.

At Swan Island, the Port of Portland has consolidated its drydock and repair facilities to provide a modern shipyard equipped to satisfy a wide range of requirements.

Swan Island's drydocks are constructed to serve vessels ranging in size from small river tugs and barges to large, oceangoing ships, with each of the three drydocks having an average lift time of just over 35 minutes.

The new drydock will accommodate the largest vessels operating in the Alaskan oil trade. Its location in Portland makes it possible for energy carriers to clean tanks and consolidate oily wastes while proceeding northbound from southern waters, then lay over in Portland for maintenance and/or repairs.

Dry Dock 4 was built in accordance with American Bureau of Shipping rules and requirements to meet, or surpass, a + A-1 classification.

Crane service at Dry Dock 4, and the adjacent new 3,000-foot (914.4 meter) ship repair pier, will include one heavy-duty crane with a lift capacity of 120 long tons, one medium-duty crane having a lift capacity of 100 long tons, and three light-duty cranes, each with a lift capacity of 75 long tons. All will be revolver-type gantry cranes on tracks running the full length of the new pier. A 20-long-ton lift capacity crane will be located on the outboard wing wall of Dry Dock 4 for additional service. For rapid ship turnaround, Dry Dock 4 will be equipped with four wing wall-mounted traveling stages (dockarms) for hull cleaning and painting.

Currently, five repair berths at the Swan Island Ship Repair Yard—2,000 feet (609.6 meters) total length—are equipped with 10 cranes and full utility service. Crane lift capacities range from 40 to 80 long tons. When the new Dry Dock 4 and repair berths come on-line in early 1979, total repair berth length will be 5,000 feet (1,524 meters).

Working berths are backed by six idle ship berths with 3,200



The huge floating drydock makes its way up the Columbia River under tow by Willamette Tug and Barge Company of Portland. More than 14 months of planning went into the 100-mile-plus river trip from Astoria, Ore., to Portland Harbor, under the direction of Willamette Tug and Barge. Also involved were IHI Industries, the builder, the Port of Portland, the Columbia River Bar and River Pilots, the U.S. Coast Guard and the Burlington Northern Railroad. Arrival of the mammoth 902-foot-long drydock in Portland occurred September 21.



The Port of Portland's new floating drydock is eased by tugboats of Willamette Tug and Barge Company into its berth at the Port's Swan Island ship repair facility in Portland Harbor. The huge structure, as long as three football fields end to end, will be outfitted and made ready for handling ship repair service by the first of the year.

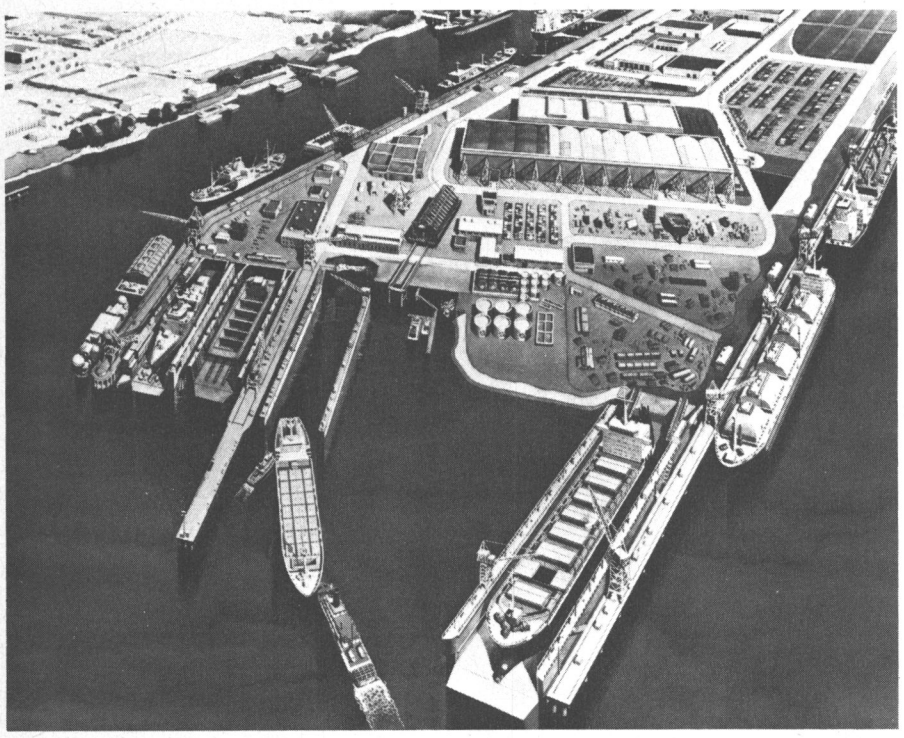
feet (975.35 meters) of total length, and are serviced by mobile truck cranes.

Northwest Marine Iron Works, one of Portland's primary ship repair and conversion companies, is responsible for outfitting and testing the drydock. This job will be performed under a $2.67-million contract with Ishikawajima-Harima Heavy Industries.

The contract includes removing temporary enclosures and accessories required during the towing of the drydock from IHI's shipyard in Japan to Portland. It also includes installation of dewatering pumps, major electrical work, utility line connections, access equipment and touch-up painting.

Following outfitting, Northwest Marine Iron Works is scheduled to overhaul the first vessel to utilize the new drydock.

Seven ships have already been booked for Dry Dock 4 during 1979 — just one less than had been projected for its first year of operations. First ship to go on the blocks will be the 894-foot-long S/S Overseas Chicago. All seven ships scheduled for Dry Dock 4 are involved in the movement of Alaskan crude oil.



This artist's rendering shows the completed expansion project at the Port of Portland's Swan Island Ship Repair Yard. At the foreground is the new Dry Dock 4, the largest floating drydock on the West Coast and third largest in the world. Adjoining the dock is 3,000 feet of pier and wharf space for ship repair, backed up by expanded utility systems, an enlarged ballast water treatment plant and six new cranes ranging in capacity from 30 tons to 150 tons. The expanded yard is expected to be operational in January 1979, and fully complete in May.

Japan And South Korea Divide $300-Million Sea-Land Ship Order

Sea-Land Service, Inc. has placed tentative orders with Japanese and South Korean yards for construction of 12 full-size containerships valued at an estimated $300 million. Japanese shipbuilding sources disclosed that the orders have been given to Mitsubishi Heavy Industries, Mitsui Engineering and Shipbuilding, both of Japan, and Hyundai Shipbuilding and Heavy Industries of South Korea.

The 12 containerships will have capacities of 838 forty-foot containers each, and will be powered by fuel-saving Sulzer diesel engines. The new D-9 class vessels will have an overall length of 745 feet and will fly the U.S. flag and be manned by U.S. crews when they are placed in operation beginning in 1980.

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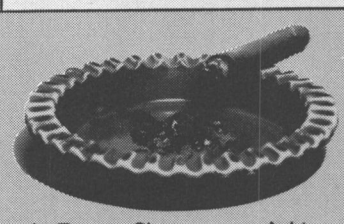

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Levingston Awarded $200 Million To Build Five Bulk Cargo Ships

Robert J. Blackwell, Assistant Secretary of Commerce for Maritime Affairs, has announced the award of a $200,075,000 contract to Levingston Shipbuilding Company, Orange, Texas, to construct five self-sustaining dry-bulk cargo ships. The shipowner is Levingston Falcon I Shipping Company, also of Orange.

Under the federally assisted ship-construction program, the Maritime Administration (MarAd), an agency of the U.S. Department of Commerce, will pay nearly half the costs of the vessels. Additionally, it will pay $37,000 per vessel for the installation of national defense features.

"This project is a significant first step in revitalizing the U.S.-flag dry-bulk fleet which now consists of only 19 vessels with a combined cargo-carrying capacity of 556,000 deadweight tons," Mr. **Blackwell** said. Pointing out that no new dry-bulk carriers have been built in the United States since 1974, he added, "We currently have under review a maritime aids program for the dry-bulk industry which should be of further help in upgrading U.S.-flag dry shipping capacity.

"The construction of each ship will generate approximately 630 man-years of employment for the Levingston work force and a like amount for workers in the allied marine supply industry. The total for all five ships could be more than 6,000 man-years of employment for American workers, a significant development at a time when shipbuilding is in a worldwide decline."

The ships will trade worldwide; it is anticipated that they will be carrying grain from U.S. Gulf ports to ports in the Far East, sugar from the Philippines to U.S. Gulf ports, and wood and iron products from Taiwan to U.S. Gulf ports.

Each vessel will be 616 feet long, 93 feet wide, and 50 feet deep. Rated at 36,414 dwt and 15,600 horsepower, the ships will have a speed of 16.4 knots. Each will carry a crew of 26.

The ships will be of a design produced by the Japanese shipbuilding firm of Ishikawajima-Harima Heavy Industries Co., Ltd. (IHI). Under a separate research and development contract, also announced, Levingston Shipbuilding will match $1.2 million from MarAd to employ IHI as a major subcontractor. IHI is to share its production experience and technology with the Texas shipyard, with the information also to be available to the U.S. Government and other U.S. shipyards.

The first ship is scheduled for delivery December 31, 1980, with others to follow at six-month intervals.

MarAd also awarded a 20-year operating-differential subsidy contract to Equity Carriers, Inc., New York, N.Y., which will bareboat charter the vessels for 20 years.

The shipowner is a general partnership which includes Levingston Alpha Shipping, Inc., a wholly owned subsidiary of Levingston Navigation Company, Inc., which in turn is owned by the shipyard.

Two other members of the partnership, Falcon Cargo Ships, Inc., and Falcon Dry Bulk, Inc., are wholly owned by Falcon Equities, Inc., which is owned by **C.C. Wei, Y.J. Hsi, H.M. Hu** and the H.H. Wasson Maritime Trust. The fourth partner, Falcon Investors, Inc., is wholly owned by Falcon Carriers, Inc., which is owned by Colt Industries, the Estate of Houston H. Wasson, and **C.C. Wei.**

G.E. Awarded $25 Million For Gas Turbine Systems

A group led by Mobil Oil Company has placed an order with General Electric Company, Stamford, Conn., for five gas turbine power systems.

The contract, amounting to approximately $25 million, is for the power systems to be used on the Statfjord "B" drilling platform on the Norwegian waters of the North Sea.

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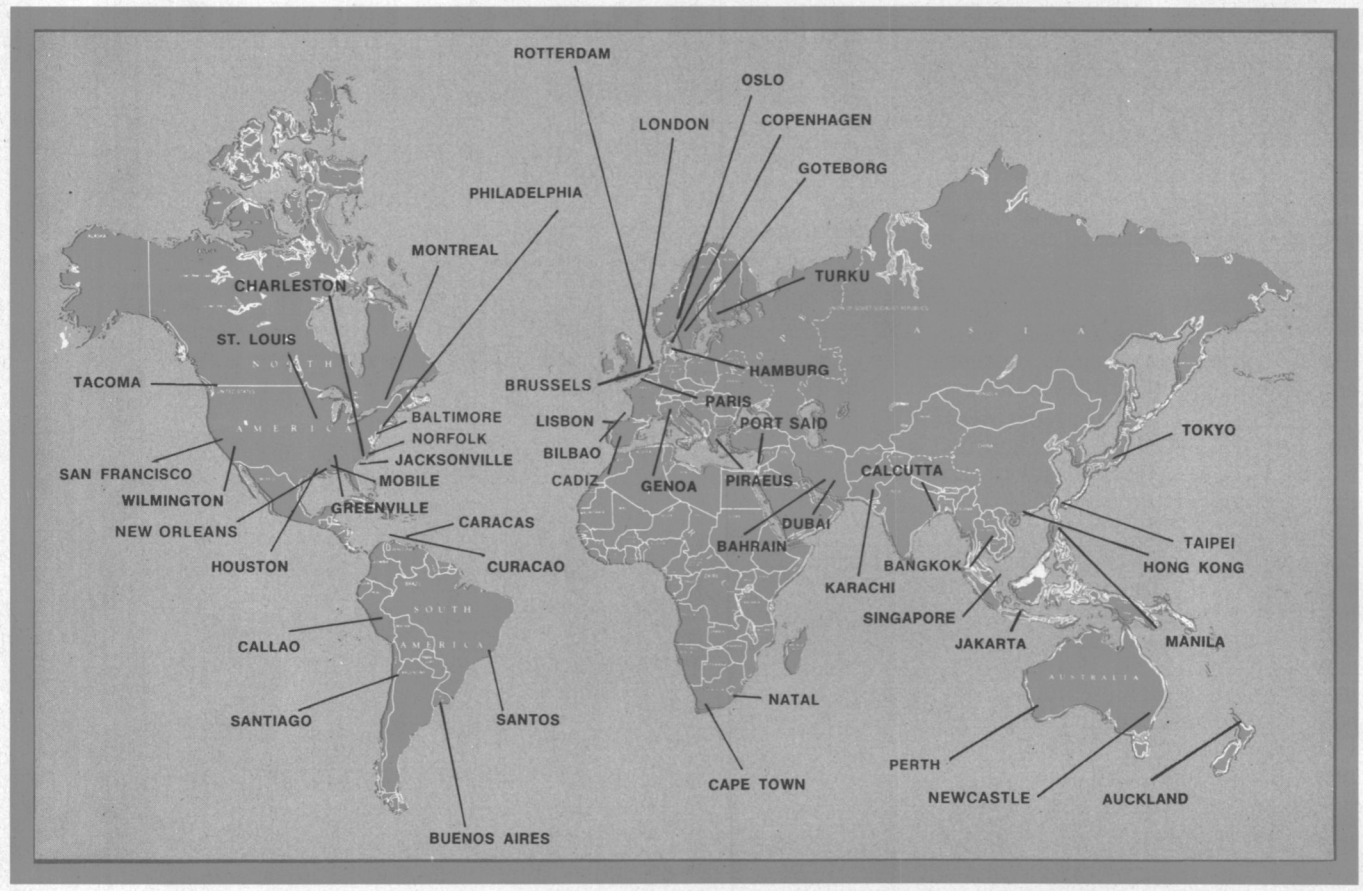

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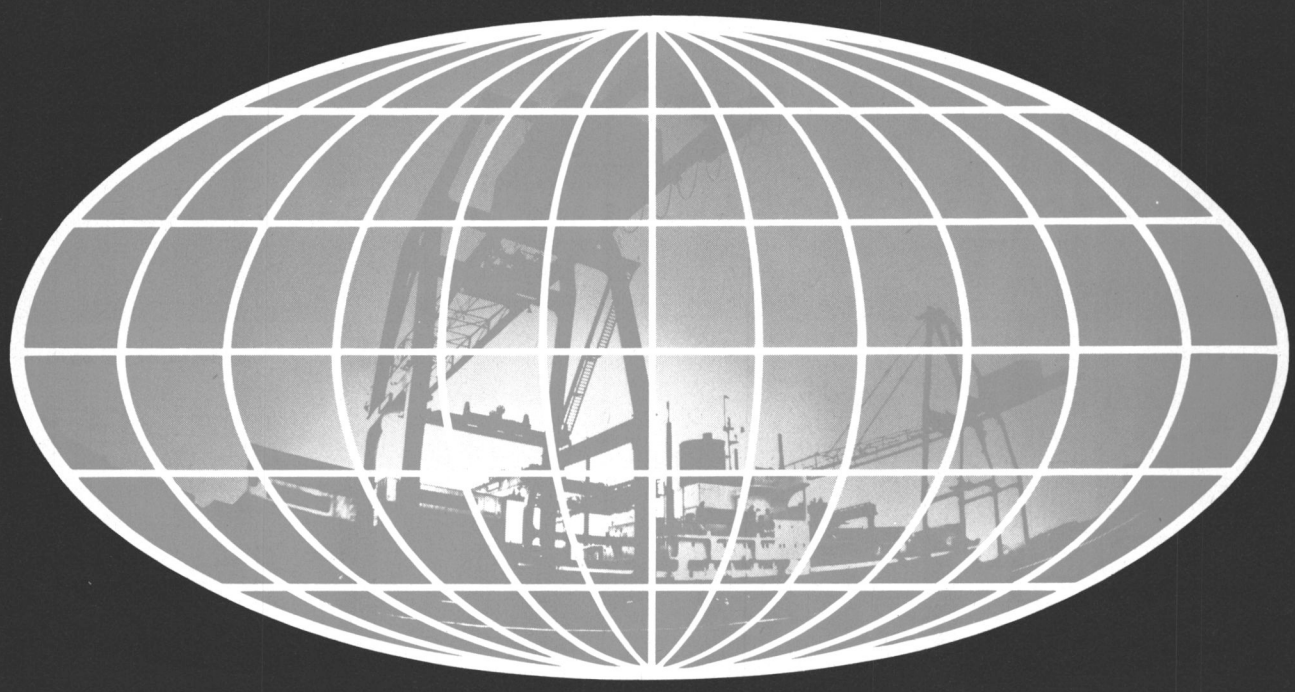

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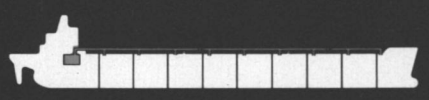

I.M.C.O. conference February 1978:

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with the Smit independent inert-gas system!

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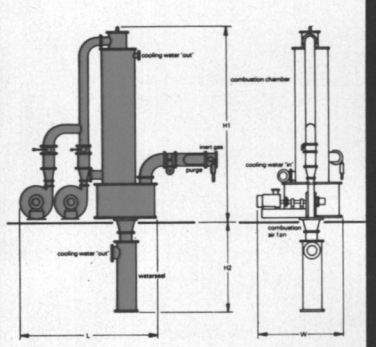

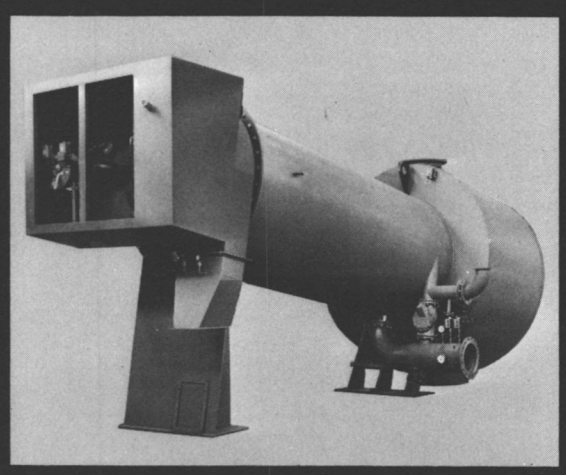

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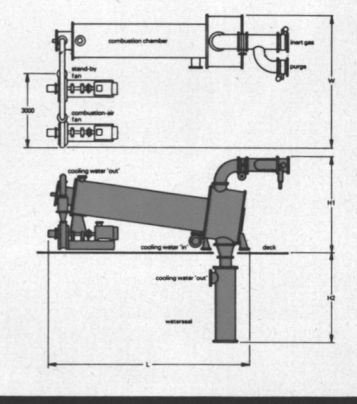

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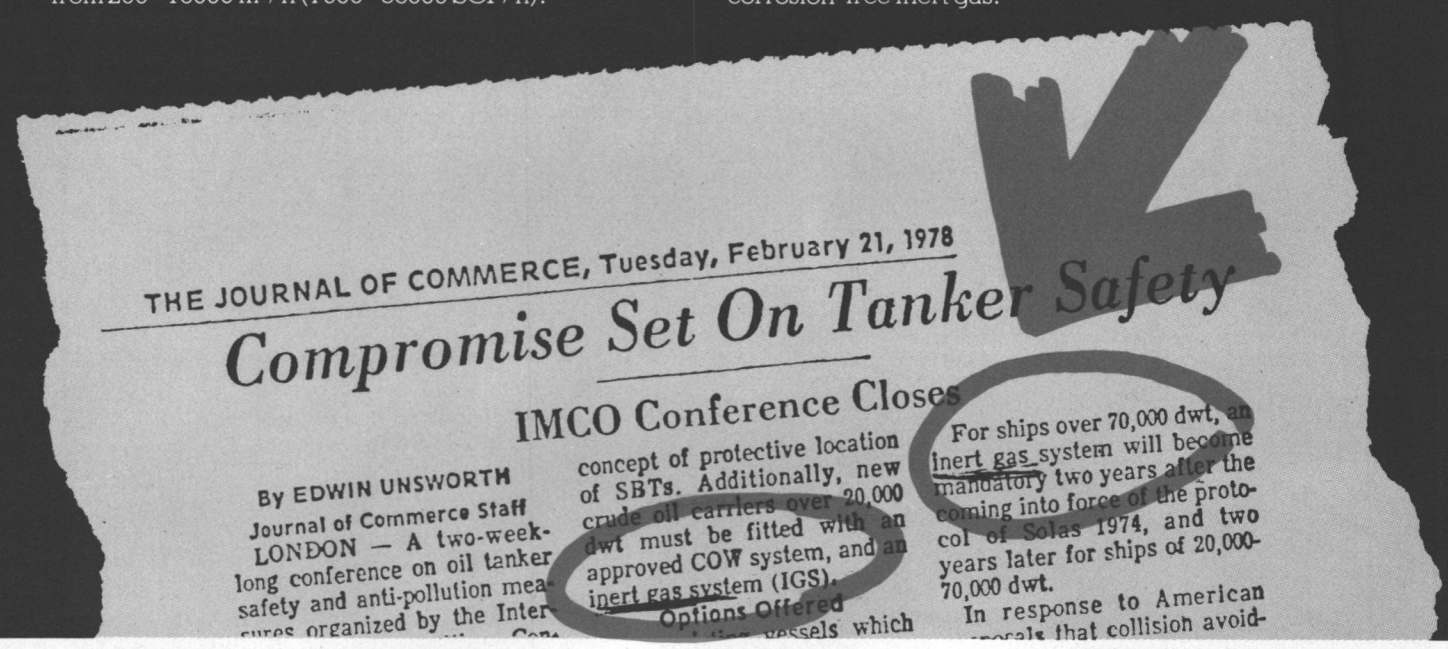

THE JOURNAL OF COMMERCE, Tuesday, February 21, 1978

Compromise Set On Tanker Safety

IMCO Conference Closes

By EDWIN UNSWORTH
Journal of Commerce Staff

LONDON — A two-week-long conference on oil tanker safety and anti-pollution measures organized by the Inter-

concept of protective location of SBTs. Additionally, new crude oil carriers over 20,000 dwt must be fitted with an approved COW system, and an inert gas system (IGS).

Options Offered

vessels which

For ships over 70,000 dwt, an inert gas system will become mandatory two years after the coming into force of the protocol of Solas 1974, and two years later for ships of 20,000-70,000 dwt.

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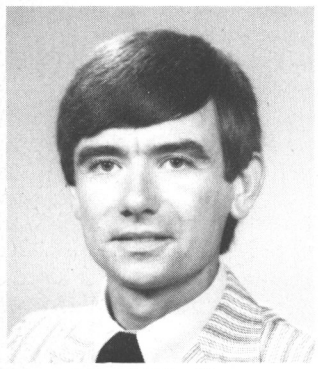
French Offshore Engineering Firm Opens Houston Office

EMH (Equipements Mecaniques et Hydrauliques) of France, best known for its exclusive design and the successful experience of its North Sea articulated columns, has opened an office in Houston, Texas, with **Daniel Graffan** in charge.



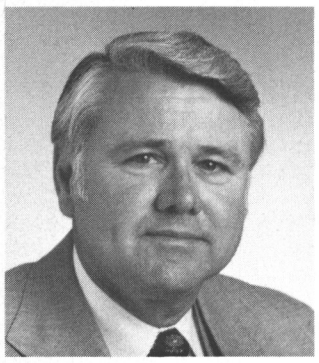
Daniel Graffan

Mr. **Graffan** is a graduate engineer and also holds a degree in business administration. He joined EMH in 1975, and he will represent the company in all its offshore activities.

EMH is located at 950 Threadneedle, Suite 200, Houston, Texas 77079.

Port Allen Marine Service, Inc. Names Walter Rody President

Port Allen Marine Service, Inc. has announced the appointment of **Walter W. Rody** as president. Mr. **Rody** was formerly an industrial, marine and management consultant, and has served as director and vice president of two of the major inland shipyards.



Walter W. Rody

Mr. **Rody,** a native of Tampa, is a graduate of Tulane University, New Orleans. He also pursued postgraduate studies at Louisiana State University and the University of South Alabama.

Port Allen Marine Service, Inc., Port Allen, La. 70767, a full-service shipyard which included five drydocks—two 500-ton-capacity, one 1,500-ton, one 1,800-ton, and one 2,100-ton-capacity — has repair facilities located on the Mississippi River and Intracoastal Waterway of Baton Rouge. Port Allen provides barge construction, "gas" free barge cleaning and complete barge repair. Port Allen Marine Service, Inc. is a subsidiary of Midland Enterprises Inc., Cincinnati, Ohio.

General Electric Credit Appoints James Kuklinski

James J. Kuklinski has been named Seattle, Wash., district credit manager for General Electric Credit Corporation's Industrial Equipment Financing Department.

The district office, located at 10604 N.E. 38th Place in suburban Kirkland, provides financing and leasing programs for manufacturers, distributors and users of heavy construction equipment, mining equipment, trucks, trailers, workboats, and commercial fishing vessels, machine tools and other production machinery throughout Washington, Montana, Idaho and Alaska.

Mr. **Kuklinski,** a native of St. Paul, Minn., had been a credit specialist for the Seattle office since last March, when he joined GECC after six years with the Seattle-First National Bank as a loan officer.

General Electric Credit Corporation is a wholly owned subsidiary of the General Electric Company, and the nation's largest diversified financial services firm. Its Industrial Equipment Financing Department is the No. 1 financial source in its field.



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The ship on the left (Mormacaltair) shows how the ship on the right (Mormacdraco) used to look before Todd Galveston added to her length and her value to her owners, Moore-McCormack Lines, Inc., a subsidiary of Moore McCormack Resources, Inc. The new enhanced ships are now 665 feet long—a hefty 115 feet longer than before—yet they travel at the same speed and use the same amount of fuel. If your cargo dollars want stretching, talk to Todd.

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Fourteen Papers To Be Presented At

SNAME Annual Meeting

Robert T. Young, president of The Society of Naval Architects and Marine Engineers, has announced the complete schedule for SNAME's 86th Annual Meeting to be held on November 16-18, 1978, at The New York Hilton Hotel.

The meeting actually begins on Wednesday afternoon, November 15, with the yearly Council meeting. Technical sessions take place Thursday and Friday, and the evening events include the Annual Banquet on Friday and the Dinner-Dance on Saturday.

At the simultaneous technical sessions, 14 papers will be presented. These have been specially selected so they present enough variety to interest all the attendees.

President **Young** will give his final message as president at the President's Luncheon in the Sutton Ballroom on Thursday the 16th. Featured on the program will be the presentation of several important awards—the Cochrane Award and the Joseph Linnard Prize. In the afternoon, at 4:00 p.m., the Annual Business Session will be held, where the members will act to elect a new president for a two-year term beginning January 1, 1979.

On Friday evening, the 17th, the Annual Banquet will take place in the Grand Ballroom. After the dinner, the Taylor, Land, and Davidson Medals will be presented. The Banquet speaker will be **Charles W. Robinson,** vice-chairman, Blyth Eastman Dillon & Co., Incorporated.

The David W. Taylor Medal, "For Notable Achievement in Naval Architecture and Marine Engineering," will be awarded to **John J. Nachtsheim,** Assistant Administrator for Operations, Maritime Administration. The Vice Admiral "Jerry" Land Medal, "For Outstanding Accomplishment in the Marine Field," will be given to Rear Adm. **William M. Benkert,** USCG (ret.), president of the American Institute of Merchant Shipping. The Davidson Medal, awarded every other year, will be presented to Dr. **Louis Landweber,** professor and research engineer, University of Iowa.

The 14 technical papers to be presented are:

Paper No. 1—"Ship Sway, Roll, and Yaw Motions in Oblique Seas" by **Rodney T. Schmitke.**

Synopsis—A theoretical model is presented for the prediction of ship sway, roll and yaw motions in oblique seas. The low-frequency behavior of this model is examined, with emphasis on beam seas. The prediction of roll damping is discussed in detail, including examples. Extensive comparisons of predicted and measured roll response are made.

Paper No. 2—"Wave Statistics for the Design of Ships and Ocean Structures" by **Michel K. Ochi.**

Synopsis—This paper presents wave information needed for predicting responses of ocean systems in a seaway, specifically for design consideration. A series of wave spectra to be used for short-term, as well as a series for long-term (lifetime) predictions are developed. Numerical computations are made on a semisubmersible platform; results are compared with those using wave spectra measured at various global locations.

Paper No. 3 — "Analysis and Control of Distortion in Welded Aluminum Structures" by **Koichi Masubuchi** and **Vassilios J. Papazoglou.**

Synopsis — Results of recent investigations on the subject are summarized. Three kinds of welding distortion are analyzed: longitudinal bending distortion, out-of-plane angular distortion, and buckling distortion. Experimental results are presented and compared with predictions obtained by computer programs.

Paper No. 4 — "Effect of Hull Girder Stiffness Variations on Ship Structural Performance" by **J. Harvey Evans** and **Roger G. Kline.**

Synopsis — A review of possible hull-stiffness problems reveals no cause for concern over insufficient stiffness per se. More relevant are whipping bending stress components from slamming or fatigue from springing. A procedure, based upon the "dynamic load factor" concept, is proposed for estimating whipping bending stresses during preliminary design, as a function of hull stiffness.

Paper No. 5 — "Analysis of a High-Power Water-Cooled Electric Propulsion System" by **D.L. Greene, C.J. Mole, W.P. Welch** and **W.R. Seng.**

Synopsis—The results of a study of a new class of water-cooled d-c electric machinery, as applied to a destroyer-type ship, are reported. The high-power density of this machine type makes it possible to take advantage of the arrangement and control flexibility of electric machines, without a volume and weight penalty. A description of expected ship performance and principal machinery characteristics is presented.

Paper No. 6—"Feasibility and Comparative Studies for the Use of Prestressed Concrete in Large Storage/Processing Vessels" by **Ben C. Gerwick Jr., A.E. Mansour, Edward Price** and **A. Thayamballi.**

Synopsis—The use of prestressed concrete for constructing storage/processing vessels and oceangoing liquefied gas carriers may have certain advantages. The technical feasibility and safety of a 300-meter-long prestressed concrete vessel carrying LPG in free-standing tanks is analyzed and evaluated. The results are compared with similar analysis of a steel hull designed on the basis of ABS requirements.

Paper No. 7—"Design of Bulbous Bows" by **Alfred M. Kracht.**

Synopsis—A quantitative design method for bulbous bows is presented, together with the necessary data, providing relationships between performance and main parameters of ships and bulbs. The derived design charts show the power gain as functions of bulb parameters and allow the calculation of the required power of a bulb ship.

Paper No. 8 — "Prediction of Steady and Unsteady Marine Propeller Performance by Numerical Lifting-Surface Theory" by **Justin E. Kerwin** and **Chang-Sup Lee.**

Synopsis — A numerical lifting-surface theory for marine propellers has been developed at M.I.T., for use as a practical tool in the solution of both steady and unsteady flow problems. This paper presents a view of the theory and a description of the numerical methods employed, followed by systematic tests establishing the numerical convergence of the procedure and a number of specific comparisons with published experimental and theoretical data.

Paper No. 9 — "Hull Experiments on 24-Knot RO/RO Vessels Directed Toward Fuel-Saving Application of Copper-Nickel" by **Eugene Schorsch, Richard T. Bicicchi** and **John W. Fu.**

Synopsis—To evaluate copper-nickel as a hull material in clad or sheathed forms for large commercial vessels, shipboard tests to determine Cu-Ni durability in high-speed vessel environment were performed. A rudder was sheathed and installed on a 24-knot ro/ro vessel; together with insulated and electro-chemically instrumented test panels. These tests indicated that the materials' erosion corrosion rates are within tolerable limits.

Paper No. 10—"Ice Effect Trials in Arctic Waters on CCGS Louis S. St. Laurent" by **Peter G. Noble, Roderick J. Allan, Malcolm Dunne** and **Brian Johnson.**

Synopsis — An Arctic probe was made in May 1977 with the CCGS Louis S. St. Laurent. Tests were carried out during the voyage from Nova Scotia to the western end of Lancaster Sound. Ship motions, accelerations and ice loads on the hull also were measured and are reported together with details of ice properties testing and the ship instrumentation system.

Paper No. 11 — "New Finnish Barge Carriers for the U.S.S.R." by **Veikko Koskivirta, Veikko Heikkila, Mikko Niini** and **Heikki Harjuvaara.**

Synopsis—The Finnish shipbuilding and engineering company Valmet Oy is currently constructing two 36,600-dwt barge carriers for the U.S.S.R., based on the Lykes SEABEE concept. The paper gives a brief description of the design and construction of the vessels. Main particulars of the 3,000-ton-capacity barge lifting and transferring arrangements also are given.

Paper No. 12 — "Development and Application of a Computer-Controlled Ship's Frame Bender in the Automated Shipyard" by **James B. Acton, Filippo Cali, Thomas P. Mackey** and **H.W. Mergler.**

Synopsis—A unique ship's frame bender with self-adaptive computer numerical control (CNC) has been developed and will be installed at NASSCO's San Diego shipyard. The CNC bender is compatible with existing shipyard automation programs using offset data generated by the shipyard's host computer, to bend or straighten frames automatically, resulting in significant cost savings and increased production efficiency.

Paper No. 13—"Modern Heavy-Lift Ships: State of the Art" by **H.W. Janecke** and **W.F. Muir.**

Synopsis—Types and concepts of modern heavy-lift ships are described and illustrated. Basic design characteristics and requirements are also discussed, together with typical heavy-lift gear and transfer equipment. Operation of heavy-lift vessels is covered with respect to planning, crewing and cargo handling. Also presented is an in-depth description of the first American-built modern heavy-lift ship.

Paper No. 14 — "Systems Approach to Offshore Crane Ship Operation" by **Dan Hoffman** and **Vincent K. Fitzgerald.**

Synopsis — The evolution of offshore crane vessels is described in relation to present design philosophy and operation criteria. Currently employed methods of on- and off-line analysis for predicting and minimizing downtime are discussed. Actual on-site data is presented to document the substantial improvements in operability achieved by vessels employing these methods. Particular emphasis is placed upon the onboard computerized and monitoring system (HELM).



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SNAME San Diego Section Discusses Heavy Lift Ship Design And Costs



Officers and guests shown at the SNAME San Diego Section September meeting are, left to right: **Benjamin Andrews,** featured speaker and author of the paper; **Don MacDonough,** Papers chairman; **Angus Murdoch,** vice chairman; **Wes Hickman,** secretary-treasurer, and **William Gordon,** chairman.

The San Diego Section of The Society of Naval Architects and Marine Engineers opened its 1978-79 program year by holding its September meeting at Caesar's Mission Valley, San Diego, Calif. **Benjamin V. Andrews,** maritime consultant, presented a comprehensive paper entitled "Heavy Lift Ship Design and Costs."

The paper covered the types of ships capable of carrying heavy lift cargo, which is defined as (1) a single unit of cargo in excess of 100 tons weight, or (2) a single unit of cargo exceeding a length of 80 feet or a width exceeding 15 feet. The author next described a series of parametric ship designs and costs that included a range of ship and barge sizes for the three basic methods of heavy lift cargo handling, lift, roll and float. The paper concluded with the problems that American-flag heavy lift vessels will have to overcome in order to be cost competitive.

The members and guests in attendance concluded the meeting with a question and discussion period.

First Kelvin-Powered Shrimp Boat Built In U.S.



The Gulf King 12 is powered by a Kelvin Model TASC8 marine diesel engine rated at 415 shp. Her fish hold can handle 2,600 cubic feet of shrimp.

Rockport Yacht & Supply Company, Inc. of Rockport, Texas, has delivered the Gulf King 12 to the Gulf King Shrimp Company of Aransas Pass, Texas.

The newest addition to a fleet of 50 shrimp boats, the 75-foot-long by 20-foot-wide by 10-foot-deep vessel has a fuel capacity of 12,500 gallons and a freshwater supply of 2,500 gallons. The fish hold can handle 2,600 cubic feet of shrimp.

The main engine on this vessel is a Kelvin Model TASC8 marine diesel engine rated at 415 shp at 1,200 rpm. This engine is a 4-stroke cycle, direct injection, turbocharged and after-cooled type and drives a Reintjes gearbox with a 4.824:1 ratio.

Main engine throttle and shaft controls for the pilothouse are Morse Type "Twin S." Two JABSCO electric clutch 1¼" pumps are utilized for bilge pumping; one pump belt driven from the front P.T.O. on the main engine and the other one is driven by a Lister diesel engine which is also used for chain and sprocket emergency pickup on a hoister shaft. The tailshaft is stainless-steel type 17-4 PH, and the propeller is a Federal Bronze, four-blade-type, 68-inch-diameter by 68-inch-pitch driving through a Michigan wheel ducted system.

Fresh water is delivered by a Lerio 32V DC pressure set. The automatic pilot is Model 15B "Wood Freeman" directly connected to the steering wheel. The sounder is a Morrow Model 2001 depth sounder with transducer. Two radios are onboard; one a Patterson 310SSB and one Pierce-Simpson VHF. A Cobra SSB CB is also installed along with a Raytheon radar system.

Kelvin Diesels are manufactured in Scotland, and are sold and serviced by Alco Industrial Power, Inc., a subsidiary of Alco Power Inc., a leading American manufacturer of diesel engines, which is also a subsidiary of GEC Diesels Limited of Newton-le-Willows, England. Alco Industrial Power, Inc., has offices and warehouse in Houston, Texas, and is at present actively engaged in setting up a distribution network for the sales and service of the Kelvin range of marine engines in the United States.

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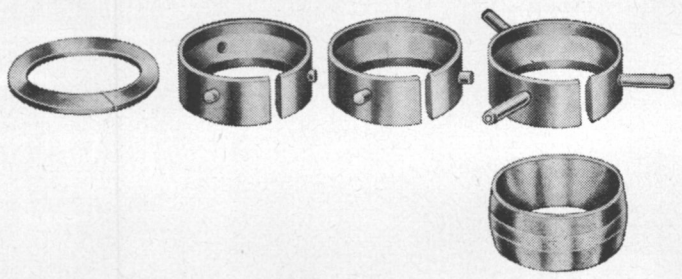

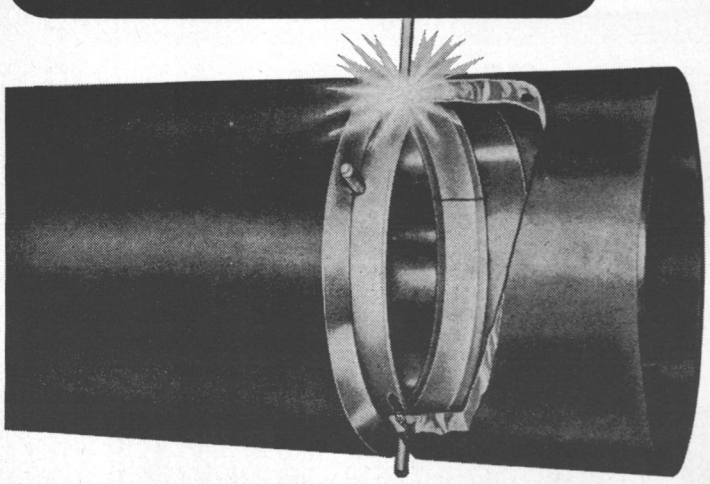

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Title XI Amendment Approved By MarAd For Drilling Barges

U.S. Department of Commerce, Maritime Administration Deputy Assistant Secretary **Samuel B. Nemirow** has approved an amendment to a Title XI guarantee to aid in financing the construction of two posted drilling barges. The amendment to the agreement with Inland Wells Service, Inc., 1930 South State Street, Abbeville, La., extends the economic life of each of the vessels to 25 years, and reflects an increase in their actual costs.

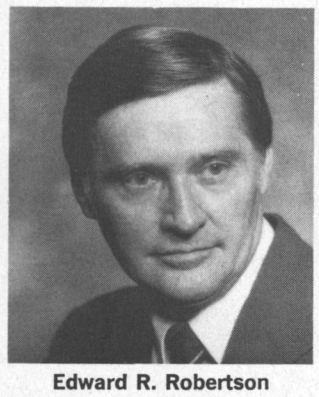
On June 29, 1978, Mr. **Nemirow** approved in principle Inland's Title XI application. The estimated actual cost of each vessel at that time was approximately $4.4 million. Due to cost increases, the figures have been revised to approximately $5.1 million for one rig, and $5.4 million for the other.

Originally, the economic life of each of these vessels was set at 20 years. However, Inland reserved the right to appeal this decision, because they believed they could marshal evidence showing that the vessels would be capable of achieving a longer economic life. After subsequent meetings between Inland and the Maritime Administration, the change was approved.

The barges will be used in shallow inland water areas in the exploratory drilling or workover markets.

Edward Robertson Named Engineering Director At ORBA Corporation

ORBA Corporation has announced that **Edward R. Robertson** has been promoted to the position of director of engineering and construction. In his new position, Mr. **Robertson** will be responsible for ORBA's engineering and construction activities.



Edward R. Robertson

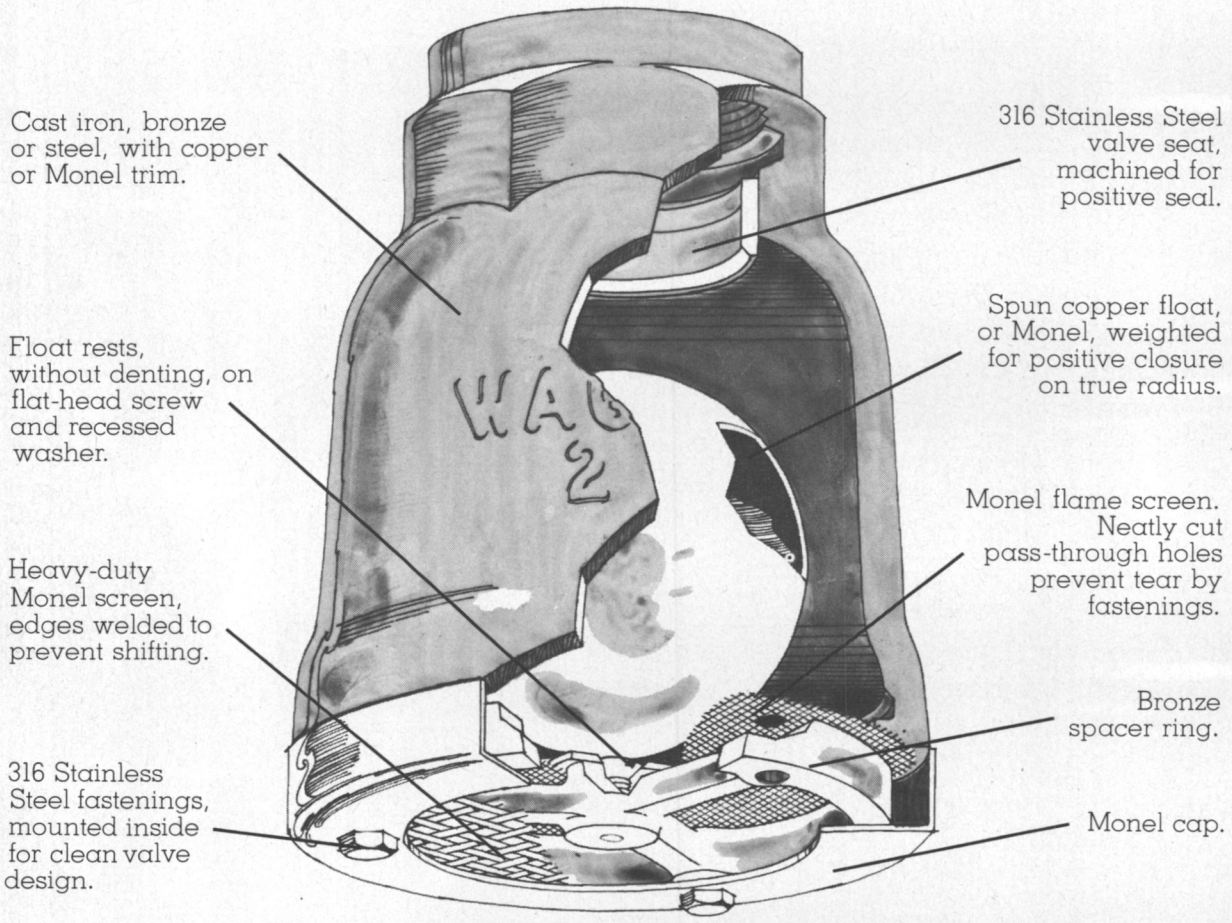
Mr. **Robertson** has a B.S. degree in civil engineering from Carnegie-Mellon University, and attended the University of Rochester. He is a licensed professional engineer in New Jersey and Pennsylvania, and is a member of the American Society of Civil Engineers, American Society of Testing and Materials, and National Society of Professional Engineers.

Mr. **Robertson** has over 20 years' experience in the materials handling and consulting engineering fields, and has held positions such as project manager, senior project manager, chief engineer, manager of systems construction, as well as being executive vice president of Pandullo, Chrisbacher & Associates.

ORBA is an international firm which specializes in the design, engineering, construction and operation of dry bulk handling systems. The Superior Midwest Energy Coal Terminal, designed, built and operated by ORBA, was selected by the American Society of Civil Engineers as the Outstanding Civil Engineering Achievement of 1977, and by the National Society of Professional Engineers as one of the Ten Outstanding Engineering Achievements in the United States in 1976.

ORBA's world headquarters are at One Gothic Plaza, Fairfield, N.J. ORBA is a unit of AMCA International Corporation of Hanover, N.H., a diversified corporation, with major activities in energy, engineering, construction and manufacturing.

The Best Vent Valves in The Business Period.



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This is the innovative "ball float" vent valve that Wager originated, perfected by us over the years. These Wager valves meet or exceed current ABS, USCG and NAVY specs. Hundreds of thousands are in service—more going into service every day. Promptly shipped from stock inventory—by air to answer critical needs.

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Bridge the gap with the Argo/Clear Water team to satisfy your marine sanitation requirements. The Argo/Clear Water team has the expertise you need for your pollution solution.

Among the companies that have purchased Clear Water equipment are: Getty Oil, Marine Transport Lines, NOAA, Mobil Oil, American Export Lines, Moran Towing, McAllister Towing, Costa Lines, and Transoceanic Marine.

Clear Water marine sewage treatment systems have set the standard for reliability, simplicity of automatic operation, compactness and minimal installation and maintenance cost. Whether it's a workboat or VLCC, Argo Marine, authorized distributor for Clear Water, will deliver exactly the right system.

For Sea Ecology ... see Argo, your bridge to Clear Water.

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SANI-RATOR

MARLAND MTT3

SANI-SYSTEM 600

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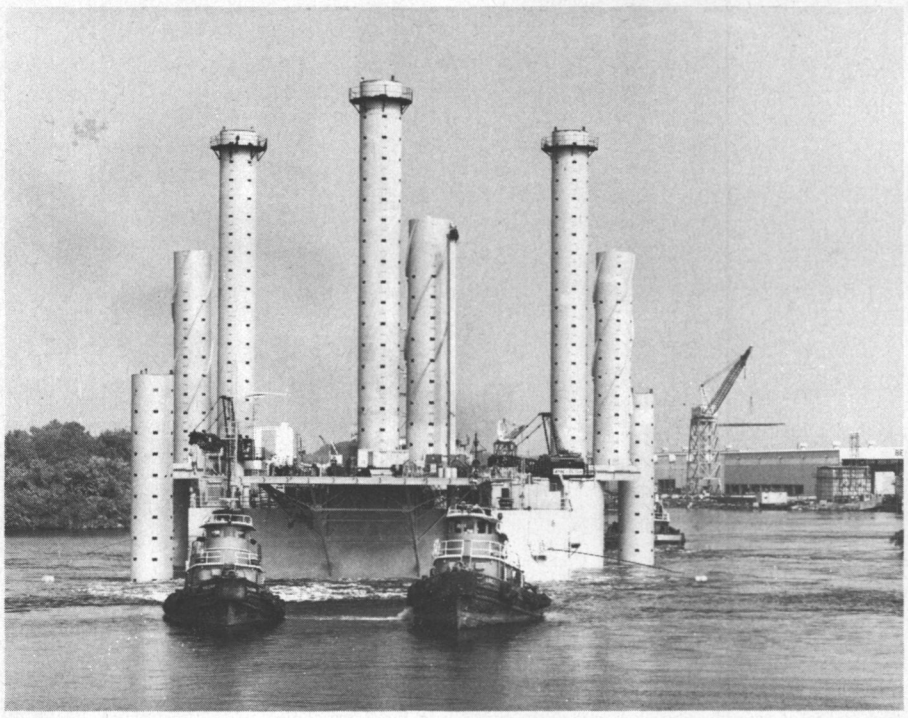
Bethlehem Beaumont Shipyard Delivers Fourth Offshore Rig To Teledyne Movible Offshore



Teledyne 19 is towed from Bethlehem Steel Corporation's shipyard in Beaumont, Texas, preparatory to final construction work and delivery to the owner, Teledyne Movible Offshore Inc. of Lafayette, La.

Teledyne 19 became the newest addition to the world's offshore drilling fleet when it was commissioned recently at Bethlehem Steel Corporation's shipyard in Beaumont, Texas. The rig is owned by Teledyne Movible Offshore Inc. of Lafayette, La.

Mrs. Robert A. Nelson, wife of Teledyne's division manager of drilling, sponsored the new rig.

The new mobile platform is capable of drilling to a depth of 25,000 feet in as much as 250 feet of water.

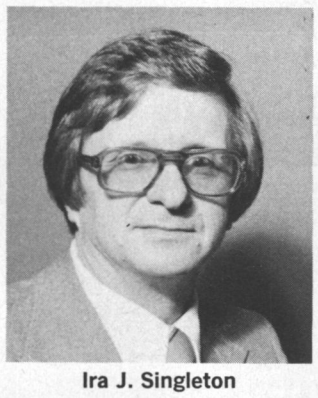
Teledyne 19, a mat-supported jackup offshore drilling platform, is the 44th such rig delivered by the Beaumont Yard, and the fourth Bethlehem-designed rig to be built for Teledyne. The unit consists of a platform 166 feet long, 132 feet wide and 16 feet deep, with a 50-foot-square drilling slot. The mat is 210 feet by 170 feet by 10 feet deep and its drilling slot is 90 feet by 87 feet. Each of the three cylindrical columns are 312 feet long and 12 feet O.D.

This new Teledyne rig is diesel-electric powered and can house 60 workers in its noncombustible living quarters. There is also capacity to store 6,600 cubic feet of bulk mud and cement, 3,000 sacks, 1,500 barrels of active mud, 4,700 barrels of drilling water storage, 450 barrels of potable water, 1,800 barrels of fuel oil and 2,350 barrels of salt water.



Mrs. Robert A. Nelson, sponsor of Teledyne 19, prepares to smash the traditional bottle of champagne during commissioning of the offshore mat-supported drilling vessel. To her left is **Sherman C. Perry,** general manager of Bethlehem Steel Corporation's shipyard in Beaumont, Texas, where the rig was built, and seated at right is Mr. **Nelson,** Teledyne's division manager of drilling.

Hillman Barge And Construction Names Ira Singleton VP



Ira J. Singleton

Hillman Barge & Construction Company, Brownsville, Pa., has announced the appointment of **Ira J. Singleton** as vice president-manufacturing. In his new capacity, Mr. **Singleton** will be responsible for the overall production operations of the barge and towboat manufacturing facility.

Mr. **Singleton** began employment with Hillman in 1951 as a draftsman, and held various middle and top management posts since then, including assistant chief engineer, chief engineer, assistant general manager, general manager and assistant to the president and manager of plant facilities.

Mr. **Singleton** received a Bachelor of Science degree from California State College, and completed postgraduate courses in engineering at the University of Pittsburgh.

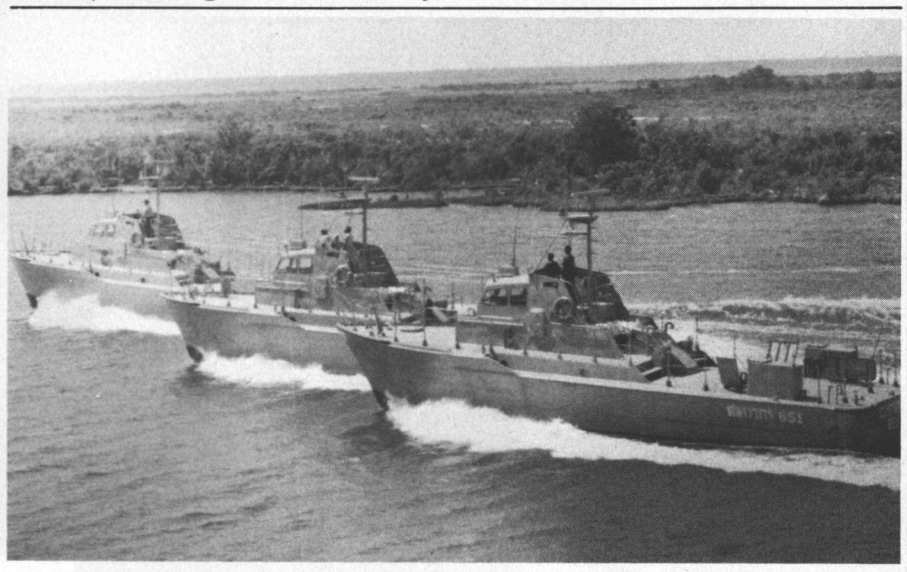
Active in church community affairs, Mr. **Singleton** is currently a trustee of the Christian and Missionary Alliance Church, and a board member of the West Brownsville Municipal Authority. Professionally, Mr. **Singleton** is a member of The Society of Naval Architects and Marine Engineers, The Propeller Club of the United States (Port of Pittsburgh), and serves on the Technical Advisory Staff of the American Bureau of Shipping.

Nav-Com Inc. Forms Custom Systems Group

Gerald A. Gutman, president of Nav-Com Incorporated, North Lindenhurst, N.Y., has announced the formation of Nav-Com's Custom Systems Division. The new Custom Systems Division, headed up by Nav-Com's vice president of engineering **Jack Provenzano,** will specialize in the design, fabrication, installation and support of Custom Communication and Navigation Systems to meet the commercial user's specific needs. Systems support will be under the direction of Nav-Com's vice president of operations **Al Carlson.**

Custom Systems fabricated by Nav-Com include shipboard automatic "error-correcting" Radiotelex Communication Systems, Remote Base Stations, Navigation Computers, "On-Board" UHF Repeaters, Satellite Navigation Systems, Radar and Sonar Systems.

For a free copy of Nav-Com's Communication and Navigation Brochure, write **Gerald A. Gutman,** Nav-Com Incorporated, 2 Hicks Street, North Lindenhurst, N.Y. 11757.



HALTER VESSELS TO THAILAND — The three all-aluminum boats shown above were delivered recently by Halter Marine, Inc., New Orleans, La., to the U.S. Government for the use of the Government of Thailand in its customs operations. They are 65 feet long, with a 17-foot beam, and 8-foot 3-inch depth. Each is powered by two Detroit Diesel 1271TI diesel engines.

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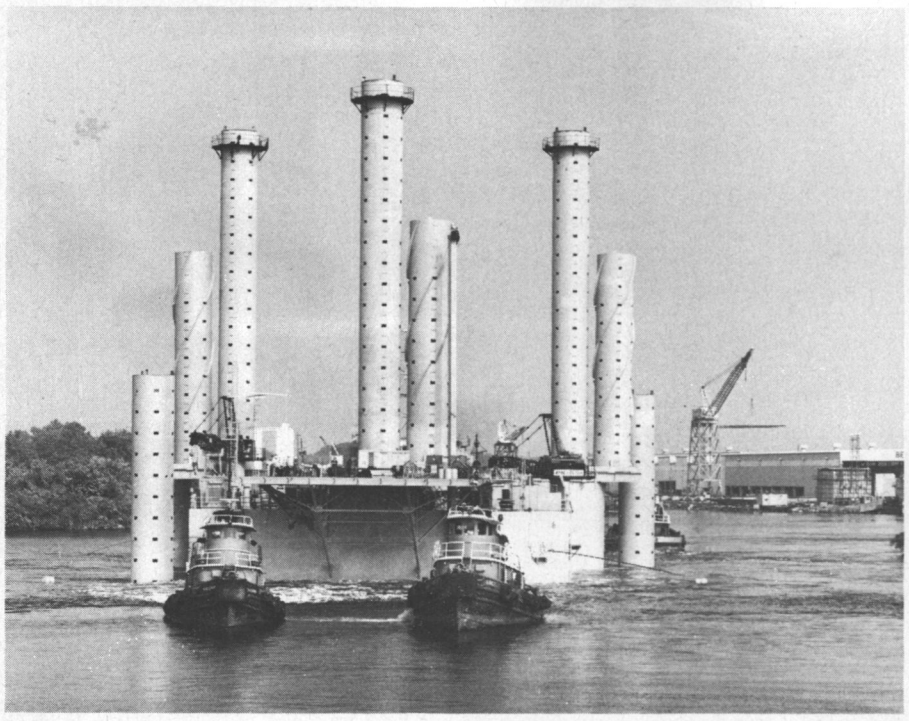

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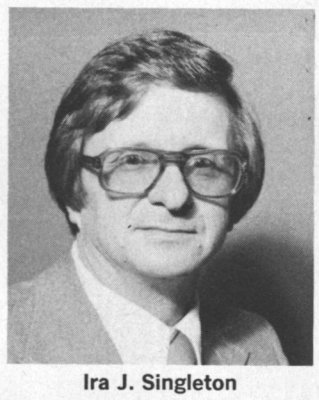

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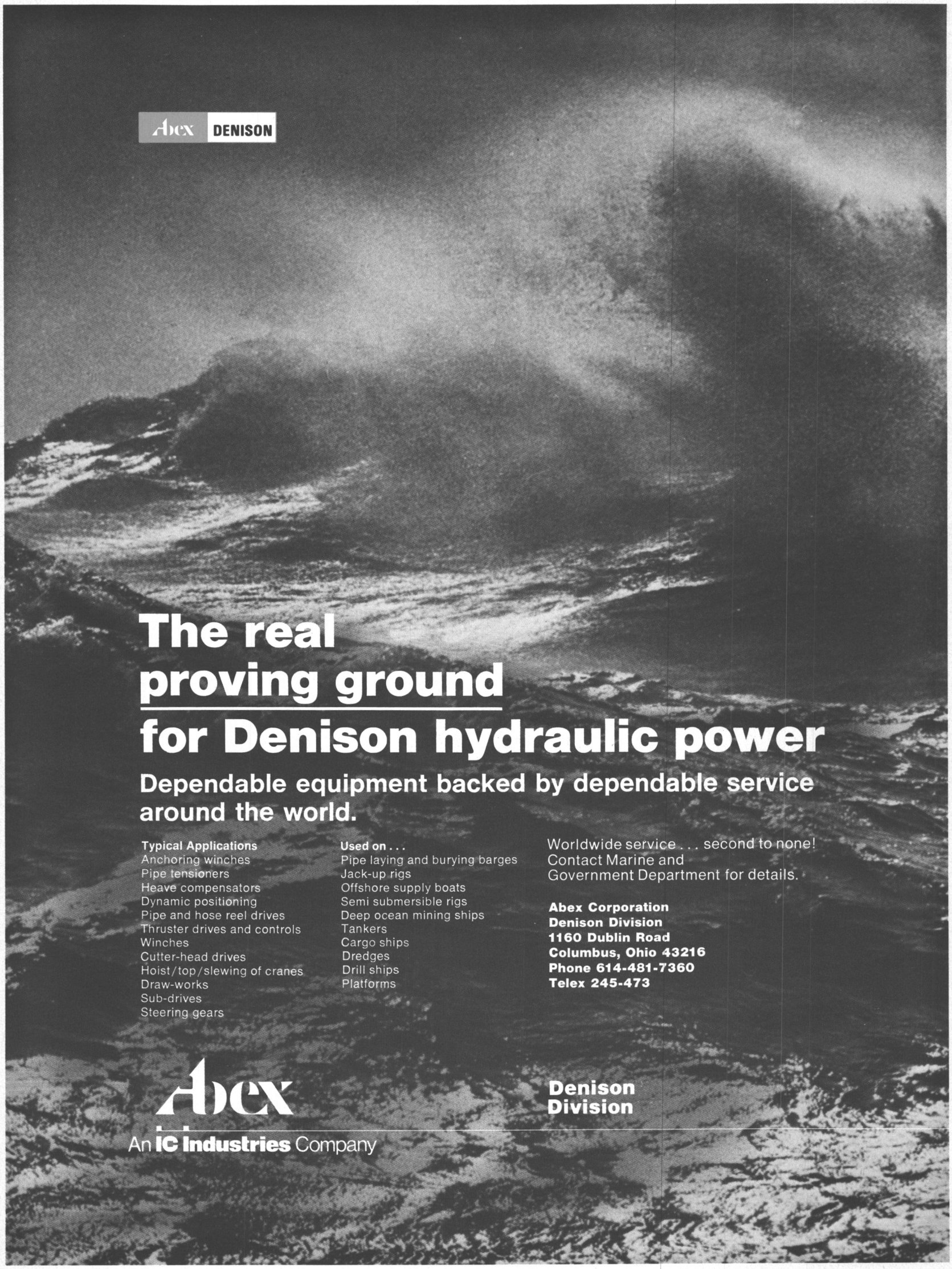
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Nilsen Named President Bailey Refrigeration And Affiliated Companies

Ralph R. Bailey, chairman of the board of Bailey Refrigeration Co., Inc., Brooklyn, N.Y., has announced the appointment of **Sigurd Nilsen** as president of that company and their affiliated companies.

Mr. **Nilsen** has been associated with the marine industry since his discharge from active duty with the U.S. Navy in 1945. In 1951, he joined the Bailey organization and has served in sales and executive capacities for all of the companies of the Bailey Group. Prior to his newly acquired post, he has been executive vice president since 1972.

The Bailey Group consists of Bailey Refrigeration Co., Inc., which installs complete air-conditioning and refrigeration systems, handles conversions, alterations and repairs, and provides round-the-clock service in emergencies. Bailey Distributors, Inc. maintains a vast inventory of replacement parts and complete units to insure almost immediate delivery from their branch warehouses on the East and Gulf Coasts.



Sigurd Nilsen

Bailey Carpenter & Insulation Co., Inc. handles the insulation of compartments for refrigerated cargoes and stores and the modernization of interiors, as well as voyage repairs to speed turnarounds.

Bailey Joiner Co., Inc. offers a complete line of marine furniture and can deliver individual replacements for a small vessel or outfit an entire cruise ship.

Ted Ellis Joins Crowley Maritime

Ted Ellis has joined Crowley Maritime Corporation's Caribbean Division, Jacksonville, Fla., as director of sales, according to a recent announcement by **Robert G. Homan,** senior vice president of the division.

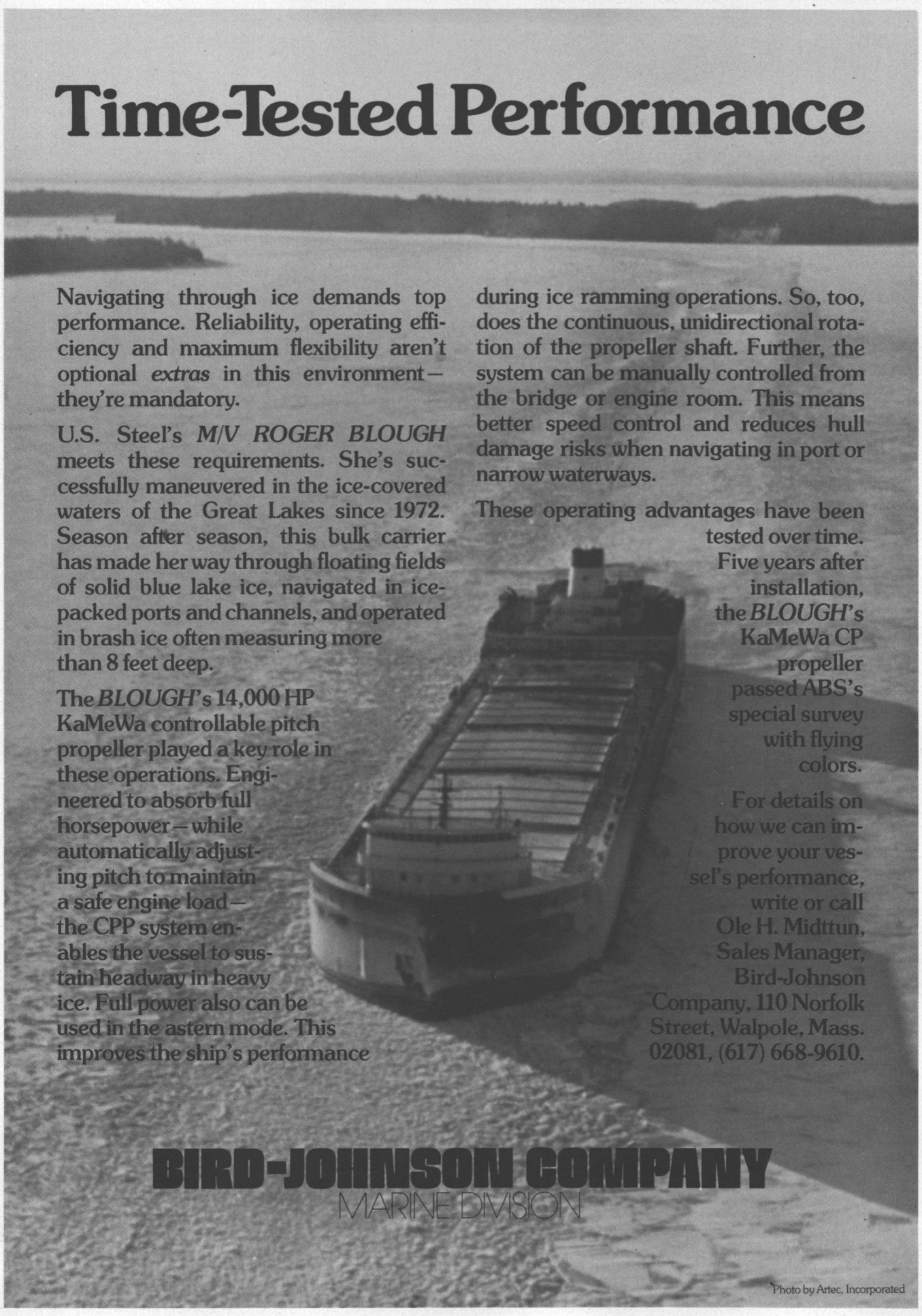


Ted Ellis

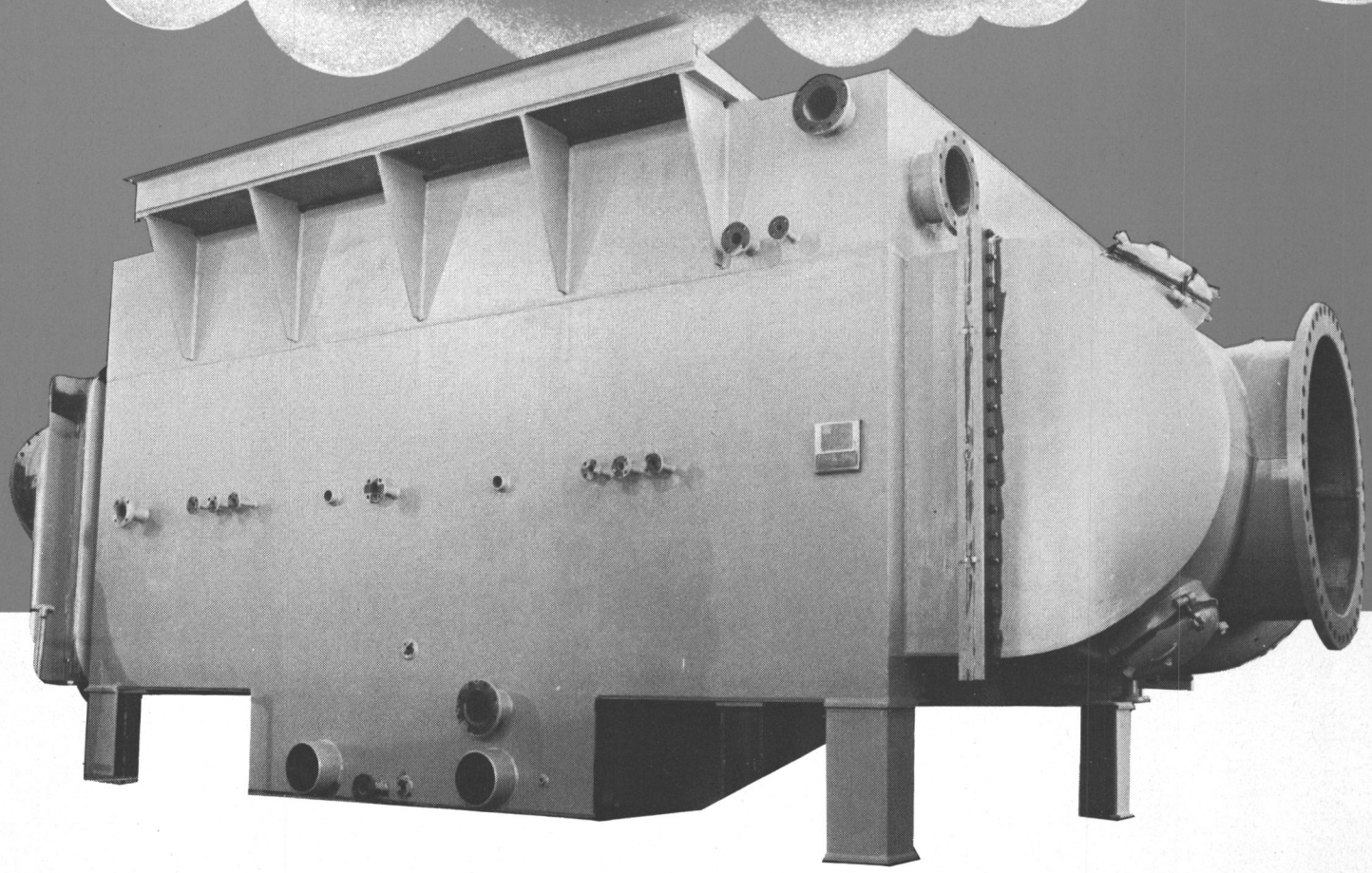
Mr. **Ellis** was formerly vice president for one of the nation's largest surface freight forwarders. He also previously held a key marketing and sales executive position with a major Eastern motor carrier.

In his new position, Mr. **Ellis** will be responsible for domestic field sales management. All regional marketing offices in San Francisco, Chicago, New York City, St. Louis, and Atlanta, and district marketing offices in the port cities of Jacksonville and Miami will report directly to Mr. **Ellis.**

Crowley's Caribbean operations include Trailer Marine Transport Corporation, which provides ro/ro trailer service between the U.S. mainland and Puerto Rico; Gulf Caribbean Marine Lines, which provides pass/pass warehouse barge service between the U.S. and Caribbean; and CTMT, Inc. and Interisland Intermodal Line, which operate feeder services to many ports throughout the Caribbean.



PUT YOUR TURBINE EXHAUST IN ITS PLACE



Into a condenser made by Delaval, the No. 1 U.S. supplier of condensers for the merchant and naval fleets of the world. We've built condensers for mammoth oil and LNG tankers. For roll on/roll off vessels. VLCC. Containerships. And for surface and undersea naval vessels. Fossil fueled and nuclear powered.

We have the expertise to custom design and build a condenser that will be performance-matched and metallurgically compatible with your stated operating conditions. Whether you need a 1,000 sq. ft. unit for a ship's service turbine-generator, a 5,000 sq. ft. condenser to serve an auxiliary propulsion unit, or a pair of 50,000 sq. ft. giants for the main propulsion units, Delaval has the experience to meet your requirements.

Delaval's concept of condenser performance is an integrated program that starts with our engineers learning all about your condenser requirements.

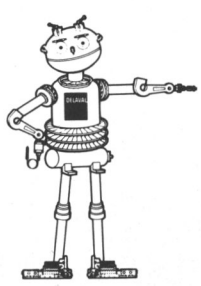
Then, we design the condenser with the help of our IBM 1130. Build it with meticulous attention to every detail. We meet the standards established by the Heat Exchange Institute — and when required — A.B.S., MIL-Q-9858A, ASME Section VIII ("U" and "PP" stamps), ASME Section III ("N", "N-3" and "NPT" stamps).

Every fabrication step is scrutinized by our quality assurance group. We assist with on-board installation and start-up. And our field engineers can train your people to operate and maintain the unit.

This is why Delaval is No. 1 in marine condensers. So, it makes good sense to come to us for your next condenser.

For further information contact:

Condenser and Filter Division
DELAVAL TURBINE INC.
Florence, N.J. 08518
(609) 499-3000



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Offshore Logistics Buys Six Theriot Towing/Supply Vessels

Offshore Logistics, Inc., P.O. Box 5C, Lafayette, La. 70505, has announced that it has reached agreement in principle with Theriot Offshore International Ltd. to purchase six towing supply and anchor-handling vessels for a price of approximately $18 million. These vessels were constructed in 1974 and 1975 under United Kingdom registry and were designed for service in the North Sea and other extreme weather areas.

Burt H. Keenan, president and chairman of the board of directors, stated: "The North Sea is an area where we foresee long-term market opportunities in offshore transportation, and these vessels will form the nucleus of our North Sea fleet. This acquisition underlines our commitment to provide the best in marine and aviation transportation service to the oil industry throughout the world, and will allow us to increase our participation in an improving international market."

Offshore Logistics operates approximately 116 vessels and 115 aircraft in support of the oil and gas industry throughout the world. The company also provides helicopter maintenance and technical support through its subsidiary, Heliflight Systems, Inc.

Chemical Tanker Demand Subject Of MarAd Study

The Maritime Administration has awarded a $226,000 contract to International Maritime Associates, Inc. (IMA), a Washington, D.C. management consulting and planning firm, to study future demand for product and chemical tankers. Participating with IMA in the project are Chem Systems, Hydronautics, and Avondale Shipyards. The objective is to project demand for product and chemical tankers, develop conceptual ship designs, and identify actions needed to maximize U.S. shipbuilders' penetration in the future market.

This study will be performed in two phases, with the first phase scheduled for completion in early July 1979 and the second phase in December 1979.

IMA recently completed a study of the ship repair market, working with U.S. Lines and Bethlehem Steel's Key Highway Yard. This study, also performed for the Maritime Administration, projected the size and nature of the ship repair market through the next decade. The report entitled "A Ship Repair Market Assessment" is available through the MarAd Office of Commercial Development.

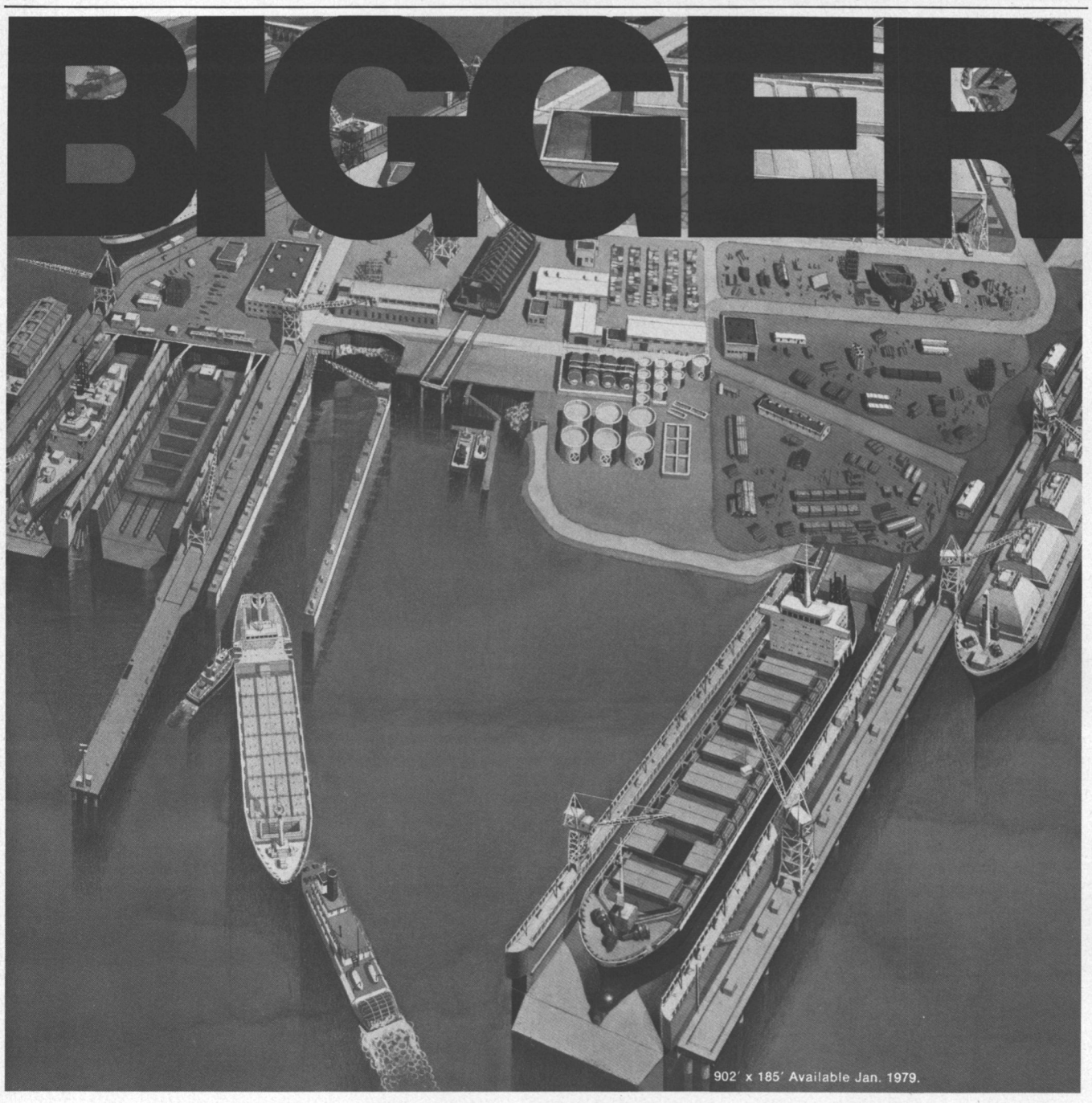
United States Navigation Names William Kelly VP

William B. Kelly has been named vice president for sales and marketing of United States Navigation, Inc., it was announced by president **Donald F. Wierda.**

Mr. **Kelly** was previously managing director-Atlantic for American President Lines in New York, and has held similar positions for APL and Matson Navigation Company in Chicago.

"The appointment of **Bill Kelly** is a further step toward strengthening the marketing and sales staff of United States Navigation, Inc. throughout the United States, and brings to the company expertise in intermodalism to better serve our many shippers and importers and our various principals throughout the world," said Mr. **Wierda.**

United States Navigation acts as General Agents for Hapag-Lloyd's North Atlantic container service for Northern Europe; Ivaran's new container service to the east coast of South America; Scindia Line from the United States to the Far East, Indonesian, and Indian ports; Mamenic Line in Nicaragua and Central America; and Transnave's new Ecuadorian line trading in Ecuador and other ports on the west coast of South America.



AND BETTER.

At Northwest Marine Iron Works, bigger definitely means better. Take the fact we're one of the country's largest ship repair contractors for instance. In January, 1979 add the largest floating drydock on the entire West Coast. Back it up with a large, reliable and highly skilled work force, with the ability to do repairs, conversions and new construction. Include all the necessary shops and support facilities. What you have is a good facility that's about to become one of the biggest and best available anywhere. One that will continue to provide the same Northwest Marine high quality work, quick turnaround and the lowest possible prices, but with far greater convenience for every ship owner operating in the Pacific.

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European Representatives: ATPAC
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A. Silchenstedt, Bergen, Norway
A/S Krogstads, Oslo, Norway
Paul Gregersen, Copenhagen, Denmark

NORTHWEST MARINE IRON WORKS



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.

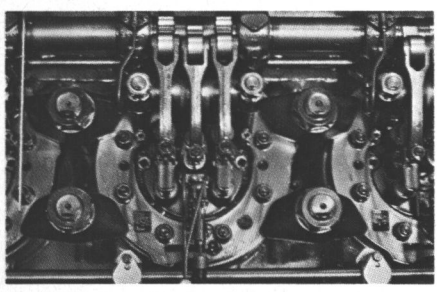
How Shell's CAPRINUS® R Oil 40 is helping keep EMD's clean with low wear in the 8,400-hp Dennis Hendrix

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.

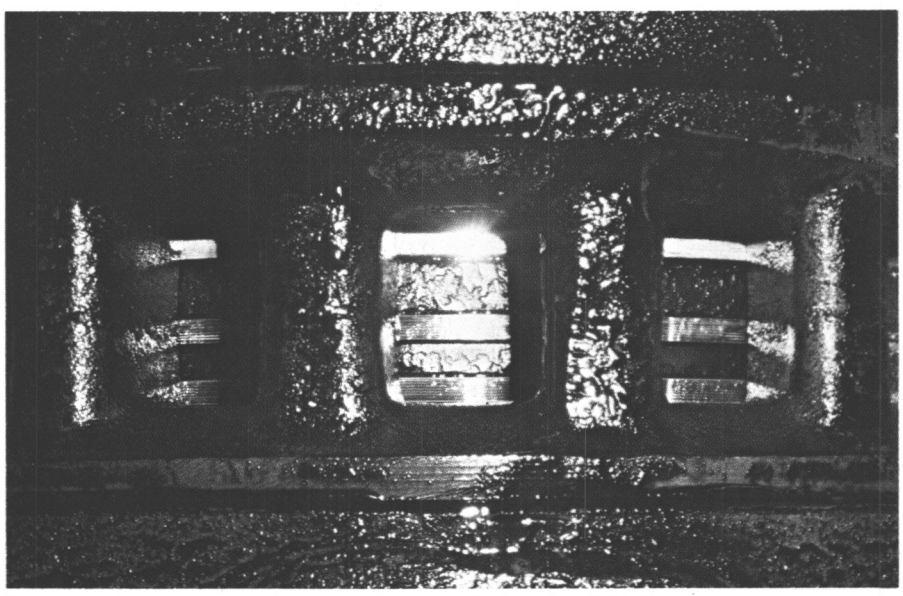
One of the most powerful towboats on the waterways, the *M/V Dennis Hendrix*, was built by Jeffboat, Inc. It has been in service since July, 1977 for the American Commercial Barge Line located in Jeffersonville, Indiana.

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



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.

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. CAPRINUS R Oil's dispersant additive system helps keep contaminants in suspension, prevents heavy deposit buildup on filters. That can mean important savings.

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

Raytheon invites you to compare.

No other radar system gives you so much.

Direct daylight viewing without hoods or curtains.

Only Mariners Pathfinder® 12 and 16-inch Radars can be viewed directly in all ambient light conditions, even bright daylight. A welcome change for daytime watches. No more hoods, curtains, or sore eyes. No more interrupted vision because of dark-to-light eye adjustment. Moreover, two or more members of a watch can view the scope simultaneously.



Two-level video enhances targets and minimizes clutter.

All 12 and 16-inch Mariners Pathfinder® Radars feature Raytheon's exclusive two-level digitized video-enhancement. As a result, larger and taller targets are displayed even more brilliantly than smaller or lower targets. The two-tone "three-dimensional" effect is both remarkable and useful. Tall buildings, vessel superstructures, and similar targets are clearly defined for easy identification.

With two levels of video, rain and sea clutter appear at a lower signal level than targets. This improves the effectiveness of clutter suppression circuits and increases target definition.

Interference rejection reduces noise, improves contrast, and provides positive after-glow trails.

Raytheon's remarkably effective "sweep-comparison" interference rejection gives you a picture that is free of RF interference and noise. Contrast is improved, especially for weak targets. Most important, moving targets leave well defined after-glow trails for positive assessment of surrounding traffic.

Accurate, digital readout ranging out to 64 miles.

Raytheon's Variable Range Marker gives continuous digital readouts from 0 to 64 miles.

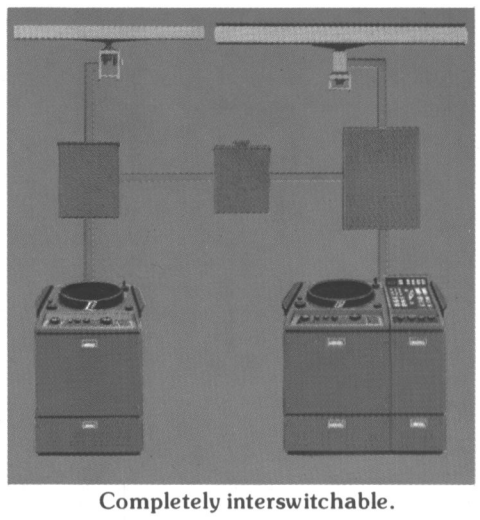
Automatic intensity control increases scope life.

Even with bright display

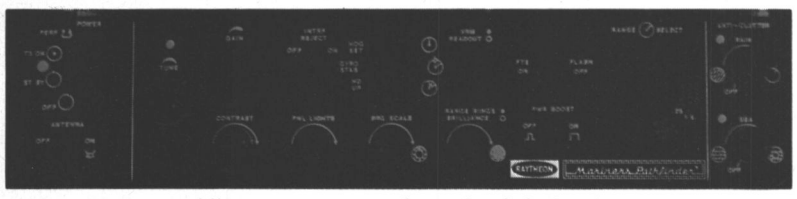
viewing, you can rely on Raytheon for increased scope life. Special video amplifier circuits selectively reduce gain on strong, short-range echoes. This automatically assures a uniform intensity level over the entire scope on all ranges. Viewing is easier... and scope life is increased by eliminating excessive intensity in the center of the scope.

Easiest of all nighttime operation.

You'll also find 12 and 16-inch Mariners Pathfinder® Radars are designed for the easiest nighttime operation. For fast identification all operating controls and legends are carefully "back-lighted" with adjustable illumination. In addition, a specially selected orange/red phosphor is used for the scope. The end result is more efficient nighttime operation... even for prolonged periods, without excessive eye strain or impaired night vision.



Completely interswitchable.



All operating controls are back-lighted.

Superior resolution and long-range performance.

Both 3 and 10-cm Mariners Pathfinder® Radars feature transmitters with very high "average-power" outputs. This ensures maximum long-range target detection.

With its longer wavelength and high 60kW peak power, the 10-cm unit is unbeatable at "punching through" adverse weather to pull in distant targets.

Interswitchable 3 and 10-cm systems for optimum radar versatility.

Raytheon has provided over 3000 vessels with dual 3 and 10-cm radar interswitch systems. Connecting the antennas, transmitters and the Mariners Pathfinder® displays, Raytheon's Interswitch Unit lets the operator select any desired combination of 3 and 10-cm presentations.

Typically, one display might be used with 3-cm and the other with 10-cm transmission. However, weather or navigational requirements might dictate that both displays be used on either 10 or 3-cm... one on long range, one on short range... one relative motion, the other true motion.

Whatever the situation demands, Raytheon's Interswitch System lets you select the best radar combination for the job.

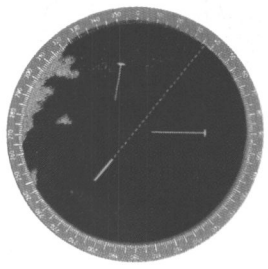
Choice of two relative/true-motion units... with simple collision assessment, or computerized collision warning and avoidance.

A true motion display, in which fixed objects remain stationary while your ship and other vessels move across the scope on their true courses, improves navigation and collision avoidance capabilities. Raytheon gives you a choice of two units, each with an Electronic Bearing Line (EBL) that may be positioned anywhere on the display.

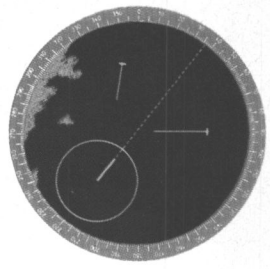
The low-cost TM/AC unit provides a microprocessed true-motion presentation for both the 12 and 16-inch relative motion displays. For collision assessment it displays true and relative courses for up to eight selected targets.

Raytheon's new computerized Anti-Collision Unit (ACU) is one of the most advanced relative and true-motion displays available. It is designed to meet U.S. Coast Guard proposals and MARAD requirements for merchants ships.

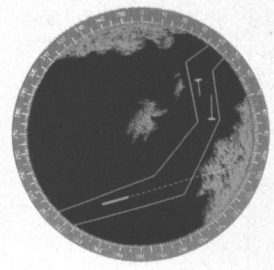
A compact unit that attaches directly to a Mariners Pathfinder® 16-inch display, the ACU will automatically track as many as 20 targets with computer-generated collision warning and digital-readout collision avoidance data. The Raytheon ACU also gives you trial maneuver information, collision avoidance guard rings around the ship, navigational fairways, CPA (Closest Point of Approach) and TCPA (Time to CPA) for tracked targets, and much more.



ACU vectors show true course and speed of tracked targets.



ACU alarm sounds when approaching target penetrates guard ring.



ACU electronic bearing lines set up navigation fairways.

Unmatched warranty and worldwide service back-up.

All Raytheon products have a two-year limited parts warranty plus one-year free on-board service within 50 miles of any of our U.S. dealers and worldwide service network in major ports everywhere.



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Cantieri Navali Riuniti Gets $300-Million Ecuador Contract

Cantieri Navali Riuniti (CNR) has signed a contract to supply Ecuador six Corvette warships valued at 250 billion lire ($300 million). They will carry American-licensed helicopters.

The anti-ship and anti-air vessels carry Agusta Bell AB-212 helicopters built under American license.

The Genoa shipyard has also delivered the first of six helicopter frigates ordered by the Venezuelan Navy, the 2,500-ton Mariscale Scure. This Lupo-class vessel carries two Agusta Bell helicopters and the American Sea Sparrow anti-aircraft missile.

Value of the Venezuelan contract is estimated by the Italian company at nearly $1 billion.

SNAME New England Section Hears Two Technical Papers

The New England Section of The Society of Naval Architects and Marine Engineers met in Newton, Mass. on September 29, to hear the presentation of two excellent technical papers.



Left to right, **Lyssimachos Vassilopoulos,** Section chairman, is shown with authors **W.H. Hanot** and **J.G. Arrison.**

Following cocktails and dinner, the technical meeting was opened by the chairman of the Section, **Lyssimachos Vassilopoulos,** who introduced the first author, **W.H. Hanot,** a Massachusetts Institute of Technology student in the Department of Ocean Engineering. His paper was entitled "Development of an Electro-Acoustic Transducer for Sonobuoy Applications." The paper describes the development of a piezoelectric-based transducer for use as a directionally sensitive element in a sonobuoy. It is destined to replace the presently used electrodynamic transducer. The new device features high sensitivity, directionality, wide bandwidth, and simple rigid construction.

The second paper entitled "Hydrodynamic Interaction Between the Rudder and Hull of a Sailing Vessel" was presented by the author, **J.G. Arrison,** a recent student at M.I.T. The paper describes the results of water tunnel experiments which investigated the forces on a rudder as a function of variations in hull-rudder combinations, and fixed fairings. Ways to increase boat turning moment with less drag and increased stability were suggested. These included antiventilation plates and movable skegs.

Copies of past and present Section papers may be purchased for $4, including postage, from the editor by writing Lt. **Donald C. Gerber,** Department of Applied Science and Engineering, U.S. Coast Guard Academy, New London, Conn. 06320.

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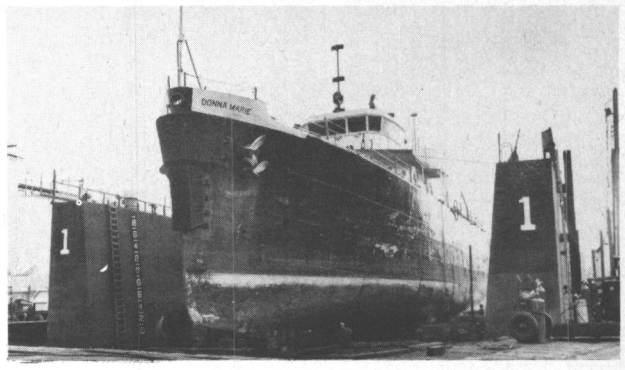

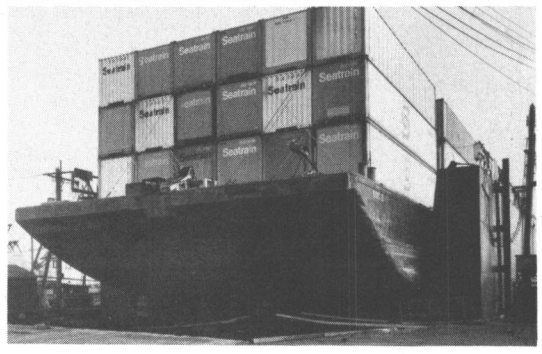



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'U.S. Oil Imports, Policies And Tanker Shipping'

U.S. domestic crude oil and natural gas liquids production peaked in 1970, and after remaining nearly constant for the following two years, fell steadily until 1976, with output from Alaska providing an upsurge in 1977. However, even in 1977, production estimated at 466 million tons was up by only 5 million tons from the previous year, and down by some 60 million tons from the years of peak production. U.S. oil consumption has not declined, or even remained static during the 1970s. In consequence, U.S. oil imports have grown from some 200 million tons in 1971 to some 430 million tons in 1977. The growth of U.S. seaborne oil imports has been a major generator of world tanker demand during the past seven years.

"U.S. Oil Imports, Policies and Tanker Shipping," Study Number 66 in a series produced by the Research Division of H.P. Drewry (Shipping Consultants) Limited, provides a detailed analysis of developments in U.S. oil imports since 1970 and the related development of tanker demand to serve the U.S. trades. The analysis shows that there has been a distinct difference in the development of crude oil imports/crude oil tanker demand, and the trend of refined products trades/products tanker demand. Thus, between 1970 and 1977, U.S. seaborne crude oil imports increased by nearly fivefold to some 310 million tons, while conversely U.S. domestic seaborne crude oil movements fell from 40 million tons to 17 million tons (reflecting the shortage of domestic crude availability and the decline in movements from the U.S. Gulf to the Eastern Seaboard). During this same period, both the seaborne imports of refined products, and their domestic coastwise trade was constant overall, varying from year to year between 90 and 140 and 54 and 63 million tons, respectively.

In terms of tanker demand, the above figures indicate that the tanker requirement to transport U.S. crude oil imports increased from some 4 million deadweight tons in 1970 to 46 million dwt in 1977, with domestic crude oil tanker demand of another 1-2 million dwt and with total products carrier demand in the range of 8 to 11 million dwt throughout. The growth in tanker demand generated by crude imports arises not only from the larger volumes mentioned above, but also from the increased imports of medium/long-haul crude oils from North and West Africa and the Middle East that has occurred as crude availability in the Caribbean, the traditional source of U.S. imports, has peaked. In the global context, the total tanker demand generated by U.S. trades appears to have risen from some 11 percent of total world demand in 1972 to about 27.5 percent in 1977, with a remarkably large increase in relative share between 1976 (22 percent) and 1977 — indeed, it appears that tanker demand resulting from non-U.S. trades probably fell in 1977 (reflecting low demand growth for oil and the advent of new crude supplies, such as the North Sea, located close to major centers of demand).

From these comments, it is evident that future developments in U.S. oil import requirements could be critical to the development of the worldwide tanker industry. Between now and 1985, U.S. crude oil imports (ex. domestic trades and movements from Alaska) are seen as reaching a peak of some 350 million tons/year in the early 1980s and declining thereafter to some 280 million tons by 1985, as new supplies of crude become available from the "lower 48." On the other hand, the imports of refined products by the U.S. are forecast to increase rapidly after 1980 (from 240 million tons in 1980 to 420 million tons in 1985), reflecting the development of a shortage of refinery capacity in the U.S. Overall, the U.S. is seen as requiring about one-third of all the volume of oil and products moved by sea during the period 1980-85 (up

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from some 28 percent in 1977). In terms of tanker demand, the fleet needed to transport U.S. crude trades is projected to be some 52 million dwt in 1980, and some 38 million dwt in 1985. The products carrier demand is seen as doubling from 9 million dwt in 1977 to 18 million dwt in 1980, and then increasing to 40 million dwt by 1985. It is evident that this change in the structure of U.S. generated tanker demand could have a profound effect on the tanker market worldwide.

It has frequently been suggested that U.S.-flag tankers should be guaranteed a share of the tanker demand generated by U.S. oil imports. An examination of the supply of U.S.-flag tankers indicates that this fleet was some 11.5 million dwt at the end of 1977, and is likely to peak at some 15 million dwt in 1980 but remain above 14 million dwt up to 1985. In terms of the tanker demand arising as a result of forecast U.S. oil imports levels, this fleet represents between 18 percent and 21 percent of the total (but these figures do not show separately U.S. coastal trades already reserved to U.S.-flag tonnage). However, if tankers owned or held on long-term charter by U.S. companies operating under non-U.S. flags are taken into account, it is found that only in 1985 is there a deficit of U.S.-controlled tonnage in relation to U.S.-generated tanker demand. Thus, given the introduction of some form of U.S. oil cargo preference, it seems certain that there will be immediate pressure for the re-registration of non-U.S.-flag U.S.-owned tankers under U.S. flag.

"U.S. Oil Imports, Policies and Tanker Shipping," No. 66 in a series of reports on various aspects of shipping prepared by the Research Division of HPD Shipping Publications, 34 Brook Street, Mayfair, London W1Y 2LL, England, is available at a single copy rate of U.S. $85 (all overseas orders) or £35 (U.K. only), or on a subscription basis U.S. $325 (all overseas orders) or £135 (U.K. only) for the series 61-70.

SCNO Barge Lines Names Stan Kays To Southern Fleeting Facilities

The relocation of **Stan Kays,** marine superintendent, SCNO Barge Lines, Inc., from the Hartford, Ill., fleet facilities to the Luling, La., fleet and repair facilities was recently announced by **Frank R. Markland,** president.

Mr. Kays's career in the river transportation business began in 1937, and for the past 11 years he has served as marine superintendent for SCNO Barge Lines, Inc.

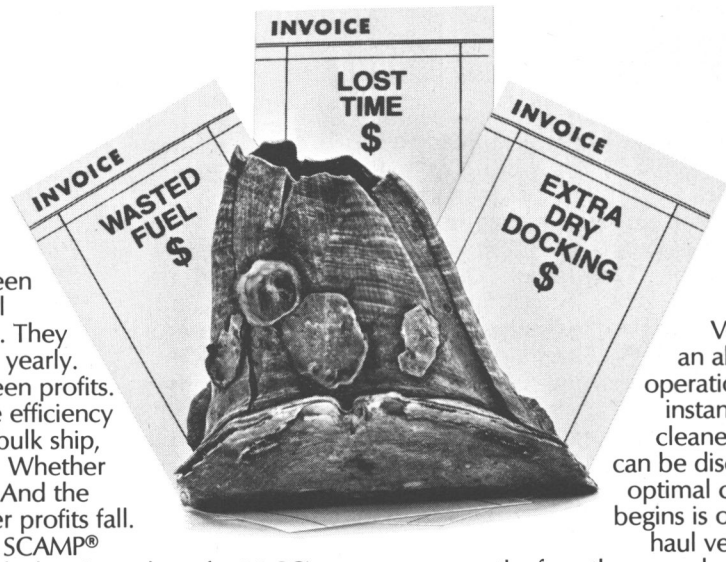
In his new position at Luling, **Mr. Kays** will be responsible for the repair and fleeting facilities in the Southern Division of SCNO.

Three R Trusts Requests Title XI To Construct Tug/Supply Vessel

Three R Trusts, Post Office Box 1168, Galveston, Texas, has applied for a Title XI guarantee to aid in financing the construction of one twin-screw tug/supply vessel. The applicant, owner of three vessels, consists of trusts established by **Robert L. Moody,** 20 South Shore, National Bank Building, Galveston, for the benefit of his children.

The applicant indicates the vessel will carry provisions and construction material to offshore drilling sites, and may operate in foreign and domestic commerce. It will be 185 feet in length, with a beam of 38 feet, a depth of 14 feet, and a loaded draft of about 11 feet. Having a gross tonnage of less than 300, it will be powered by two marine diesel engines rated at 1,250 horsepower each.

The estimated actual cost of the vessel is $2,437,500, of which 87½ percent, or approximately $2,100,000 is eligible for Title XI financing. Zigler Shipyards, Jennings, La., has been selected to build the vessel.



Barnacles, sea lettuce, green algae, tube worms. They all have one thing in common. They chew up millions of dollars yearly. Dollars that should have been profits.

They're slow death to the efficiency of any ship. Whether it's a bulk ship, tank ship or dry cargo ship. Whether it's a coastal ship or VLCC. And the bigger they come, the faster profits fall.

With regularly scheduled SCAMP® underwater hull cleanings, fuel savings alone for VLCC's operating between 12 and 14 knots can be anywhere from $210,000 to $340,000 over a 2½ year dry dock cycle. Depending on water temperature, displacement, weather, currents and other variables. Interesting?

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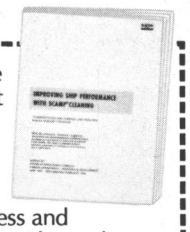

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(continued from page 31)

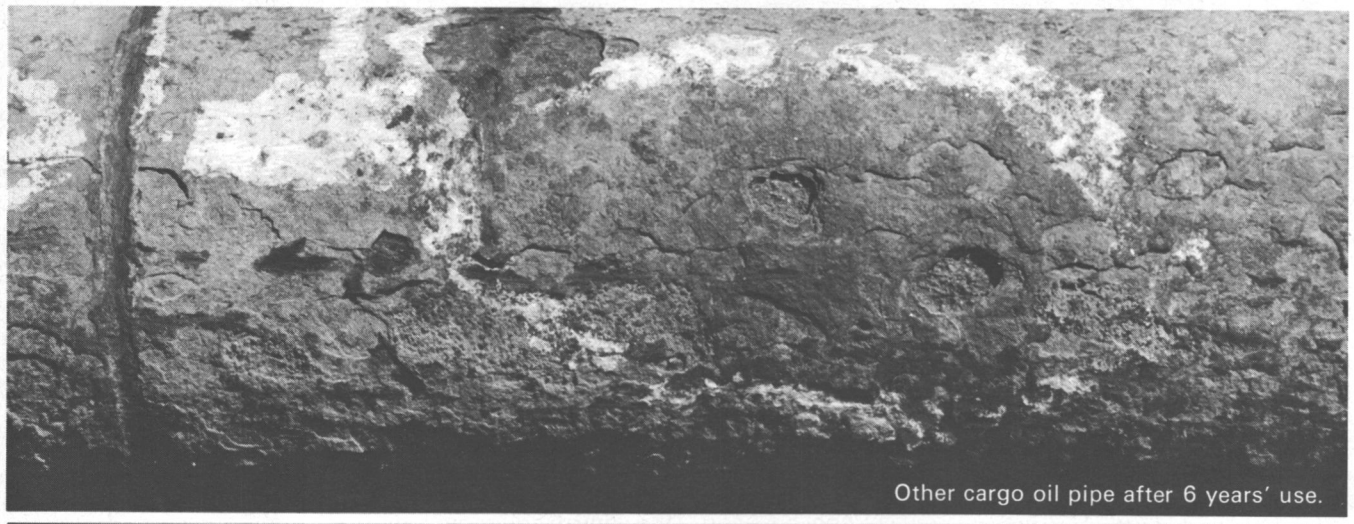
country, and a reduced resource base. The gamble in terms of national security could be hazardous. The best minds, in and out of government, must search for prompt and appropriate antidotes if a U.S. shipbuilding industrial base to serve essential national interests is to be upheld. This effort however, will require far more intellectual and attitudinal consistency than has been the case for many years.

At this moment, the House Committee on Merchant Marine and Fisheries recommends the establishment of a Navy-Maritime Advisory Board. While other countries have quickly taken steps to preserve an essential core of shipyard facilities, the White House has opted for another interagency maritime study. The Defense Department is refining mobilization requirements to suit ill-defined political goals. The Navy Department, in effect, says that commercial shipbuilding must sustain the shipbuilding base; the Maritime Administration, on the other hand, says the base must be maintained by naval shipbuilding. Yet, programs for both have dropped sharply. Meanwhile, the National Security Council asserts little or no interest in the formulation of long-range shipbuilding and shipyard policy.

So the record goes! Obviously, logical and effective change must result from something more positive than adoption of another noble-sounding resolution at this fine Convention. To be sure, the maritime community, as represented by The Propeller Club of the United States, can and must play a significant role in shaping the maritime destiny of this great nation. But, labor and management cannot expect that government alone will solve today's serious problems. Policy leadership must of course come from the highest office in the land and the Congress, but the ingenuity for implementation must come from this audience and our counterparts throughout the nation.

In this spirit, my own organization is, at this moment, engaged in answering this important question: what must the industry do, on its own initiative, to improve the present unpromising outlook and to ensure that an appropriate long-range national shipbuilding policy is promptly adopted? In this task, we need your help and would welcome your suggestions.

The same age! So what's the difference?



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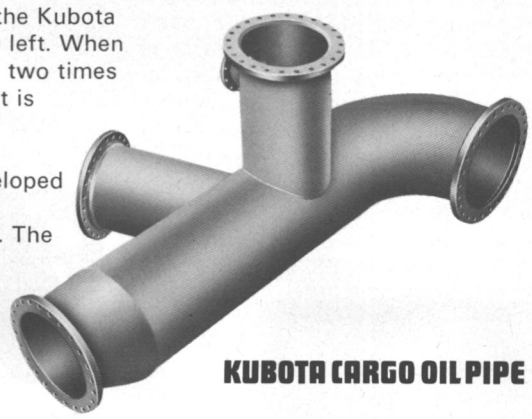

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Robert Griffin Joins Delta Steamship Lines

Robert E. Griffin has joined Delta Steamship Lines, Inc. as senior vice president-Finance and Planning, according to an announcement by Capt. **J.W. Clark,** president of the American-flag ocean carrier.

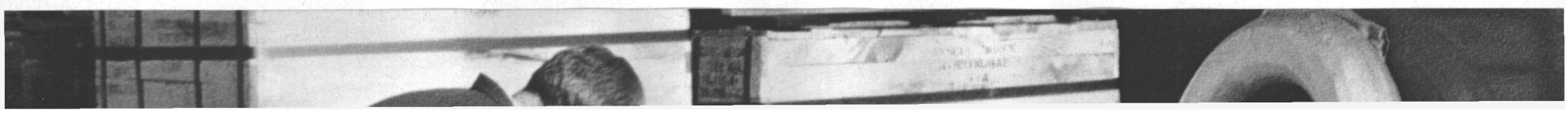


Robert E. Griffin

Mr. **Griffin** joins Delta with extensive experience in the financial and planning sectors of the real estate and airline industries. His background also includes international marketing for a major airline.

A native of Tulsa, Okla., Mr. **Griffin** received an A.B. degree from the University of Southern California in 1956, after beginning studies at Tulsa University. He received an MBA degree from the Harvard Business School in 1963.

New Orleans, La.-based Delta Steamship Lines, Inc. are owners and operators of a fleet of modern American-flag vessels serving Latin America, the Caribbean and West Africa from United States ports.



from some 28 percent in 1977). In terms of tanker demand, the fleet needed to transport U.S. crude trades is projected to be some 52 million dwt in 1980, and some 38 million dwt in 1985. The products carrier demand is seen as doubling from 9 million dwt in 1977 to 18 million dwt in 1980, and then increasing to 40 million dwt by 1985. It is evident that this change in the structure of U.S. generated tanker demand could have a profound effect on the tanker market worldwide.

It has frequently been suggested that U.S.-flag tankers should be guaranteed a share of the tanker demand generated by U.S. oil imports. An examination of the supply of U.S.-flag tankers indicates that this fleet was some 11.5 million dwt at the end of 1977, and is likely to peak at some 15 million dwt in 1980 but remain above 14 million dwt up to 1985. In terms of the tanker demand arising as a result of forecast U.S. oil imports levels, this fleet represents between 18 percent and 21 percent of the total (but these figures do not show separately U.S. coastal trades already reserved to U.S.-flag tonnage). However, if tankers owned or held on long-term charter by U.S. companies operating under non-U.S. flags are taken into account, it is found that only in 1985 is there a deficit of U.S.-controlled tonnage in relation to U.S.-generated tanker demand. Thus, given the introduction of some form of U.S. oil cargo preference, it seems certain that there will be immediate pressure for the re-registration of non-U.S.-flag U.S.-owned tankers under U.S. flag.

"U.S. Oil Imports, Policies and Tanker Shipping," No. 66 in a series of reports on various aspects of shipping prepared by the Research Division of HPD Shipping Publications, 34 Brook Street, Mayfair, London W1Y 2LL, England, is available at a single copy rate of U.S. $85 (all overseas orders) or £35 (U.K. only), or on a subscription basis U.S. $325 (all overseas orders) or £135 (U.K. only) for the series 61-70.

SCNO Barge Lines Names Stan Kays To Southern Fleeting Facilities

The relocation of **Stan Kays,** marine superintendent, SCNO Barge Lines, Inc., from the Hartford, Ill., fleet facilities to the Luling, La., fleet and repair facilities was recently announced by **Frank R. Markland,** president.

Mr. Kays's career in the river transportation business began in 1937, and for the past 11 years he has served as marine superintendent for SCNO Barge Lines, Inc.

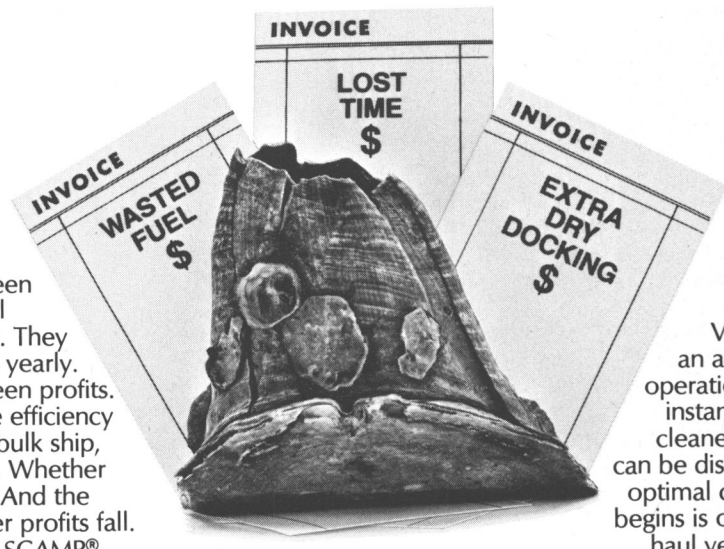
In his new position at Luling, Mr. **Kays** will be responsible for the repair and fleeting facilities in the Southern Division of SCNO.

Three R Trusts Requests Title XI To Construct Tug/Supply Vessel

Three R Trusts, Post Office Box 1168, Galveston, Texas, has applied for a Title XI guarantee to aid in financing the construction of one twin-screw tug/supply vessel. The applicant, owner of three vessels, consists of trusts established by **Robert L. Moody,** 20 South Shore, National Bank Building, Galveston, for the benefit of his children.

The applicant indicates the vessel will carry provisions and construction material to offshore drilling sites, and may operate in foreign and domestic commerce. It will be 185 feet in length, with a beam of 38 feet, a depth of 14 feet, and a loaded draft of about 11 feet. Having a gross tonnage of less than 300, it will be powered by two marine diesel engines rated at 1,250 horsepower each.

The estimated actual cost of the vessel is $2,437,500, of which 87½ percent, or approximately $2,100,000 is eligible for Title XI financing. Zigler Shipyards, Jennings, La., has been selected to build the vessel.



Barnacles, sea lettuce, green algae, tube worms. They all have one thing in common. They chew up millions of dollars yearly. Dollars that should have been profits.

They're slow death to the efficiency of any ship. Whether it's a bulk ship, tank ship or dry cargo ship. Whether it's a coastal ship or VLCC. And the bigger they come, the faster profits fall.

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GENOA (ITALY)
Guanito Barbagelata
Telex: 27087 GUANITO, Genoa, Italy

ARUBA & CURACAO (Caribbean)
Peters Divers Co. Ltd.
Cable: PDC Curacao PDC Aruba

SINGAPORE
Underwater Maintenance Pte. Ltd.
Telex: RS 21514, NEWMOON Singapore

KIIRE (JAPAN)
Tokyo Marine Engineering Corporation
Telex: 02322439 MACLEAN, Tokyo, Japan

USA: CALIFORNIA, NORFOLK, HONOLULU
RMP Marine Services, Inc.
Long Beach, California 90802
TWX: 9103416418 RMP MARINE LGB

ROTTERDAM (NETHERLANDS)
Underwater Cleaning & Diving Rotterdam BV
Telex: 23339—Rotterdam, Netherlands

TENERIFE (CANARY ISLANDS)
Reparaciones y Trabajos Submarinos, S.L.
Telex: 92037, Santa Cruz de Tenerife

TOKYO (JAPAN)
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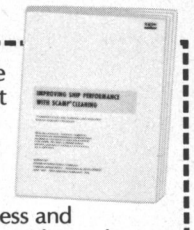

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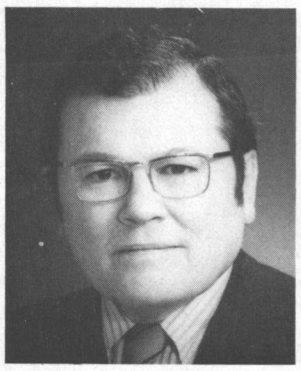
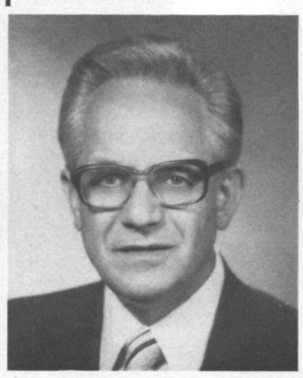
American Bureau Of Shipping Announces Elections Of Officers And Appointment



Lawrence J. Bates



Robert F. Vollack



Thomas Zuppello

The board of managers of the American Bureau of Shipping (ABS) elected three officers at its Semi-annual Meeting on September 19. Announcement of the elections was made by **Robert T. Young,** ABS chairman. The officers are **Lawrence J. Bates** to senior vice president, **Robert F. Vollack** to vice president, and **Thomas Zuppello** to treasurer.

Mr. **Young** also announced the appointment of **John F. Borum** to assistant vice president.

Mr. **Bates** began his career with ABS in 1951 as a surveyor on the New York Technical Staff where he served for 11 years. He transferred to the London office as senior surveyor on the Technical Staff in 1962, and was named principal surveyor of the Technical Staff in 1964. He was appointed principal surveyor for Western Europe in 1972. Three years later, he was elected a vice president. Mr. **Bates** graduated from the University of Chicago with a Bachelor of Science degree in mathematics and physics, and from the University of Michigan with a Bachelor of Science degree in naval architecture.

Mr. **Vollack** joined ABS in 1951 as a surveyor on the New York Technical Staff. Ten years later, he transferred to the Cleveland, Ohio, office Technical Staff and served as a surveyor and senior surveyor there before becoming assistant principal surveyor in 1968. He was appointed principal surveyor for the Great Lakes in 1970. Mr. **Vollack** transferred to London in 1972 as assistant principal surveyor for Western Europe, and in 1975 was appointed principal surveyor for Western Europe, the post he held at his election to vice president. Mr. **Vollack** graduated from the U.S. Merchant Marine Academy, Kings Point, N.Y., with a Bachelor of Science degree in marine engineering.

Mr. **Zuppello** joined ABS in 1952 as an accountant in New York Headquarters, and was named chief accountant in 1959. He was appointed assistant treasurer in 1973. Mr. **Zuppello** graduated from City College, New York City, with a Bachelor of Business Administration degree in accounting.

At the time of his appointment, Mr. **Borum** was principal surveyor for the Mediterranean Area, stationed in Genoa, Italy. He began his career with ABS in 1958 as a surveyor in Newport News, Va. Later that year, he transferred to Japan. Over a 15-year period in Japan, he served as surveyor and principal surveyor in Yokohama, and as senior surveyor and principal surveyor in Kure. Mr. **Borum** was appointed principal surveyor for the Mediterranean Area in 1973. He graduated from the U.S. Merchant Marine Academy, Kings Point, with a Bachelor of Science degree in marine engineering.

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.

Matty Morgenstern Named President Of Zim

Matty Morgenstern has been named president of Zim American-Israeli Shipping Co. Inc., and Zim Container Service-North America, the companies have announced.

Mr. **Morgenstern** succeeds **Avner Manor,** who is returning to the shipping organization's head office in Haifa, where he holds the title of corporate executive vice president. Mr. **Morgenstern** joined Zim in 1950, and in 1973 became president of Zim Container Service in Haifa. He is returning to Zim from a two-year leave of absence, during which he organized an international bulk carrier operation.

Comfort-Mate Introduces New Deck Furniture

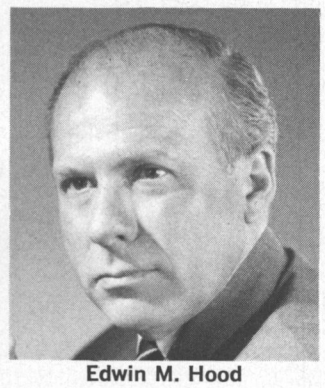
A new maintenance-free deck chair has just been released by Comfort-Mate. This new deck chair was introduced recently onboard the Sun Viking in Miami, Fla. Its new features are spun ends, extra heavy-gauge anodized aluminum tubing and all new colors.

Also introduced was a new deck sitting chair, featuring a new high back design. These new items add to the growing line of custom deck furniture and equipment.

Additional information may be obtained from **James Reiter,** Comfort-Mate, Inc., P.O. Box 43-1572, Miami, Fla. 33143.

Needed -- A Long-Range National Shipbuilding Policy

Edwin M. Hood*



Edwin M. Hood

At close range, against the background of recent events, one could reasonably conclude that the shipbuilding industry of the United States is being sacrificed on the altar of illogical expediency. In the climate of uncertainty and confusion created by official inertia over the recent past, one could quickly conclude that shipbuilding is not a favorite topic of discussion within the **Carter** Administration. Nor was shipbuilding given any particular impetus by the **Ford** Administration.

This bewildering phenomenon has taken place at a time (1) when there is no disagreement, in or out of government, on the essentiality of shipbuilding facilities for national security, (2) when there is increasing evidence that the capabilities of the industry are insufficient for a short war or for any extended conflict, and (3) when there is no disputing the fact that a substantial downturn in shipyard employment over the next four years has already commenced. Some 45,000 to 50,000 skilled shipyard workers and up to another 150,000 employees in supporting activities, and their families, will be affected. Modernized production facilities will be idled.

The cumulative impact of these developments can only be characterized as self-degradation of the highest order with serious prospective dangers to the public good. To argue that shipyards in distant lands with differing geopolitical objectives, differing economic conditions, differing work ethics, differing regulatory and statutory standards, and differing national attitudes can compose a satisfactory substitute for a reliable mobilization industrial base for shipbuilding and ship repairing under U.S. sovereignty is to engage in self-deception of the highest order. The end result could be costly and catastrophic.

Yet, in the present state of affairs, the thrust of Federal policy-making and decision-making as affecting shipyard activities in general, and shipbuilding in particular, is imprecise, incomprehensible, uncoordinated, counter-productive, and clearly ineffective. The intent of the Congress, as declared precisely in various statutes and frequently reaffirmed, has been, and is now being, circumvented, consciously or otherwise. The essential role of shipbuilding and shipyard activities somehow escapes attention, or is knowingly dismissed, by policy-makers and decision-makers at top levels of the Federal Government. The historically proven affinity with national security is ignored, purposely or otherwise.

To be sure, shipbuilding policy cannot be rationally or realistically formulated in a vacuum without cognizance of other equally important national policy considerations. The shipbuilding problem clearly cannot be solved in isolation from all other national problems. In this sense, a major failing of government in these complex times has been, and still is, the absence of creative coordination in the solution of interacting public issues. The full sway of national ingenuity and national resources is only rarely wielded comprehensively—and effectively—for the public good.

Maintenance of a shipbuilding industrial base is not considered in the formulation of import policy pertaining to liquefied natural gas (LNG). A diminishing naval shipbuilding program, reflecting an illogical downgrading of naval supremacy and maritime superiority, does not assure effective utilization of available production facilities, nor contribute to operational or workforce stability in our shipyards. Moreover, U.S. constructed vessels are illogically excluded from foreign military sales by arbitrary decisions.

Though the imbalance of trade and the imbalance of international payments persists — indeed, they seem to deteriorate steadily—Federal authorities illogically condone the actions of U.S. companies in building ships in foreign shipyards, operating them with alien crews, registering them under foreign flags, and then permitting them to participate in U.S. foreign commerce with tax advantages not available to U.S.-flag shipping companies. This momentum, often officially inspired, is not slowing.

Over the past 25 years, Ameri-

*Edwin M. Hood, board chairman and president, Shipbuilders Council of America, made the remarks on this page before the 1978 American Merchant Marine Conference, United States Propeller Club Convention, Honolulu, Hawaii, October 11, 1978.

can companies, or their affiliates, have had nearly 2,000 merchant ships built in foreign shipyards. In the same period of time, American shipyards have constructed only 600 merchant vessels — less than one-third of the number built abroad. Last year, American companies ordered 13 vessels from U.S. shipyards but almost twice that number — 25 total — from Japanese shipyards. This unbalanced trend hardly contributes to a strengthening of the national security shipbuilding industrial base.

Currently, at the Multilateral Trade Negotiations in Geneva, U.S. trade negotiators are believed to be responding favorably to moves by several European trading nations which seek removal of certain U.S. non-tariff measures, including the Jones Act. The worldwide shipping and shipbuilding depression no doubt accounts for these initiatives from abroad to disable the domestic effectiveness and potentials of the Jones Act to the detriment of U.S. national interests and employment. The motivation, of course, is to develop ship construction opportunities for shipbuilders in other lands and to develop job opportunities for foreign shipyard workers.

But, the development of shipbuilding and job opportunities here does not receive comparable emphasis. There is virtually no official acknowledgement of the coming unemployment in domestic shipyards. There is virtually no official acknowledgement that many shipyards abroad are today offering prices which have little or no relationship to actual costs. There is virtually no official acknowledgement that this contradiction of basic economic principles is taking place with either overt or implicit blessing by involved governments. With public funds, shipbuilders' losses are indemnified. The declared rationale is to uphold essential national activities and to minimize the social costs of unemployment.

By reason of such below-cost pricing and other disparate economic factors, U.S. shipbuilders are foreclosed from world markets. With products other than ships, below-cost marketing would be regarded as "dumping" subject to governmental scrutiny and reaction. No such recourse is available to U.S. shipbuilders, who as a consequence, are losing desirable contracts to their foreign counterparts.

But, at no level of U.S. government does there appear to be sufficient appreciation of the realities of today's world shipbuilding environment. Shipyards in one country are not competing with shipyards in another country. Governments are competing with governments to capture ship construction opportunities — wherever and at whatever price — to serve what is considered to be their own self-interests. The seeming illogic of prevailing U.S. policy is to abandon an essential industrial base.

In plain truth, there is not now, and there has not been for some while, the degree of cohesion of purpose and coordination among and within agencies of the Federal Government which is basic to enunciation, enhancement and effectiveness of a shipbuilding industrial strategy in support of the national interest. Only last month, Adm. **Isaac C. Kidd,** USN, Commander-in-Chief of the U.S. Atlantic Fleet and Supreme Allied Commander, Atlantic, warned that the United States has about one-half of the needed naval capacity to guarantee safety to the huge merchant fleets which would be required to supply and reinforce NATO armies in the event of a major conflict. Earlier this year, the Navy Department lamented the absence of a national shipbuilding policy, but that same lament was voiced during the years of previous administrations under both major political parties, but to no avail.

It seems clear that without a coordinated national policy on naval and commercial shipbuilding, the downward trend will continue and inevitably lead to an irretrievable loss of capability in this

(continued on page 32)

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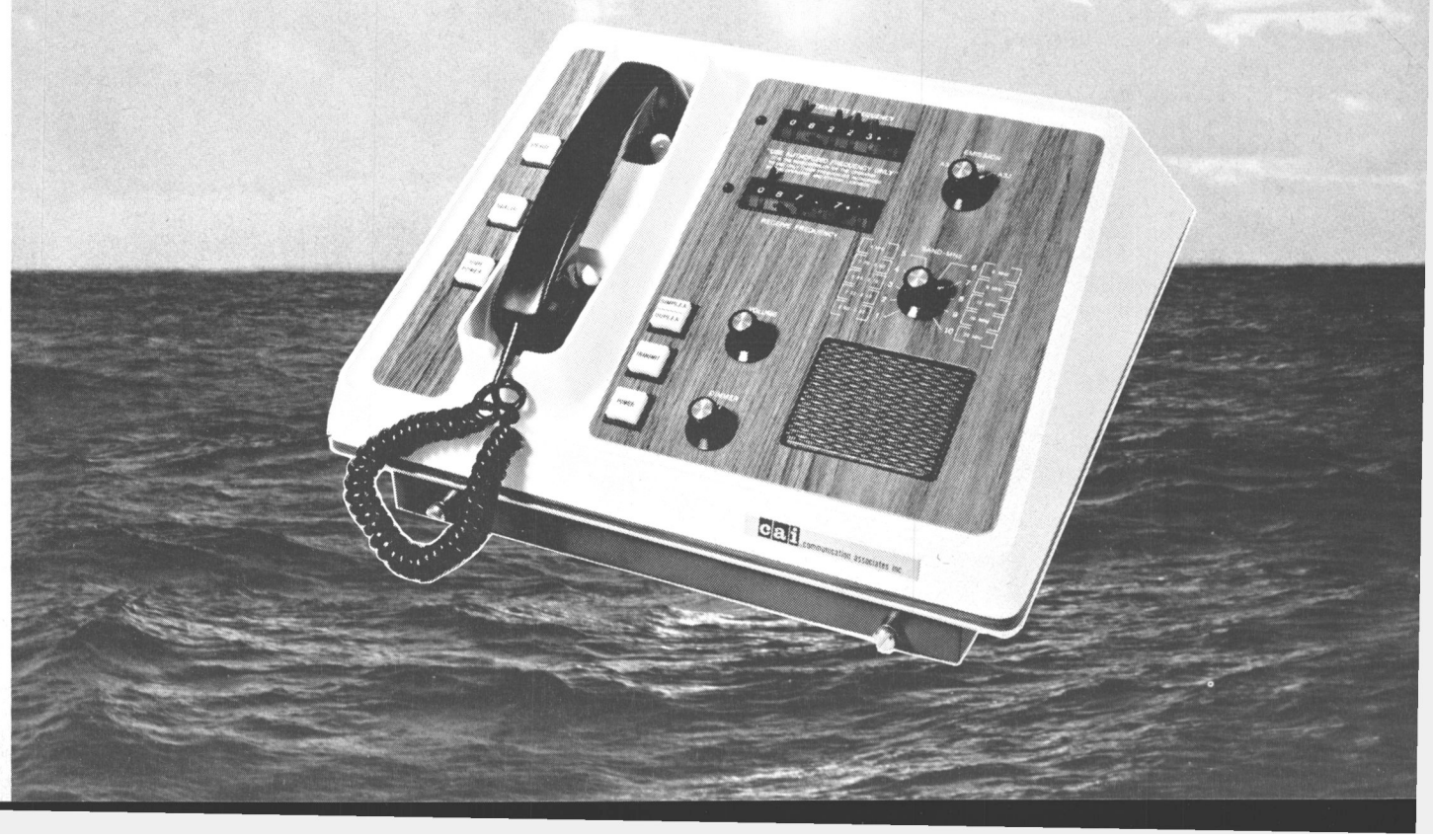

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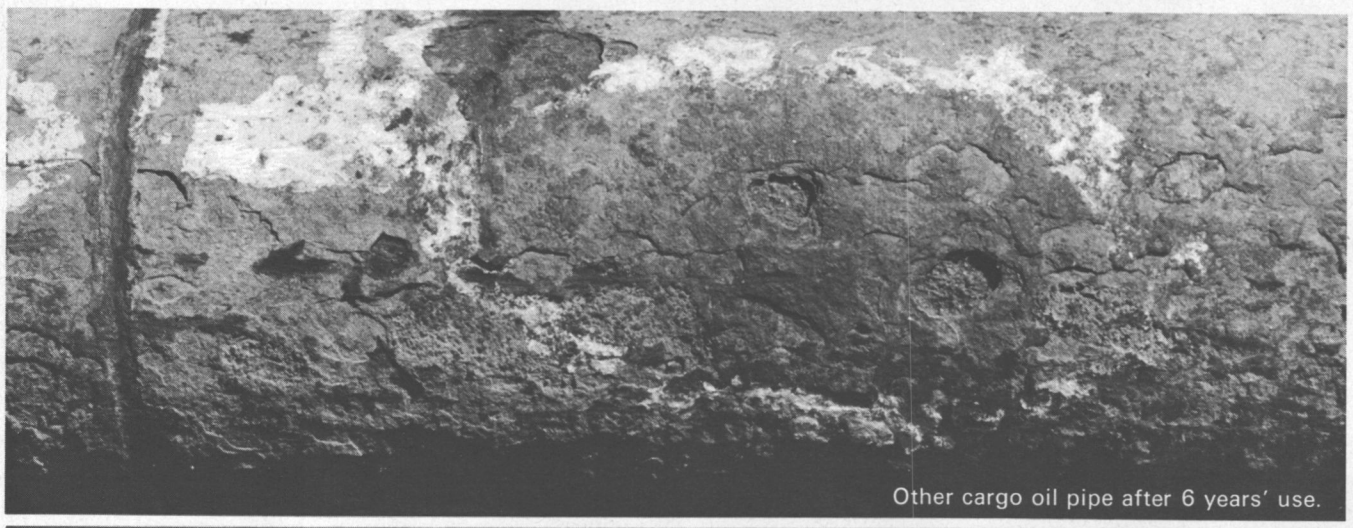
country, and a reduced resource base. The gamble in terms of national security could be hazardous. The best minds, in and out of government, must search for prompt and appropriate antidotes if a U.S. shipbuilding industrial base to serve essential national interests is to be upheld. This effort however, will require far more intellectual and attitudinal consistency than has been the case for many years.

At this moment, the House Committee on Merchant Marine and Fisheries recommends the establishment of a Navy-Maritime Advisory Board. While other countries have quickly taken steps to preserve an essential core of shipyard facilities, the White House has opted for another interagency maritime study. The Defense Department is refining mobilization requirements to suit ill-defined political goals. The Navy Department, in effect, says that commercial shipbuilding must sustain the shipbuilding base; the Maritime Administration, on the other hand, says the base must be maintained by naval shipbuilding. Yet, programs for both have dropped sharply. Meanwhile, the National Security Council asserts little or no interest in the formulation of long-range shipbuilding and shipyard policy.

So the record goes! Obviously, logical and effective change must result from something more positive than adoption of another noble-sounding resolution at this fine Convention. To be sure, the maritime community, as represented by The Propeller Club of the United States, can and must play a significant role in shaping the maritime destiny of this great nation. But, labor and management cannot expect that government alone will solve today's serious problems. Policy leadership must of course come from the highest office in the land and the Congress, but the ingenuity for implementation must come from this audience and our counterparts throughout the nation.

In this spirit, my own organization is, at this moment, engaged in answering this important question: what must the industry do, on its own initiative, to improve the present unpromising outlook and to ensure that an appropriate long-range national shipbuilding policy is promptly adopted? In this task, we need your help and would welcome your suggestions.

The same age! So what's the difference?



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Kubota cargo oil pipe after 6 years' use.

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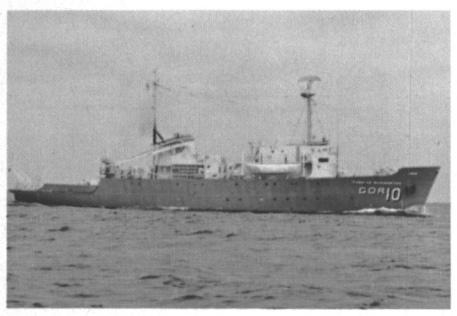
The quality is steady as she goes







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

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









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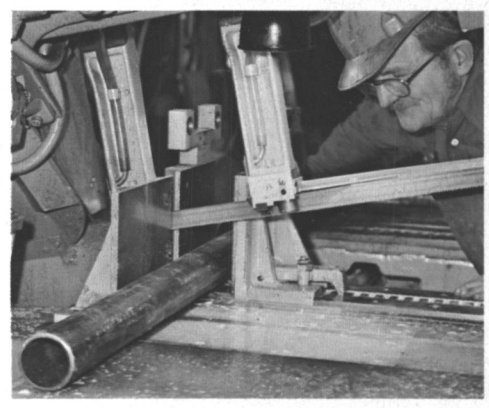
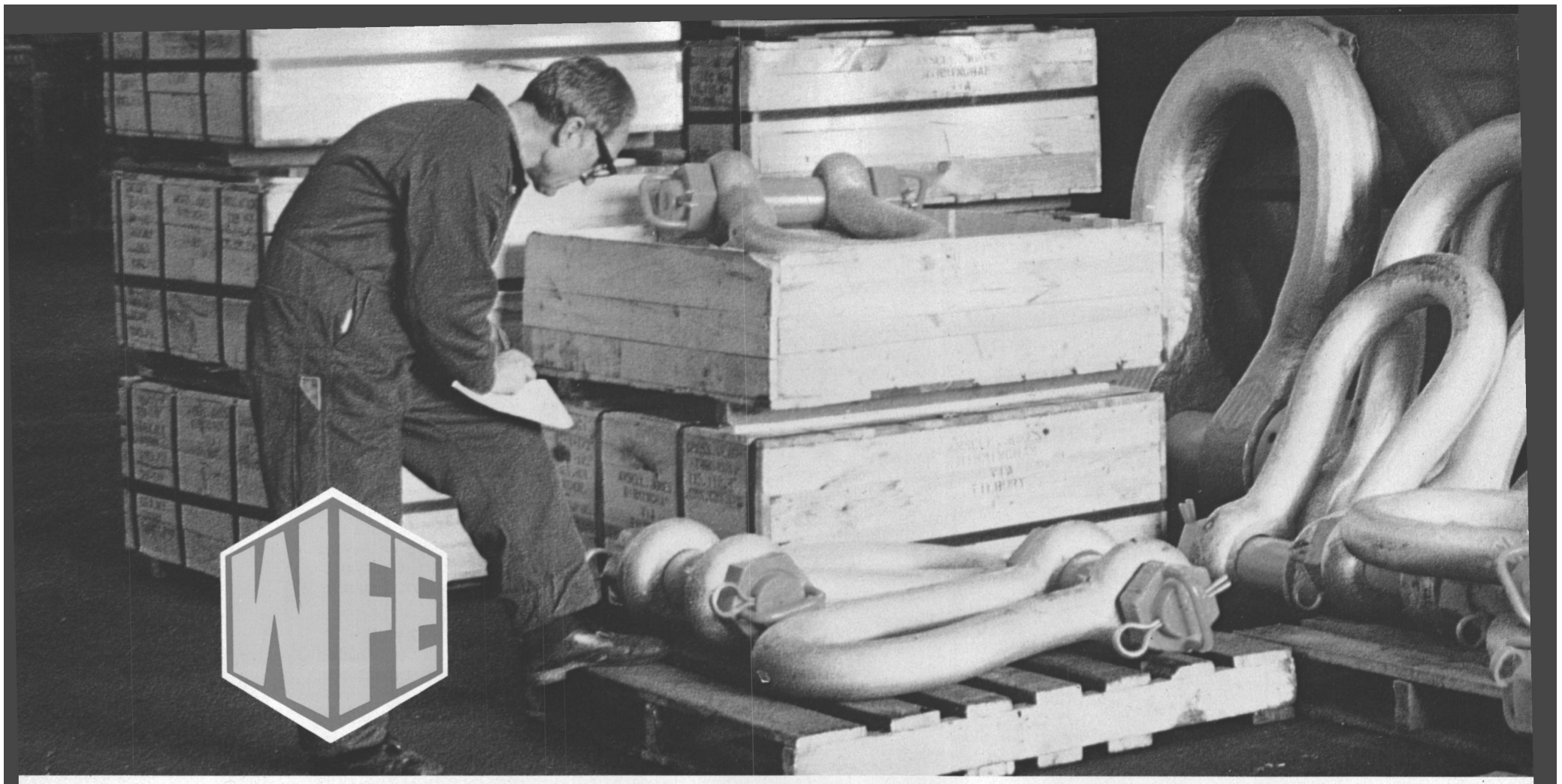
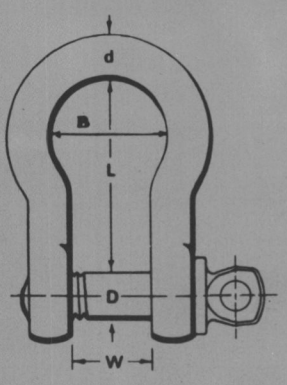






FORGED STEEL

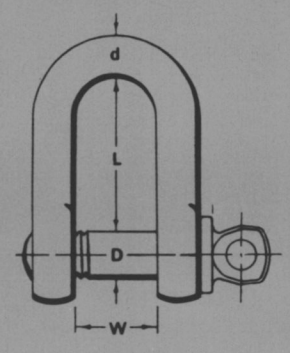
"HIGH LOAD" SHACKLES



SCREW PIN ANCHOR

Safe Working Load U.S. tons	Body Dia. d	Pin Dia. D	Inside Length L (Min.)	Inside Width at Pin W	Inside Width at Bow B	Outside of eye Dia. (Max.)	Approx. Wt. per 100 in lbs.	Ordering Code Galvanised
1/3	3/16	1/4	3/8	3/8	19/32	9/16	5	UBG 1½
½	1/4	5/16	1⅛	15/32	25/32	11/16	12	UBG 2
¾	5/16	3/8	1 7/32	17/32	27/32	13/16	18	UBG 2½
1	3/8	7/16	1 7/16	21/32	1 1/32	31/32	30	UBG 3
1½	7/16	½	1 11/16	25/32	1 5/32	1 1/16	49	UBG 3½
2	½	5/8	1⅞	13/16	1 5/16	1 3/16	76	UBG 4
3¼	5/8	¾	2 13/32	1 1/16	1 11/16	1 9/16	149	UBG 5
4¾	¾	⅞	2 27/32	1¼	2	1⅞	222	UBG 6
6½	⅞	1	3 5/16	1 7/16	2 9/32	2⅛	343	UBG 7
8½	1	1⅛	3¾	1 11/16	2 11/16	2⅝	534	UBG 8
9½	1⅛	1¼	4¼	1 13/16	2 29/32	2⅝	746	UBG 9
12	1¼	1⅜	4 11/16	2 1/32	3¼	3	968	UBG10
13½	1⅜	1½	5¼	2¼	3⅝	3 9/16	1,287	UBG11
17	1½	1⅝	5⅝	2⅝	3⅞	3⅝	1,749	UBG12
25	1¾	2	7	2⅞	5	4 5/16	2,802	UBG14
35	2	2¼	7¾	3¼	5¾	5	4,134	UBG16
45	2¼	2½	8¾	3¾	5½	5⅝	5,940	UBG18
55	2½	2¾	10½	4⅛	7¼	6	8,412	UBG20
70	2¾	3	12	4½	7⅝	6 5/16	10,850	UBG22
85	3	3¼	13	5	7⅞	7	11,946	UBG24
120	3½	3¾	15	5¾	9½	8	21,000	UBG28

DIMENSIONS SHOWN ARE NOMINAL



SCREW PIN CHAIN

Safe Working Load U.S. tons	Body Dia. d	Pin Dia. D	Inside Length L (Min.)	Inside Width at Pin W	Outside of eye Dia. (Max.)	Approx. Wt. per 100 in lbs.	Ordering Code Galvanised
½	¼	5/16	⅞	15/32	11/16	11	UDG 2
¾	5/16	3/8	1 1/32	17/32	13/16	17	UDG 2½
1	3/8	7/16	1¼	21/32	31/32	29	UDG 3
1½	7/16	½	1 7/16	23/32	1 1/16	42	UDG 3½
2	½	5/8	1⅝	13/16	1 5/16	71	UDG 4
3¼	5/8	¾	2	1 1/16	1 9/16	127	UDG 5
4¾	¾	⅞	2⅜	1¼	1⅞	221	UDG 6
6½	⅞	1	2 13/16	1 7/16	2⅛	315	UDG 7
8½	1	1⅛	3 3/16	1 11/16	2⅜	460	UDG 8
9½	1⅛	1¼	3 9/16	1 13/16	2⅝	668	UDG 9
12	1¼	1⅜	3 15/16	2 1/32	3	896	UDG10
13½	1⅜	1½	4 7/16	2¼	3 5/16	1,220	UDG11
17	1½	1⅝	4⅞	2⅜	3⅝	1,635	UDG12
25	1¾	2	5¾	2⅞	4 5/16	2,550	UDG14
35	2	2¼	6¾	3¼	5	3,630	UDG16
45	2¼	2½	7⅛	3¾	5⅝	5,500	UDG18
55	2½	2¾	8	4⅛	6	7,420	UDG20
70	2¾	3	8½	4½	6 5/16	9,650	UDG22
85	3	3¼	8½	5	7	10,840	UDG24
120	3½	3¾	10½	5¾	8	19,250	UDG28

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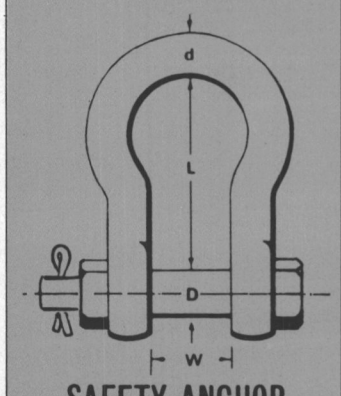

SAFETY ANCHOR

Safe Working Load U.S. tons	Body Dia. d	Pin Dia. D	Inside Length L (Min.)	Inside Width at Pin W	Approx. Wt. per 100 in lbs.	Ordering Code Galvanised
2	½	⅝	1⅞	13/16	85	USBG 4
3¼	⅝	¾	2 13/32	1 1/16	162	USBG 5
4¾	¾	⅞	2 27/32	1¼	287	USBG 6
6½	⅞	1	3 5/16	1 7/16	402	USBG 7
8½	1	1⅛	3¾	1 11/16	571	USBG 8
9½	1⅛	1¼	4¼	1 13/16	795	USBG 9
12	1¼	1⅜	4 11/16	2 1/32	1,129	USBG10
13½	1⅜	1½	5¼	2¼	1,536	USBG11
17	1½	1⅝	5⅝	2⅜	1,968	USBG12
25	1¾	2	7	2⅞	3,140	USBG14
35	2	2¼	7¾	3¼	4,645	USBG16
45	2¼	2½	8¾	3¾	6,750	USBG18
55	2½	2¾	10½	4⅛	9,420	USBG20
70	2¾	3	12	4½	12,000	USBG22
85	3	3¼	13	5	14,530	USBG24
120	3½	3¾	15	5¾	25,080	USBG28
150	4	4¼	17	6½	35,900	USBG32

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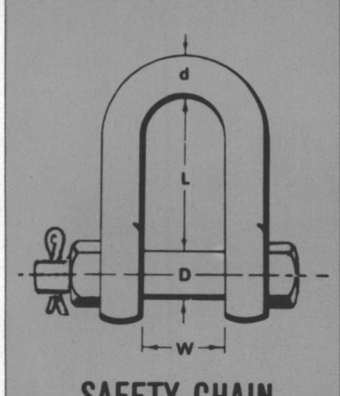
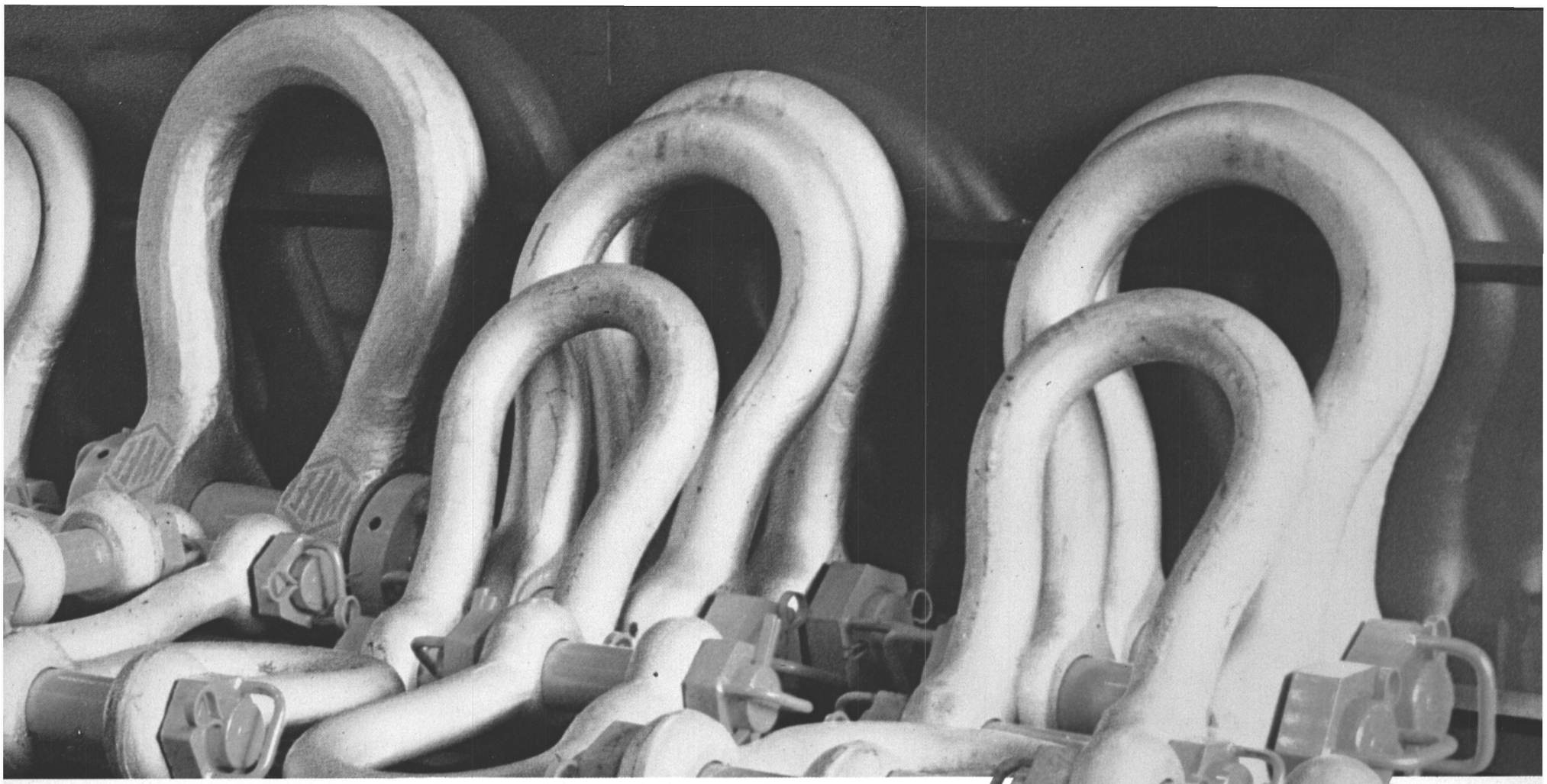


SAFETY CHAIN

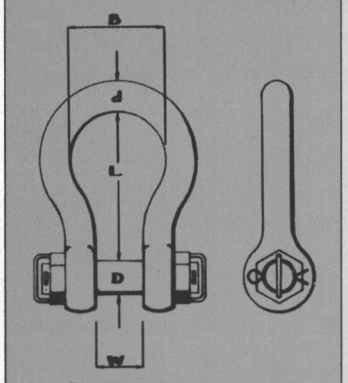
Safe Working Load U.S. tons	Body Dia. d	Pin Dia. D	Inside Length L (Min.)	Inside Width at Pin W	Outside of eye Dia. (Max.)	Approx. Wt. per 100 in lbs.	Ordering Code Galvanised
2	½	⅝	1⅞	13/16	1 5/16	78	USDG 4
3¼	⅝	¾	2	1 1/16	1 9/16	160	USDG 5
4¾	¾	⅞	2⅜	1¼	1⅞	269	USDG 6
6½	⅞	1	2 13/16	1 7/16	2⅛	372	USDG 7
8½	1	1⅛	3 3/16	1 11/16	2⅜	544	USDG 8
9½	1⅛	1¼	3 9/16	1 13/16	2⅝	738	USDG 9
12	1¼	1⅜	3 15/16	2 1/32	3	1,038	USDG10
13½	1⅜	1½	4 7/16	2¼	3 5/16	1,349	USDG11
17	1½	1⅝	4⅞	2⅜	3⅝	1,855	USDG12
25	1¾	2	5¾	2⅞	4 5/16	2,865	USDG14
35	2	2¼	6¾	3¼	5	4,128	USDG16
45	2¼	2½	7½	3¾	5⅝	6,340	USDG18
55	2½	2¾	8	4⅛	6	8,465	USDG20
70	2¾	3	8½	4½	6 5/16	10,600	USDG22
85	3	3¼	9	5	7	12,360	USDG24
120	3½	3¾	10½	5¾	8	21,860	USDG28
150	4	4¼	12½	6½	9¼	31,100	USDG32

DIMENSIONS SHOWN ARE NOMINAL



L SHACKLES

"HIGH CAPACITY" SHACKLES

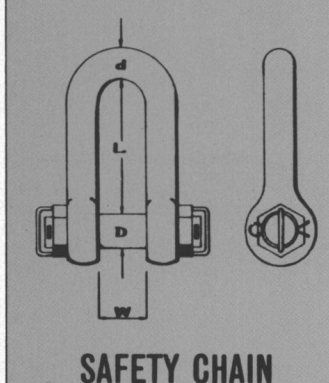


SAFETY ANCHOR

DIMENSIONS IN MM (AND INCHES)

Safe Working Load U.S.tons	Body Dia. d	Pin Dia. D	Inside Length L (Min.)	Inside Width at Pin W	Bow Dia. B (Min.)	Ordering Code	Approx. Weight Each Kgs. (lbs.)
50	50 (2)	55 (2¼)	250 (9⅞)	85 (3⅜)	160 (6¼)	HCA 50	22 (48)
80	65 (2½)	70 (2¾)	320 (12⅝)	110 (4⅜)	200 (7⅞)	HCA 65	43 (95)
120	80 (3)	82.5 (3¼)	390 (15⅜)	130 (5⅛)	250 (9⅞)	HCA 80	73 (160)
150	90 (3½)	95 (3¾)	435 (17⅛)	150 (5⅞)	280 (11)	HCA 90	115 (260)
175	105 (4)	110 (4¼)	460 (18)	165 (6½)	300 (11⅞)	HCA105	175 (385)
200	110 (4¼)	120 (4¾)	520 (20½)	175 (6⅞)	330 (13)	HCA110	210 (460)
250	120 (4¾)	130 (5⅛)	575 (22½)	200 (7⅞)	360 (14⅛)	HCA120	290 (640)
300	130 (5⅛)	145 (5⅝)	650 (25½)	210 (8¼)	400 (15¾)	HCA130	370 (810)
400	145 (5⅝)	155 (6⅛)	710 (28)	225 (8⅞)	450 (17¾)	HCA145	520 (1140)
500	155 (6⅛)	170 (6¾)	775 (30½)	250 (9⅞)	500 (19⅝)	HCA155	630 (1380)
750	205 (8)	215 (8½)	830 (32½)	340 (13⅜)	585 (23)	HCA205	1400 (3070)
1000	245 (9½)	255 (10)	990 (39)	395 (15½)	740 (29⅛)	HCA245	2350 (5150)

DIMENSIONS SHOWN ARE NOMINAL



SAFETY CHAIN

DIMENSIONS IN MM (AND INCHES)

Safe Working Load U.S.tons	Body Dia. d	Pin Dia. D	Inside Length L (Min.)	Inside Width at Pin W	Ordering Code	Approx. Weight Each Kgs. (lbs.)
50	50 (2)	55 (2¼)	200 (8)	85 (3⅜)	HCC 50	20 (46)
80	65 (2½)	70 (2¾)	250 (10)	110 (4⅜)	HCC 65	40 (90)
120	80 (3)	82.5 (3¼)	300 (11¾)	130 (5⅛)	HCC 80	70 (160)
150	90 (3½)	95 (3¾)	350 (13¾)	150 (5⅞)	HCC 90	115 (250)
175	105 (4)	110 (4¼)	400 (15¾)	165 (6½)	HCC105	170 (370)
200	110 (4¼)	120 (4¾)	450 (17½)	175 (6⅞)	HCC110	200 (445)
250	120 (4¾)	130 (5⅛)	500 (19½)	200 (7⅞)	HCC120	280 (620)
300	130 (5⅛)	145 (5¾)	550 (21½)	210 (8¼)	HCC130	350 (780)
400	145 (5¾)	155 (6⅛)	600 (23½)	225 (8⅞)	HCC145	500 (1100)
500	155 (6⅛)	170 (6¾)	640 (25½)	250 (9⅞)	HCC155	600 (1330)
750	205 (8)	215 (8½)	700 (27½)	340 (13⅜)	HCC205	1350 (2970)
1000	245 (9½)	255 (10)	850 (33½)	395 (15½)	HCC245	2260 (4970)

DIMENSIONS SHOWN ARE NOMINAL

Apart from the shackles listed we are able to design and produce shackles to special dimensions up to 1000 tons S.W.L. capacity.

WFE

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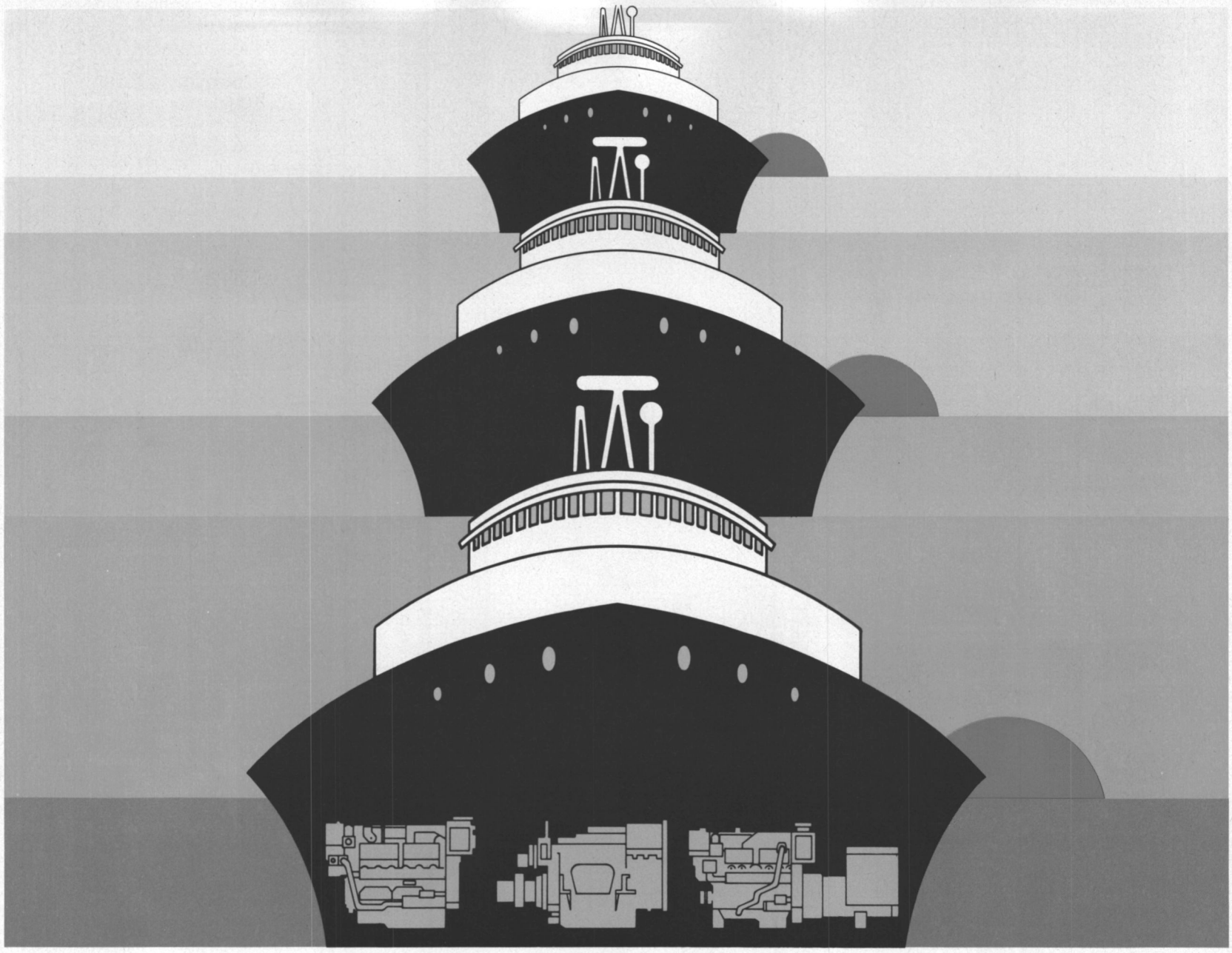

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Caterpillar builds major components of a marine propulsion system—engines, transmissions, controls—each designed by one source, ensuring the same high standard of quality throughout.

Cat Engines, marine transmissions and other components are society approved and factory assembled into a single, perfectly matched unit. You save engineering time and expense . . . reduce installation cost . . . simplify maintenance. All from one source of proven power plus quality service and parts support from Caterpillar's worldwide network of dealers.

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Savannah Machine And Shipyard Co. Names Curtis Dotson

David Green, executive vice president of Savannah Machine and Shipyard, has announced that **Curtis Dotson** has been elected to the position of vice president-Estimating.



Curtis Dotson

Mr. **Dotson** joined Savannah Machine and Shipyard in March 1978, as contract manager, and previously had spent the past 20 years at Newport News Shipbuilding and Dry Dock Co., where he held the position of senior estimator, Ship Repair Sales. After having started as a welder, Mr. **Dotson** worked as a machinery and piping designer, quality assurance engineer and production control section supervisor. While employed at Newport News, Mr. **Dotson** completed 3½ years of civil engineering training at Virginia Polytechnic Institute. Later, he received a degree in economics from the College of William and Mary, and is now completing the requirements for a master's degree in business from the same institution.

Jeffboat Proposed To Build Barges And Recondition Towboat

Parker Towing Company, Inc., Post Office Box 72, Tuscaloosa, Ala., has applied for a Title XI guarantee to aid in financing the construction of two petroleum tank barges and three coal hopper barges, and the reconditioning of one towboat. The guarantee also would aid in the refinancing of 34 existing coal hopper barges.

The applicant provides affreightment and general towage service on the Black Warrior-Tombigbee River System and the Gulf Intracoastal Canal East, primarily transporting coal. The construction of the petroleum barges will permit the company to diversify its services.

The application is for a loan guarantee of $4,800,000, up to 87½ percent of the estimated actual cost or depreciated costs of all vessels. Jeffboat, Inc., Jeffersonville, Ind., has been proposed for the construction and reconditioning work.

Coastal Towing, Inc. Building Two Towboats, Nine Tank Barges

Coastal Towing, Inc., Houston, has applied for a Title XI guarantee to aid in financing the construction of nine tank barges and two towboats. The applicant is an affiliate of, and will share premises and office facilities with, Coastal Towing, Inc., Springhill, 7790 Braniff, Houston, Texas.

The applicant currently owns one of the barges, and all the remaining vessels are scheduled for delivery through September 1979. The barges will be self-unloading vessels with heating coils and self-contained hot oil heating systems. They are being constructed by Nashville Bridge Co., Nashville, Tenn. The towboats will be suitable for inland waterway towing service, with no accommodations for passengers. Verret Shipyard, Plaquemine, La., is the builder.

The estimated actual costs of the vessels total $8,636,330. Approximately $7,500,000 of that amount, representing 75 percent of the costs of the towboats and 87½ percent of the costs of the barges, will be eligible for the Title XI guarantee.

Announcing
the formation of
FURUNO U.S.A. INC.

The company that has been designing and manufacturing most of the marine electronic gear sold in this country by Konel Corporation has purchased Konel from Narco Scientific Corporation. We are the new company formed as a result: Furuno U.S.A. Inc.

We will continue to market and service the same products handled by Konel. We will continue the successful Konel policies with the same people and dealers, with the same emphasis on product excellence and world-wide Furuno service.

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FURUNO U.S.A. INC.

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Guralnick Associates Receives DOE Contract

Morris Guralnick Associates, Inc., San Francisco, Calif., has just been selected by the United States Department of Energy (DOE) to provide naval architectural and marine engineering consulting services throughout the period of design and construction of OTEC-1, the first Early Ocean Test Platform. Under terms of the contract, the Guralnick firm will provide general consulting services and engineering and administrative support for DOE in reviewing and analyzing all drawings and specifications for the vessel to be converted to the OTEC-1 test platform by the prime contractor for the project, Global Marine Development, Inc.

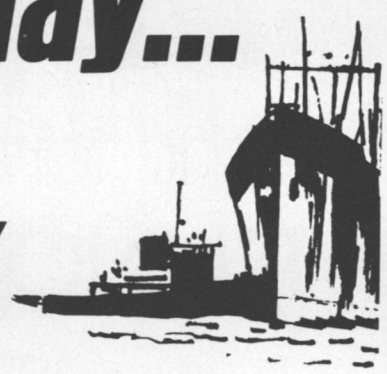
Among the many tasks scheduled to be performed by the San Francisco firm are hydrodynamic and structural analyses of the cold water pipe; review of the construction contractor's drawings for converting the ship and fabricating the OTEC test loop; and overview services during dock and sea trials. The work will be performed under a contract with the DOE San Francisco Operations Office, located in Oakland, Calif. The project management will be performed from a DOE project office in southern California.

The concept utilized in the Energy Department's ocean thermal energy conversion program involves a system of pumping warm ocean surface water through heat exchangers, where the water's heat will evaporate the working medium, ammonia. The ammonia vapor would then be utilized to turn a turbine-generator to produce electricity before being condensed by cold water pumped from ocean depths 3,000 feet below.

Morris Guralnick Associates, Inc., now in its 32nd year of operation, is the largest architectural and engineering firm of its type on the West Coast. Presently engaged in several long-term projects for the maritime industry, the U.S. Navy, commercial and government clients, the vastly expanding organization, in addition to its headquarters office in San Francisco, operates branch offices in San Diego, Calif., Bremerton, Wash., and Baltimore, Md.

U.S. COAST GUARD CERTIFICATION NO. 159.15/1027/1/III

Without Delay... INCINOLET Can Attack Pollution





Research Products' waterless INCINOLET decomposes human waste with each flushing into bacteria-free ASH. Its proprietary catalyst Candor supplies odor control for the no-discharge electric toilet system.

Incinolet allows ships and lighterage to comply with anti-pollution laws without loss of precious cargo space. Installation is simple because INCINOLET requires no valves, no water pipes, no chemicals, no holding tanks.

Incinolet can save dollars at installation — dollars every day in cargo space and provide compliance for vessels with regulations today . . . and at a purchase cost 6 times LESS than usual water/chemical discharge methods.

Name _____

Company _____ Phone _____ Telex _____

Address _____

City _____ State _____ Zip _____

Type of vessel(s) _____ ☐ New ☐ Planned ☐ Existing

No. of days in port _____ Total no. of persons _____

No. of days in port _____ Total no. of persons on board _____

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Webb Alumni Banquet To Be Held November 16

The Annual Banquet of the Alumni Association of Webb Institute of Naval Architecture will be held on Thursday, November 16, 1978, in the Belvedere Suite of The Rainbow Room, atop the RCA Building, Rockefeller Center, New York City.

A reception at 5:30 p.m. will be followed by dinner at 7 p.m.

Winston B. Sutter, president of the Association, will introduce the program for the evening.

The highlight of the evening will be the presentation of the W. Selkirk Owen Award to **Frank J. Joyce** of '44A. Mr. **Joyce,** the executive vice president of Universe Tank Ships, will be the 13th recipient of the W. Selkirk Owen Award, which was established to be awarded to alumni of outstanding achievement and service to their professions and alma mater, in memory of W. Selkirk Owen.

The president of Webb Institute, Adm. **Charles Payne,** USN (ret.), will deliver the annual "State of the Institute" message.

Arno Dimmling Rejoins Crowley Maritime Corp.

Arno Dimmling has rejoined Crowley Maritime Corporation's Caribbean Division in Jacksonville, Fla., as special assistant to the Division senior vice president, **Robert G. Homan,** according to a recent announcement by Mr. **Homan.**

Mr. **Dimmling** previously served as director of operations for Euro-Arab Sea Trailer, Brussels, Belgium, a Crowley-affiliated company which operates triple-deck, roll-on/roll-off barges from Marseilles, France, to Yenbu, Saudi Arabia.

Prior to his position in Brussels, Mr. **Dimmling** had been manager of intermodal services for Trailer Marine Transport Corporation during the early stages of TMT's operation as a Crowley subsidiary from 1974 to 1976.

Mr. **Dimmling's** new assignment will encompass a wide range of administrative duties. As assistant to Mr. **Homan,** he will be vitally involved in the management of the Division and its subsidiaries, including Trailer Marine Transport, which provides ro/ro barge service between the U.S. mainland and Puerto Rico; Gulf Caribbean Marine Lines, which provides pass/pass warehouse barge service between the U.S. Gulf and 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.

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Mr. **Dotson** joined Savannah Machine and Shipyard in March 1978, as contract manager, and previously had spent the past 20 years at Newport News Shipbuilding and Dry Dock Co., where he held the position of senior estimator, Ship Repair Sales. After having started as a welder, Mr. **Dotson** worked as a machinery and piping designer, quality assurance engineer and production control section supervisor. While employed at Newport News, Mr. **Dotson** completed 3½ years of civil engineering training at Virginia Polytechnic Institute. Later, he received a degree in economics from the College of William and Mary, and is now completing the requirements for a master's degree in business from the same institution.

Jeffboat Proposed To Build Barges And Recondition Towboat

Parker Towing Company, Inc., Post Office Box 72, Tuscaloosa, Ala., has applied for a Title XI guarantee to aid in financing the construction of two petroleum tank barges and three coal hopper barges, and the reconditioning of one towboat. The guarantee also would aid in the refinancing of 34 existing coal hopper barges.

The applicant provides affreightment and general towage service on the Black Warrior-Tombigbee River System and the Gulf Intracoastal Canal East, primarily transporting coal. The construction of the petroleum barges will permit the company to diversify its services.

The application is for a loan guarantee of $4,800,000, up to 87½ percent of the estimated actual cost or depreciated costs of all vessels. Jeffboat, Inc., Jeffersonville, Ind., has been proposed for the construction and reconditioning work.

Coastal Towing, Inc. Building Two Towboats, Nine Tank Barges

Coastal Towing, Inc., Houston, has applied for a Title XI guarantee to aid in financing the construction of nine tank barges and two towboats. The applicant is an affiliate of, and will share premises and office facilities with, Coastal Towing, Inc., Springhill, 7790 Braniff, Houston, Texas.

The applicant currently owns one of the barges, and all the remaining vessels are scheduled for delivery through September 1979. The barges will be self-unloading vessels with heating coils and self-contained hot oil heating systems. They are being constructed by Nashville Bridge Co., Nashville, Tenn. The towboats will be suitable for inland waterway towing service, with no accommodations for passengers. Verret Shipyard, Plaquemine, La., is the builder.

The estimated actual costs of the vessels total $8,636,330. Approximately $7,500,000 of that amount, representing 75 percent of the costs of the towboats and 87½ percent of the costs of the barges, will be eligible for the Title XI guarantee.

Announcing
the formation of
FURUNO U.S.A. INC.

The company that has been designing and manufacturing most of the marine electronic gear sold in this country by Konel Corporation has purchased Konel from Narco Scientific Corporation. We are the new company formed as a result: Furuno U.S.A. Inc.

We will continue to market and service the same products handled by Konel. We will continue the successful Konel policies with the same people and dealers, with the same emphasis on product excellence and world-wide Furuno service.

As Furuno U.S.A. we will more than ever be your best source for the best in radar, navigational and fish-finding echo sounders, sonar, radio direction finding equipment, LORAN receivers, and communication equipment.

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Guralnick Associates Receives DOE Contract

Morris Guralnick Associates, Inc., San Francisco, Calif., has just been selected by the United States Department of Energy (DOE) to provide naval architectural and marine engineering consulting services throughout the period of design and construction of OTEC-1, the first Early Ocean Test Platform. Under terms of the contract, the Guralnick firm will provide general consulting services and engineering and administrative support for DOE in reviewing and analyzing all drawings and specifications for the vessel to be converted to the OTEC-1 test platform by the prime contractor for the project, Global Marine Development, Inc.

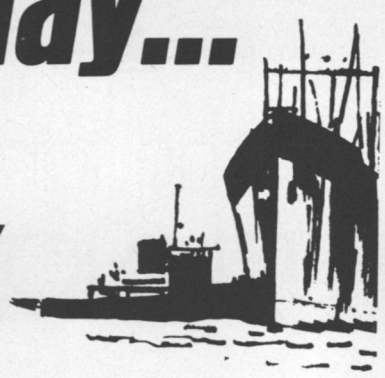
Among the many tasks scheduled to be performed by the San Francisco firm are hydrodynamic and structural analyses of the cold water pipe; review of the construction contractor's drawings for converting the ship and fabricating the OTEC test loop; and overview services during dock and sea trials. The work will be performed under a contract with the DOE San Francisco Operations Office, located in Oakland, Calif. The project management will be performed from a DOE project office in southern California.

The concept utilized in the Energy Department's ocean thermal energy conversion program involves a system of pumping warm ocean surface water through heat exchangers, where the water's heat will evaporate the working medium, ammonia. The ammonia vapor would then be utilized to turn a turbine-generator to produce electricity before being condensed by cold water pumped from ocean depths 3,000 feet below.

Morris Guralnick Associates, Inc., now in its 32nd year of operation, is the largest architectural and engineering firm of its type on the West Coast. Presently engaged in several long-term projects for the maritime industry, the U.S. Navy, commercial and government clients, the vastly expanding organization, in addition to its headquarters office in San Francisco, operates branch offices in San Diego, Calif., Bremerton, Wash., and Baltimore, Md.

U.S. COAST GUARD CERTIFICATION NO. 159.15/1027/1/III

Without Delay... INCINOLET Can Attack Pollution





Research Products' waterless INCINOLET decomposes human waste with each flushing into bacteria-free ASH. Its proprietary catalyst Candor supplies odor control for the no-discharge electric toilet system.

Incinolet allows ships and lighterage to comply with anti-pollution laws without loss of precious cargo space. Installation is simple because INCINOLET requires no valves, no water pipes, no chemicals, no holding tanks.

Incinolet can save dollars at installation — dollars every day in cargo space and provide compliance for vessels with regulations today . . . and at a purchase cost 6 times LESS than usual water/chemical discharge methods.

Name _____

Company _____ Phone _____ Telex _____

Address _____

City _____ State _____ Zip _____

Type of vessel(s) _____ ☐ New ☐ Planned ☐ Existing

No. of days in port _____ Total no. of persons _____

No. of days in port _____ Total no. of persons on board _____

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Webb Alumni Banquet To Be Held November 16

The Annual Banquet of the Alumni Association of Webb Institute of Naval Architecture will be held on Thursday, November 16, 1978, in the Belvedere Suite of The Rainbow Room, atop the RCA Building, Rockefeller Center, New York City.

A reception at 5:30 p.m. will be followed by dinner at 7 p.m.

Winston B. Sutter, president of the Association, will introduce the program for the evening.

The highlight of the evening will be the presentation of the W. Selkirk Owen Award to **Frank J. Joyce** of '44A. Mr. **Joyce,** the executive vice president of Universe Tank Ships, will be the 13th recipient of the W. Selkirk Owen Award, which was established to be awarded to alumni of outstanding achievement and service to their professions and alma mater, in memory of W. Selkirk Owen.

The president of Webb Institute, Adm. **Charles Payne,** USN (ret.), will deliver the annual "State of the Institute" message.

Arno Dimmling Rejoins Crowley Maritime Corp.

Arno Dimmling has rejoined Crowley Maritime Corporation's Caribbean Division in Jacksonville, Fla., as special assistant to the Division senior vice president, **Robert G. Homan,** according to a recent announcement by Mr. **Homan.**

Mr. **Dimmling** previously served as director of operations for Euro-Arab Sea Trailer, Brussels, Belgium, a Crowley-affiliated company which operates triple-deck, roll-on/roll-off barges from Marseilles, France, to Yenbu, Saudi Arabia.

Prior to his position in Brussels, Mr. **Dimmling** had been manager of intermodal services for Trailer Marine Transport Corporation during the early stages of TMT's operation as a Crowley subsidiary from 1974 to 1976.

Mr. **Dimmling's** new assignment will encompass a wide range of administrative duties. As assistant to Mr. **Homan,** he will be vitally involved in the management of the Division and its subsidiaries, including Trailer Marine Transport, which provides ro/ro barge service between the U.S. mainland and Puerto Rico; Gulf Caribbean Marine Lines, which provides pass/pass warehouse barge service between the U.S. Gulf and Caribbean; and CTMT, Inc. and Inter-island Intermodal Line, which operate feeder services to Venezuela, the Dominican Republic, the Virgin Islands, and the Leeward and Windward Islands.

Our LTG reheat boiler.
For increased reliability in today's energy-saving reheat steam plants.

The LTG (Low Temperature Gas) reheat boiler from Combustion Engineering utilizes either C-E's reliable V2M-8 or V2M-9 boiler configuration, with a separately fired, water-cooled reheat furnace added after the main generating bank. The reheater is mounted above the boiler outlet in a relatively low temperature gas environment.

During the reheat mode of operation, fuel flow is divided between the superheat and reheat furnaces. But during non-reheat modes of operation, the fuel flow to the reheat furnace is secured. The reheat tubes are not subjected to high temperature gases. So no cooling steam is required. There are no dampers to fail.

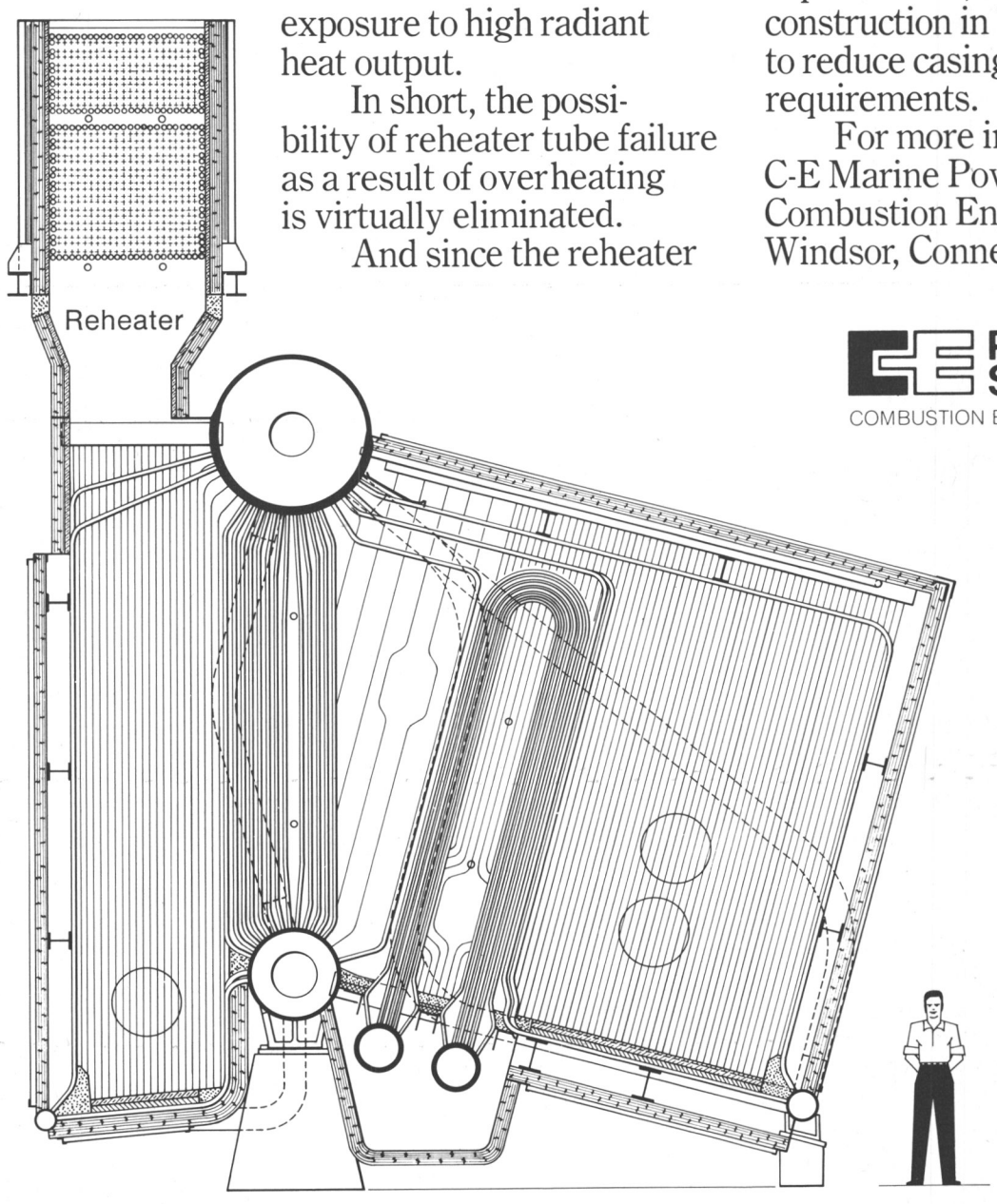
There's no chance of exposure to high radiant heat output.

In short, the possibility of reheater tube failure as a result of overheating is virtually eliminated.

And since the reheater is located in a relatively low temperature gas environment, maldistribution of steam flow during normal reheat operation becomes less critical, allowing for a lower pressure drop.

Then, too, dependability is increased and maintenance needs are decreased through the use of bare alloy steel tubing in the reheater, vertical superheaters, and welded wall construction in both furnaces to reduce casing and refractory requirements.

For more information, write C-E Marine Power Systems, Combustion Engineering, Inc., Windsor, Connecticut 06095.



POWER SYSTEMS
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C-E experience pays off. On the bottom line.

BSRA Receives Support For Research Into Quieter Ships

Against a background of increasing concern for the seafarer from the disturbing and sometimes harmful effects of noise, the Ship and Marine Technology Requirements Board has given its support to a Shipboard Noise Project proposed by the British Ship Research Association.

The project is aimed at improving procedures for predicting noise levels in ships at the drawing board stage. It will be concerned in particular with accommodation spaces, and extensive tests and trials onboard ships are planned by BSRA. A full-scale model of an accommodation space will be built to allow measurements under controlled conditions to be made on various materials and for various cabin arrangements.

The move follows the successful completion of an earlier three-year project begun in 1975. As in the previous project, total funding will be provided by the Department of Industry.

The Department of Trade has recently published a Code of Practice for Noise Levels in Ships, and has taken an active and supporting interest in both of the BSRA projects. In the introduction to the Code, the point is made that the technology necessary to ensure that every vessel meets its requirements is still in the course of development. It is with this technology that the British Ship Research Association projects are directly concerned.

Halter Crewboats Delivered For Indonesian Operations

Halter Marine, Inc., New Orleans, La., has delivered three 65-foot all-aluminum crewboats to Billiton Metals, The Hague, Netherlands. Billiton, a subsidiary of the Shell Oil Company, will operate the vessels in Indonesian waters in support of tin mining operations.



Each of the three new vessels, powered by two GM 12V71TI diesels, will operate in Indonesian waters.

The new vessels, PB1, PB2 and PB3, have overall dimensions of 65 feet in length, with a 17-foot beam.

Propulsion in each vessel is provided by two GM 12V71TI diesel engines, and reverse/reduction gears are MG514 with a 2:1 ratio. Controls are by Morse.

Auxiliary machinery includes a 20-kw Delco main generator, a Conselect switchboard, and three tons of Barmar air-conditioning.

Communications and navigation equipment includes a Sailor VHF RT 144 AB, a Scientific Radio MD210 single-sideband radio, and Decca 110 radar.

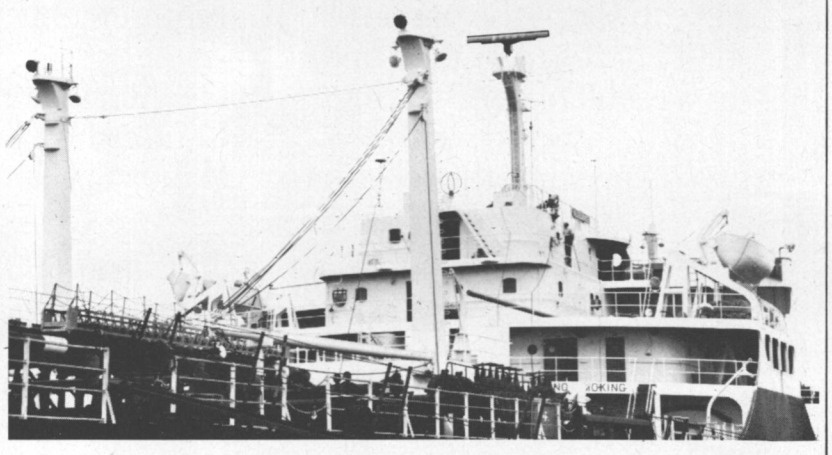
The 36-passenger-capacity vessels are Lloyd's classed, 100A launch. They were built at the Chalmette, La., Division of Halter Marine, Inc., one of 10 shipyards owned and operated by Halter in the Southeastern United States.

Halter is the world's largest builder of supply vessels for the offshore oil and gas industry.

ATLAS RADARS and TANKERS... GO TOGETHER



ATLAS 6500 BCA



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

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

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

Exceptional picture presentation and target discrimination are achieved by advanced powerful solid state transmitters with four pulse lengths (25kW for X-Band, 30kW for S-Band) and rugged narrow beam antennas (.8° for X-Band, 1.7° for S-Band). 16 inch display includes nine ranges from .3nm to 72 nm, "ships head-up" or "North-up" presentation and gyro driven True Bearing Scale.

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

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

KRUPP INTERNATIONAL, INC.
KRUPP ATLAS-ELEKTRONIK DIVISION
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YES! *I WOULD LIKE MORE INFORMATION PLEASE!*
ATLAS 6500 BCA

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



RECHRISTENED—Rechristening of Matson Navigation Company's newly renamed S/S Manulani (ex-Hawaiian Progress) is performed by the Reverend **Abraham Akaka** in Honolulu. Assisting in the traditional Hawaiian ceremonies are, left to right: **Gilbert E. Cox,** president of Alexander & Baldwin, Inc., Matson's parent company; Capt. **George B. Cardew,** master of the Manulani, and **R.J. Pfeiffer,** Matson's president. The Manulani's sistership, the S/S Manukai (ex-Hawaiian Enterprise) was rechristened on September 27.

9 REASONS WHY

you should consider this monitor for any size vessel.

We're talking about TUGMONITOR® Series 70 safety watch and control systems.

1. Earlier warning. Engine sensors are reliably accurate, detecting **real** trouble promptly to prevent damage and downtime.

2. No false alarms. Here's why:

- Normal variations are discarded by Time Average Monitoring which looks only at the operating average.
- Normal conditions such as engine start-stop do not cause false alarms because alarm circuits have delayed speed-actuated arming.

3. No "lost" alarms. Any alarmed condition is locked on the control panel until manually reset, even though other conditions change. (Engine shutdown, for example.)

4. One location for all monitoring. One glance at the Central Information Control Panel tells where a problem is. Optional remote alarm or control stations may be placed where desired.

5. Engine protection at all speeds. That's because oil pressures and other criteria that regulate speed are monitored at different levels for high and low speeds—not just one level that provides low speed protection only.



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6. Easy crew maintenance. A complete operational test of all electronics can be done from a single front panel switch. If a fault is detected, the panel is opened from the front and, in most cases, the repair is made by replacing a plug-in printed circuit board.

7. The system is self-policing. It continually checks itself for broken wires, P.C.B. failures and improper alarm arming.

8. Extended component life. This is assured by closely regulated power supply with a built-in, stand-by battery charger.

9. Fleet proven reliability. National Marine's fifty years of operating experience with engine functions goes into the TUGMONITOR system. Over 300 TUGMONITOR systems are operating now.

For lower cost than a custom-built system you get a superior quality, modular design system tailored to your vessel. As part of the modular concept you have a choice of several options ranging from automatic generator transfer to an engine room event logger. TUGMONITOR system offers proven protection for your crew, vessel and investment. Get more facts. Write us, or...we're just a phone call away. (314) 968-4770.

Reduced manning levels permitted with options of automatic and remote controls.
CERTIFIED MANNING LEVELS. Vessels subject to U. S. Coast Guard, American Bureau of Shipping and/or Canadian Board of Steamship Inspection manning regulations require specific monitoring and control functions to permit reduction of engine room manning levels. The TUGMONITOR building block design has been utilized to meet these requirements, even for unattended machinery spaces.

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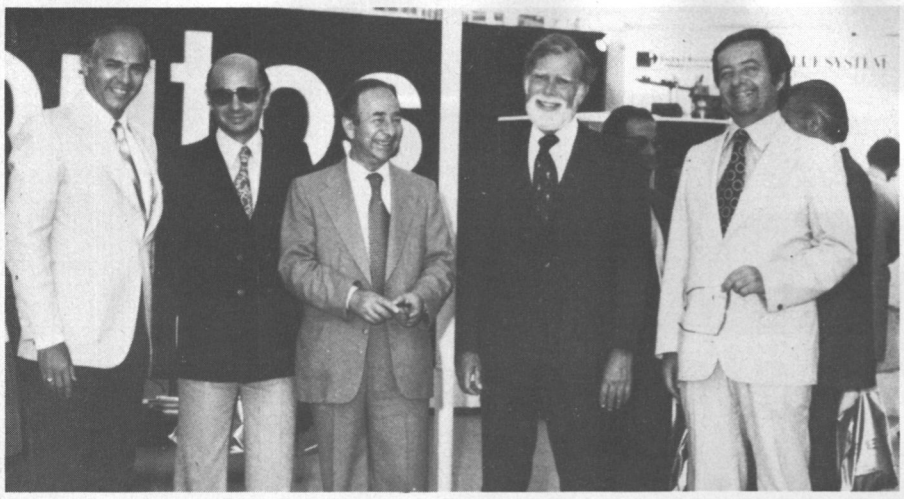
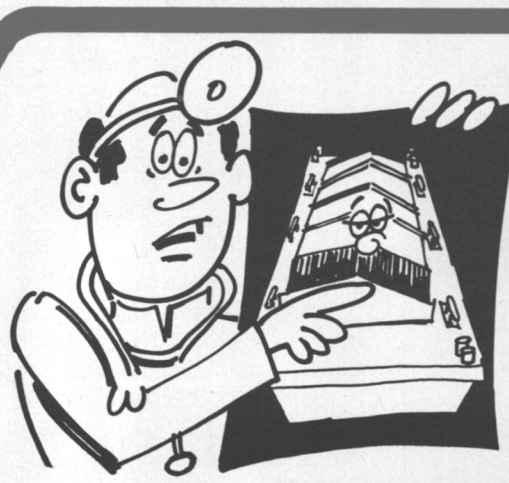


SIGMA TREATMENT/HELLENIC SHIPYARDS AGREEMENT— **George B. Efthimiou,** president of Sigma Treatment Systems, Inc. of New York, N.Y., has announced the signing of a joint venture agreement with the Hellenic Shipyards, Skaramanga, Greece, for the fabrication of Sigma Disposal Systems and other pollution equipment by Hellenic Shipyards for the Eastern Mediterranean area. A formal contract was signed at the Posidonia Exhibition held in Piraeus, Greece. Pictured above, left to right: **G.B. Efthimiou,** president, Sigma Treatment Systems, Inc.; **M. Triantafyllides,** technical manager, Hellenic Shipyards, Skaramanga, Greece; **C. Caldis,** managing director, Hellenic Shipyards; **W.F. Roberts,** design consultant, Sigma Treatment Systems, Inc., and **E. Konstas,** managing director, Technomar, Co., Ltd., representative for Sigma Treatment Systems, Inc., in Greece.



Your investment is dying

Think about the money you originally invested in barges — and what it would cost to replace them at today's prices. Barges aren't cheap and the only way to maximize the return on your initial investment is to maximize their operating life. Port Allen Marine *has* the facilities and "operating room" to expertly maintain and extend your barge's serviceable life.

We operate a full service shipyard which includes four dry docks: two 500 ton capacity, one 1800 ton and one 2500 ton capacity on the Port Allen - Morgan City route mile 57 and Port Allen Marine on the Mississippi, located at mile post 224.6 in Baton Rouge, offers professional "gas-free" barge cleaning services. A complete barge repair service, including topside emergency repairs, is available to handle those unexpected disasters such as "skin" punctures and abrasions — even structural collapse.

We can provide sandblasting of "affected" areas and coating of "exposed" surfaces, repair of wounds, repair or replacement of diseased parts, transplants — even new interior construction when required.

Don't let your investment die, contact Port Allen Marine today — we'll not only save your barge's life, we'll save your investment.

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PAMS

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Twin-Screw Bridge Maintenance Tug & Firefighter



Powered by a pair of GM Detroit Diesel Allison 6-71s, the Tappan Zee II was designed and built by Gladding-Hearn for her many and varied duties associated with the maintenance of the Tappan Zee Bridge.

Gladding-Hearn Shipbuilding Corporation, 1 Riverside Avenue, Somerset, Mass. 02725, recently announced the delivery of an all-steel 48-foot by 16-foot tug, Tappan Zee II, to the New York State Thruway Authority. There is really nothing spectacular about the boat—it's just a plain, sturdy tug, built to American Bureau of Shipping + 1 classification. **Preston R. Gladding,** the tug's designer, made her look like a small tug should, with proper shear and jaunty visor.

Power selected was a matched pair of General Motor Detroit Diesel Allison 6-71s, the old reliable work horse of the marine industry. A small Onan 110 a-c generator is also set in the engine room for supplying a-c power to hand tools used in bridge maintenance.

Due to the exposure of municipal purchasing and quality assurance, the Authority took every precaution by specifying Tappan Zee II to be built to American Bureau of Shipping classification. George G. Sharp, Inc., naval architects of New York, N.Y., also represented the Authority during construction.

Although the tug may seem conventional, her duties are varied and interesting.

The three-mile-long Tappan Zee Bridge has 16,000 wood cluster piles around each bridge pier for icebreaking purposes, essential protection against the large ice flows coming south down the Hudson River. The maintenance of these piles is a never-ending maintenance chore serviced by two full dock-building crews and two lighters—the Tappan Zee II handles the lighters and crew transfers.

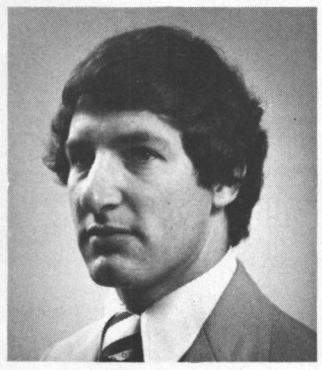
Because the Hudson River bed cannot support the total bridge load, the main bridge supports are semi-buoyant concrete caissons fitted with bilge pumps which must be maintained and inspected frequently, regardless if ice conditions exist.

Occasionally, a motorist will flick a lit cigarette off the bridge and the pile clusters will catch fire, therefore the tug is equipped with a 500-gpm firefighting monitor and pump for this emergency.

Although the Authority highway service trucks are equipped with firefighting apparatus, the Tappan Zee II can also spray foam on the roadway above with greater compatibility than the fire trucks, if an oil truck should catch fire.

Sun Shipbuilding Names Frank Daresta

Sun Ship has appointed **Frank Daresta** the director, business development and market research. In this post, Mr. **Daresta** holds responsibility for the company's business development program as well as its market research and transportation analysis functions. He reports to **Joseph J. Kleschick,** vice president-marketing.



Frank Daresta

Mr. **Daresta's** appointment represents Sun Ship's continuing efforts to be in a position to handle all aspects of the commercial marine, U.S. Navy, offshore, and industrial products markets. Mr. **Daresta's** appointment also strengthens the shipyard's ability to provide in-depth support to customers in these areas.

Mr. **Daresta** came to Sun Ship from Envirotech Corporation in Lebanon, Pa., where he was director-strategic planning, and held positions previously with Westinghouse and Turbo Power & Marine System of United Technologies Corporation.

Kvaerner-Moss, Inc. Appoints James Victory

Kvaerner-Moss, Inc., the United States representative of Kvaerner Industrier A/S, has announced the appointment of **James J. Victory** as vice president.



James J. Victory

Mr. **Victory** will be responsible for the development and management of programs to increase the Kvaerner Group's exposure and participation in the American market. Principal group companies served by Kvaerner-Moss include the Moss Rosenberg Shipyard of Norway, a major world supplier of inert gas systems and LNG technology, Thune-Eureka A/S, a builder of special marine pumps, and Kvaerner Brug, a large supplier of hydro power equipment. Myrens Verksted, Thune-Maskiner, and Mesna Brug are the remaining members of this worldwide group.

Prior to this recent assignment, Mr. **Victory** held a series of management positions with Deepsea Ventures Inc. As director of marketing, he was instrumental in the development, sale and final success of the company's ocean mining program. A versatile manager, Mr. **Victory** has lectured and written articles on the subject of ocean mining for manganese nodules, as well as participated directly as a working member of the mining crew at sea.

He is a registered professional engineer and is a member of The Society of Naval Architects and Marine Engineers, and the Society of Naval Engineers.

Mr. **Victory** will be headquartered in New York City at the offices of Kvaerner-Moss, Inc., 800 Third Avenue, New York, N.Y. 10022.

Matson Names Hughes Senior Vice President

Lyle F. Hughes, Matson Navigation Company vice president, has been appointed a senior vice president by the board of directors, it was announced by **R.J. Pfeiffer,** president.

Mr. **Hughes** joined Matson in 1961 and was named controller in 1965. He was appointed a vice president in 1973, with overall responsibility for the company's financial division.

Union Mechling Corp. Appoints David Gladwell

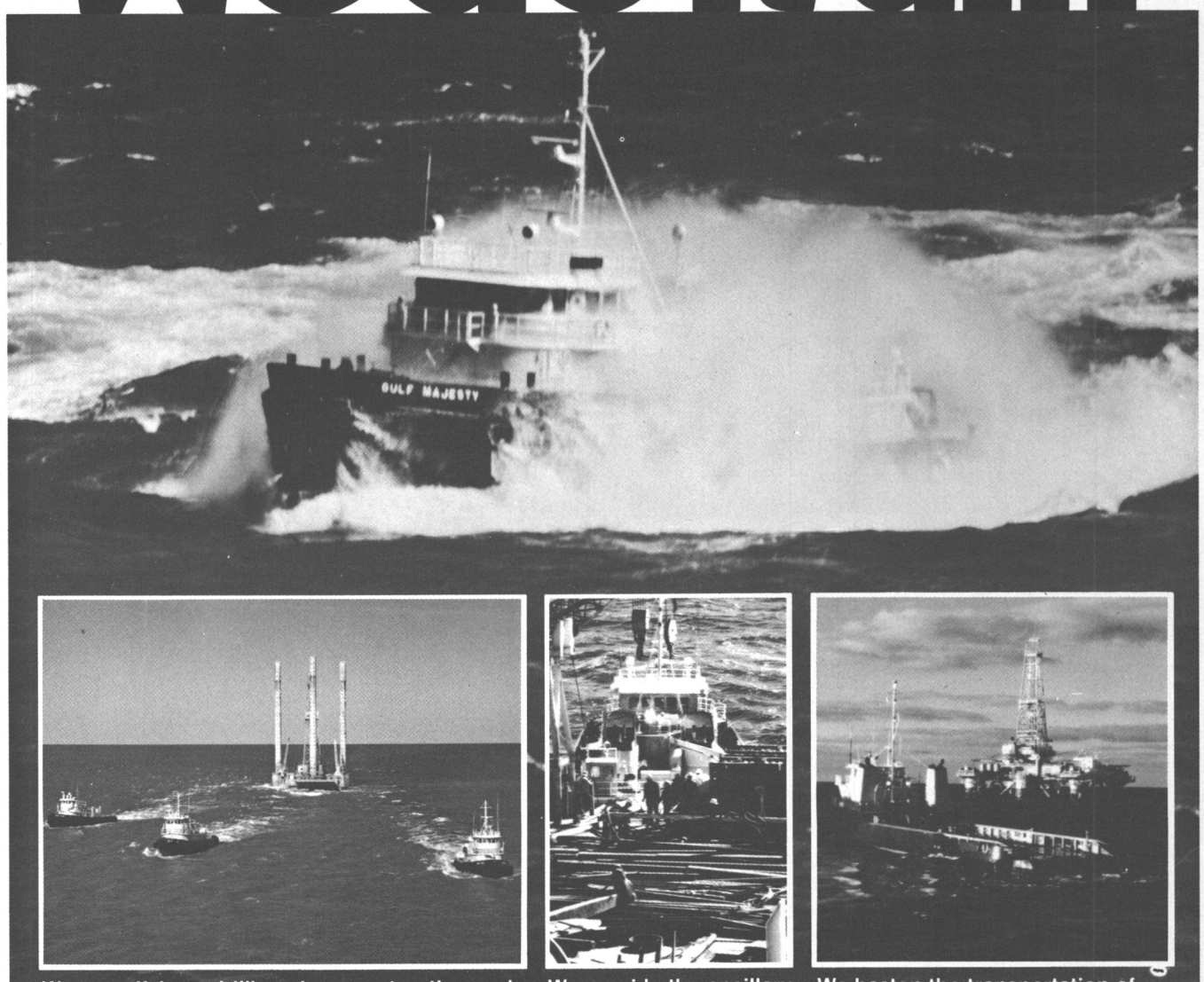
David M. Gladwell was named manager, customer services for Union Mechling Corporation, the subsidiary barge line of Dravo Corporation. He is succeeded as assistant to the vice president, sales, by **Michael R. Marlier.**

Mr. **Gladwell** joined Union Mechling Corporation in 1976. He has a bachelor's degree from West Virginia University and a master's degree in business and marketing from Marshall University. He is a member of the American Society of Traffic and Transportation and the Traffic Club of Pittsburgh.

Mr. **Marlier** joined Union Mechling in 1969, and most recently was a planning engineer. He is a mechanical engineering graduate of Carnegie-Mellon University and has a master's degree in business from the University of Pittsburgh. He is a member of the American Society of Mechanical Engineers.

Union Mechling provides common carrier barge transportation service on the inland rivers and the Gulf and Intracoastal Waterway.

We do it all!



We tow offshore drilling rigs, construction and pipe lay barges, and other equipment.

We provide the ancillary help you need for towing and anchor handling and offer strong support services for offshore construction.

We hasten the transportation of supplies, personnel, and materials to offshore locations.

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TO THE NEEDS OF A DYNAMIC INDUSTRY
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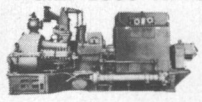
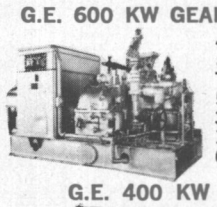
TURBO GENERATOR SETS

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

1 

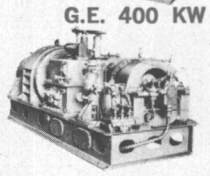
1500 KW — 450/3/1200 RPM —0.8 P.F.—2450 amps—525 PSI—850°TT—8145 RPM—11-stage geared 8145/1200—type FN4 — 3½" steam inlet. Unit will deliver full power at 440 lbs & 760°TT. OAL 16' 3-3/8"—OAW 6'6"—OAH 7'5¼"—wt. 36000 lbs. Almost equal to new. Very little use. With ABS or Lloyds.

G.E. 600 KW GEARED TURBO GENERATORS

2 

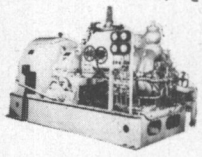
450/3/60/1200 RPM — 961 amps — type ATI — 0.8 PF. TURBINE: FSN-FN-20 6-stage—525 lbs/825°F — superheat 355°/371°F. GEAR: 10033/1200 — RPM 10033 — total—6390 lbs. steam/hr. steam flow.

G.E. 400 KW TURBO GENERATORS

3 

450/3/60/1200—0.8 PF—641 amps. TURBINE: 6-stage — 10059 RPM—525 lbs/825°TT — type GE 618N. Steam rate 5100 lbs/hr. — OAL 10' 10½" — OAW 4' 10½" — OAH 5' 5¼" — wt. 14,855 lbs.

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

4 

400 KW (500 KVA) — 0.8 PF — 1200 RPM — 450/3/60. TURBINE: 585 lbs—840°TT—28½" vacuum—9018 RPM—serial 10A4462-3 & 10A4462-4. GEAR: 9018/1200 RPM. A.C. GENERATOR: 500 KVA — 400 KW—450 volts—641 amps—0.8 PF — 3-phase 60-cycle — 1200 RPM — CR 40° — excitation amps 41 — excitation voltage 120. Instruction book 5442. Switchgear available.

UNUSED WESTINGHOUSE 60 KW 120 VDC M-20-EH

5 

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

UNUSED 500 KW DELAVAL-WESTINGHOUSE GEARED TURBO GENERATOR

6 

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

TURBINES & ROTORS

BETH-SPARROWS POINT, QUINCY HULLS

7
- 1 HP Turbine or rotor — Bethlehem
- 1 400 KW Stator only — Westinghouse
- 1 HP turbine casing only — Bethlehem
- 1 Complete Westinghouse 400 KW turbo generator set
- 1 Forced draft motor fan
- 1 Anchor windlass — 2 11/16"
- Steering gear motors — 15 HP
- Forced draft fan impeller

WESTINGHOUSE C-25 CARGO PUMP TURBINE ROTOR
VICTORY-AP2 MAIN PROPULSION

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

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

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

8500 HP G.E. — C-3 OR VICTORY

10 H.P. — 8-stage — 6159 RPM — serial 62043
L.P. — 8-stage — 3509 RPM — serial 62042
G.E.I. 16263

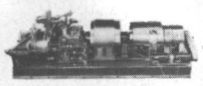
VICTORY SHIP AUXILIARY TURBO GENERATOR SET ROTORS

11 300 KW 5965 RPM JOSHUA HENDY

Turbine — 3H-69	Gear — 52269
Turbine — 3H-52	Gear — 52252
Turbine — 3H-62	Gear — 52262

ALSO WESTINGHOUSE 2A & 5A SERIES

— FOR T-2 VESSELS —

12 

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

538 KW WESTINGHOUSE T-2 AUXILIARY GENERATOR — COMPLETE

13 TURBINE: 538 KW @ 5010 RPM — 438 PSIG — 750°TT — 28½" vacuum. GEAR: 5010/1200 RPM. A.C. GENERATOR: 400 KW—450/3/60/1200—0.8 PF. DC EXCITER: 32.5 KW — 120 volts (variable voltage) — shunt — 4-pole — DC excitation 5 KW. ALWAYS WELL MAINTAINED BY MAJOR OIL CO.

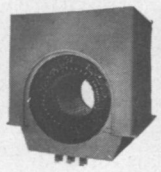
T-2 UNUSED G.E. MAIN PROPULSION STEAM TURBINE WITH ROTOR

14 10-Stage — 435# — 720°TT — turbine complete with rotor — serial #109166 — 4925/5400 KW — 3600/3720 RPM — 28.5" vacuum.

WESTINGHOUSE MAIN PROPULSION STEAM TURBINE WITH ROTOR
EX-CHEVRON VESSEL "MACGAREGILL"

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

UNUSED G.E. MAIN PROPULSION STATOR

16 

Type ATB-2—serial #6978272. 2300/2370 volts — 60/62 cycles — 3-phase — 3600/3720 RPM — armature amps 1237/1315 — 4925/5400 KW — 1.0 PF.
Westinghouse stator — from Ex "Pecos"

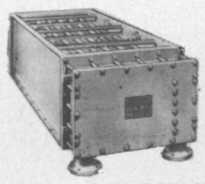
WESTINGHOUSE 538 KW AUX. GENERATOR EXCITER ARMATURE

17 

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

18 538 KW WESTINGHOUSE AUXILIARY TURBINE ROTORS

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

19 



Reconditioned — with A.B.S. Units all ready to ship.
Also G.E. Main Generator Coolers

G.E. 525 KW AUX. GENERATOR EXCITER ARMATURE

20 

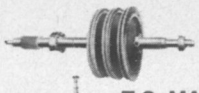
75-55 KW

NEW STYLE AMPLIDYNE

21 

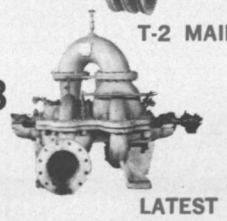
5LY148A2 — type A.M. — frame 605

AUXILIARY GENERATOR ROTORS

22 

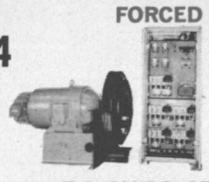
G.E. aux. generator rotors — DORV-325M — for 525 KW turbo generator sets

T-2 MAIN CARGO PUMPS

23 

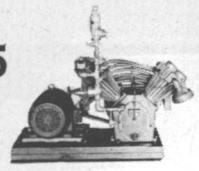
Ingersoll-Rand 6GT — 2-stage — bronze — 2000 GPM — 280' head

LATEST DESIGN 5-SPEED FORCED DRAFT FAN MOTORS

24 

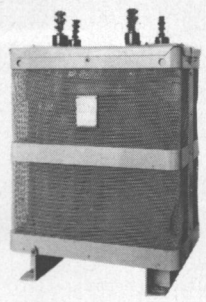
G.E. Model 5M505FE-1 — frame 5055—type M—440/3/60 — serial S.E.6731807. Controller available. (Complete with fan impeller)

T-2 SHIPS SERVICE AIR COMPRESSORS

25 

Worthington—5½x3½x3½ — VA2 — 20 C.F.M. — 100 lbs.—5 H.P. Motors—440/3/60 — 1750 RPM.

WESTINGHOUSE DRY TYPE T-2 CARGO PUMP TRANSFORMERS

26 

200 KVA — single phase — 60 cycle 2300/450 volts—weight 3720 lbs. each. 4 available.

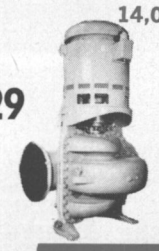
G.E. PYRONOL OIL COOLED TRANSFORMERS

27 200 KVA — single phase — 60 cycles — 2300/450 volts — 3 available.

MISCELLANEOUS DRY-TYPE TRANSFORMERS

28 Lighting Transformers—15 KW— 450/120 volts
Galley Power Transformers—15 KW—450/220 volts

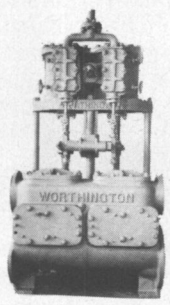
INGERSOLL-RAND 14,000 GPM MAIN CIRCULATOR

29 

14,000 GPM @ 25' head — model 24UCM — bronze — with 125 HP 440/3/60 580 RPM motor. 26" suction — 24" discharge. Can furnish with Westinghouse type CS frame B-876C or GE type KF vertical motors.

PUMPS

BRONZE T-2 TANKER STRIPPING PUMPS

30 

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

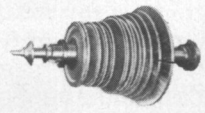
31 WESTINGHOUSE 200 H.P. CARGO PUMP MOTORS

440/3/60 1750 RPM — 40°

MISSION TANKER T2SEA2 CIRCULATING PUMP MOTOR

32 150 HP — 440/3/60/590 RPM. Frame 6335 — type KF — 204 amps

T-2 MAIN ROTOR

33 

LARGE G.E. MAIN PROPULSION SCHENECTADY TURBINE ROTOR

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

T-2 MISCELLANEOUS, PUMPS ETC.

34 10 HP Labour Self-Priming Bilge Pumps • Rudder 13½" Rudder Stocks • Main Injection 3-Way Valve Main Condensate Pumps • Fuel Oil Service Pumps Magnablast Breaker • 1 Set New Bull Gear & Pinion for G.E. 525 K.W. Diesel Gen Model S-162 • 32", 24", 15" Rubber Expansion Joints • Mission Tanker Steering Gear Pumps

TURBINE FIRE PUMPS — BRONZE

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



THE BOST

313 E. BALTIMO

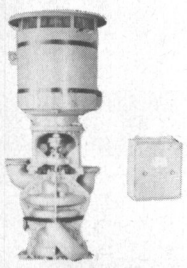
Main Office: (301) 5

NEW BLACKMER FUEL OIL TRANSFER PUMP

36



Rotary — 50 GPM — 50 lbs. — 2″ — 5 HP — 440/3/60 — with starter & spares

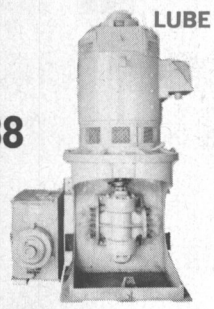


UNUSED BRONZE FEED-WATER BOOSTER PUMPS

37

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

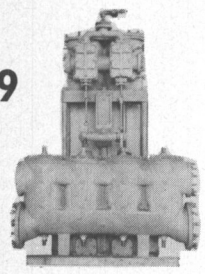
LUBE OIL SERVICE PUMP



38

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

WORTHINGTON 16″x14″x18″ VERTICAL DUPLEX STRIPPING PUMP



39

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

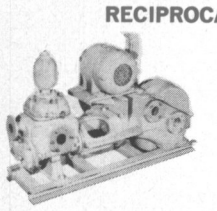
NEW WORTHINGTON VERTICAL SUBMERSIBLE BILGE PUMP



40

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

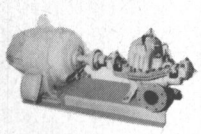
MOTOR-DRIVEN GARDNER-DENVER RECIPROCATING BILGE PUMP



41

50 GPM — 150 PSI — Model ALAXE — serial #106335. 3¾″ bore—4″ stroke—2½″ suction — 2″ discharge. 51″ long — 21″ wide — 21″ high —weight 750 lbs. MOTOR: Diehl — 2.5 HP — 440/3/60 — 1750 RPM — 3.53 amps.

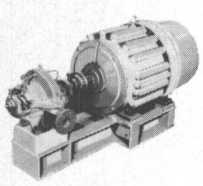
GOULD FIRE AND BILGE PUMP



42

Ex-LST — horizontal centrifugal—bronze—4″ suction—3″ discharge—250 GPM @ 100 PSI — 2200 RPM. MOTOR: 30 HP — 230 VDC with magnetic starter.

AURORA HEAVY DUTY BRONZE FIRE SERVICE PUMP



43

Single stage — 2½″ suction — 2″ discharge. 3000 RPM — 250 GPM. 100 lb. head. Impeller diameter 9½″. MOTOR: Air cooled heavy duty 25 HP Reliance T type ON-2S-2½ 230 VDC—110 amps —stab. shunt.

ON METALS CO.

RE ST. • BALTIMORE, MD. 21202

539-1900 Marine Dept.: (301) 752-1077

DIESEL GENERATOR SETS

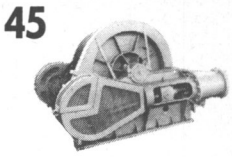
410 KW ENTERPRISE DIESEL GENERATOR SET

44

Enterprise DSG-6 6-cylinder diesel engine driving Westinghouse generator. 250 volts DC — 1640 amps — 650 RPM — shunt wound.

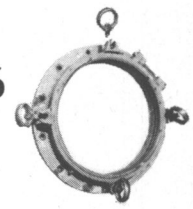
AUTOMATIC TENSIONING 12X14 STEAM WINCH

45



American Engineering. Drum diameter 24″. Will stow 1500 ft of 1½″ in 8 layers. Capacity 1st layer: 20,000 lbs/100 FPM — 16,000 lbs/50 FPM. Drum width 2′ 6¾″. Steam inlet 3″—exhaust 4″. 8′ 4½″ wide over cylinders. Base 6′ x 6′ 3½″.

46



16″ BRASS PORTLIGHTS

15″ and 16″ brass portlights. 16″ portlights are 3-dog type.

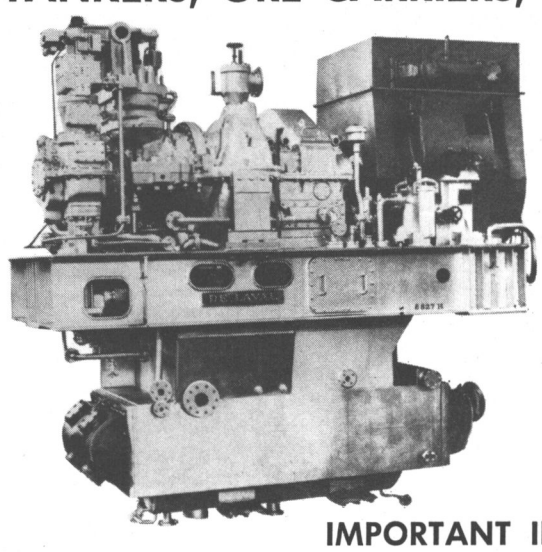
MISCELLANEOUS

47

IF YOU'RE GOING TO JUMBO-IZE YOU CAN ECONOMIZE WITH THESE

ALLIS-CHALMERS — DELAVAL 1000 KW GEARED MARINE TURBO-GENERATORS

If you are contemplating the new construction of TANKERS, ORE CARRIERS, CONTAINER VESSELS, ETC.



YOU CAN SAVE THOUSANDS OF DOLLARS

with these modern, practically new units — built to highest Navy standards. Send for our free descriptive brochure. You'll be glad you did.... and money ahead!

IMPORTANT INFORMATION

DELAVAL TURBINE: 1442 HP — 10019 RPM — Class GJ-N — 9-stage — 10,000 RPM — 1050 PSI — 950°TT — condensing steam rate 10.30 lbs. Typical serial number 652468. DELAVAL DOUBLE HELICAL GEAR: 10000/1200 RPM—Allis-Chalmers—1000 KW—450 volts—3-phase —60 cycle—1200 RPM—0.8 PF—static excitation—totally enclosed air-to-water cooling—temperature rise: Stator 130°C—Rotor 110°C—class H insulation—typical serial number 160615 —type M.A.K.G. Complete with 525 sq.ft. condenser—190 lbs/hr air ejector—oil coolers—strainer—piping & valves—generator switchgear—static excitation control—voltage regulator. Total weight of unit 40,300 lbs. OAL 12′ 9″—OAW 6′. Turbo-generator height 5′ 8″—total height of turbo-generator & condenser 12′ 8″. UNITS IN EQUAL-TO-NEW CONDITION. Originally designed for DLG Guided Missile Frigate Program. Installed only about 2 years, then removed and carefully re-boxed by U.S.N. at Bath Iron Works 1964-65. Navy installed larger units due to increased load requirements.

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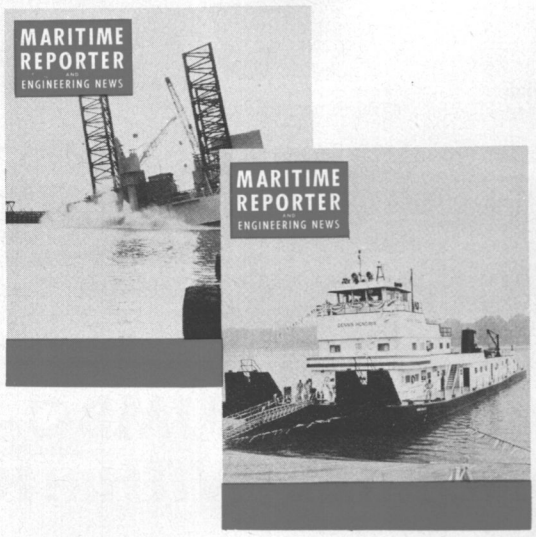

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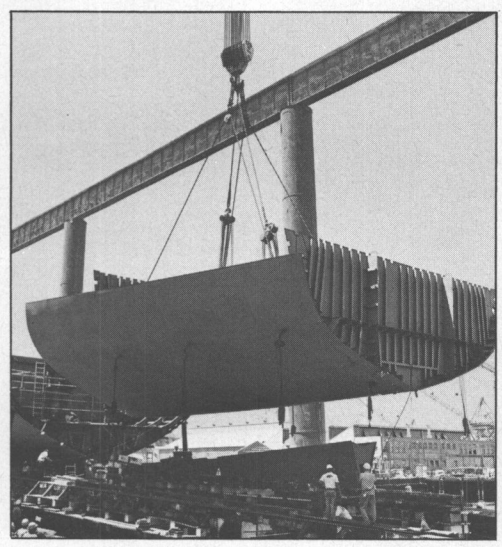
OFFSHORE DRILLING



GREAT LAKES



SHIPYARDS



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SHIPBUILDING, BOATBUILDING, AND REPAIR COMPANIES
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marine areas...with a requested circulation to thousands more than than any other marine

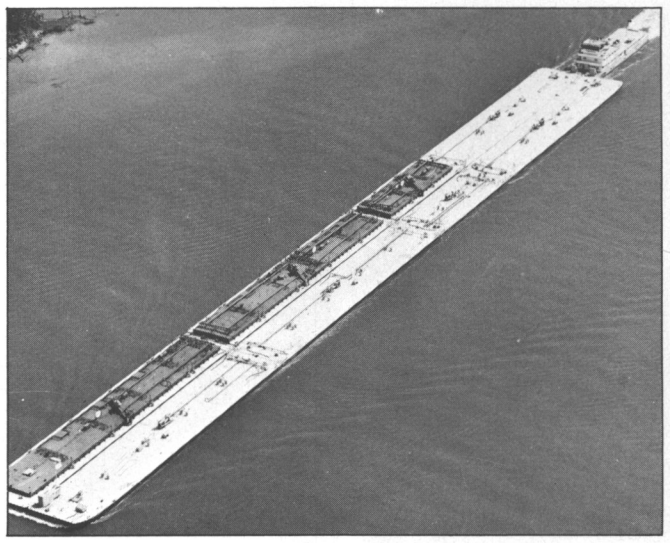
OCEAN



HARBORS



INLAND WATERWAYS



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LARGEST U.S. REQUESTED CIRCULATION TO BUYERS — Throughout the entire United States... MARITIME REPORTER is requested by thousands more shoreside buyers than *any* other U.S. marine magazine.

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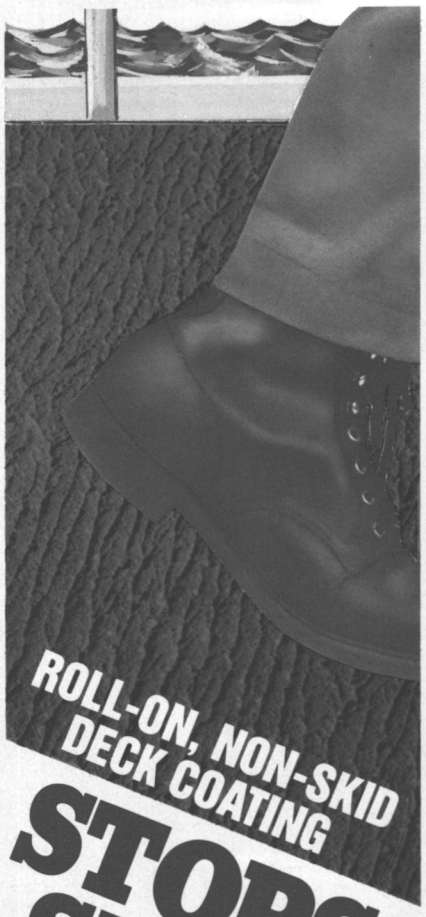
MARITIME REPORTER AND ENGINEERING NEWS



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Port Everglades To Install 30-Ton Paceco Gantry Crane

The Federal Maritime Commission has approved an agreement between the Port Everglades Authority and Sea-Land Service, Inc. to install the area's first gantry container crane. A joint operation, the Florida port authority will spend $2 million on constructing 1,500 feet of crane rail, and Sea-Land will purchase a new $2.6-million, 30-ton gantry. The new crane, built by Paceco, will service the south Florida port's berths 16, 17 and 18. It is scheduled to arrive this month, and should be in place by mid-1979.

Under terms of the 20-year lease signed by both parties, Sea-Land will operate the crane, and will have preferential rights for two vessels per week in regularly scheduled service "providing Port Everglades is given 72 hours' notice," according to a spokeswoman for the port authority.

When the new crane is in place, Port Everglades will be the first container port in south Florida, the spokeswoman added.

Marine And Steel Fabrication Covered In New Wiley Brochure

Wiley Manufacturing, Port Deposit, Md., has just released a new full-color capabilities brochure, "Wiley is there," outlining the company's fabrication capacities for the marine, shipbuilding and construction industries.

The 16-page brochure illustrates examples of Wiley seagoing tugs and barges, harbor dredges, floating cranes and construction equipment, subway and highway tunnel tubes, hull sections, cargo hatch covers, and other pieces of marine equipment and fabrications now in use around the world.

A unit of AMCA International, Wiley Manufacturing's advanced design and assembly methods have produced work for many naval architects, stevedoring firms, public utilities, construction companies, transportation authorities, petroleum companies, federal and state governments, and engineering concerns internationally. Support engineering is available in-house at Wiley.

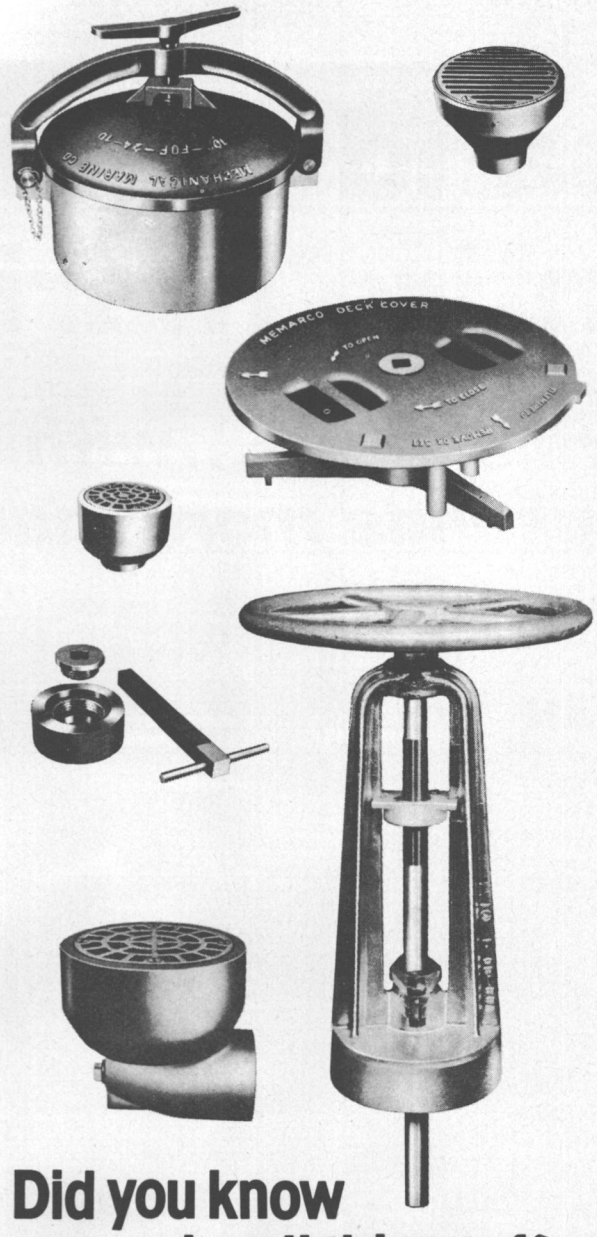
For copies of "Wiley is there," contact **Thomas L. Coudon,** Wiley Manufacturing, Suite 200, Stockton Building, University Office Plaza, Newark, Del. 19702.

Omega Marine Completes Fire-Rescue Boat

Omega Marine has completed construction of an all-welded aluminum fire-rescue boat to be delivered to Baltimore County, Md. Designed by **Robert E. Zitner,** president of Omega Marine, the boat is powered by two 300-hp Stewart and Stevenson GM Detroit Diesel engines with Borg Warner 2:1 reduction gear. The boat will be capable of speeds in excess of 22 knots.

The firefighting system, powered by a separate GM4-53 Detroit Diesel engine, is rated at 1,000 gpm at 150 psi. An Akron "Model 507" fire monitor is located on the forward deck, with a clear 270° arc of operation. The fully enclosed cabin is heated by a Smith-Wobasto Diesel fuel-fired heater for year-round operation in extreme northern climates. A second operator's station with instrumentation and controls is located on the protected flybridge.

Omega Marine designs and builds a full line of workboats, utility boats, crewboats and patrol craft. For further information, write Omega Marine, 135 Greenwood Avenue, West Palm Beach, Fla. 33405.



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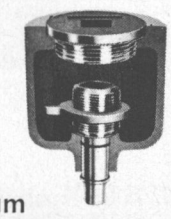

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Chevron U.S.A. To Start Drilling Test Well Offshore California

Chevron U.S.A., 555 Market Street, San Francisco, Calif. 94105, has announced that a newly completed drilling ship, the Glomar Atlantic, soon will begin drilling an industry-sponsored stratigraphic test well for geological information near the western end of the Santa Barbara Channel.

The vessel, a sistership to the Glomar Pacific, which is currently drilling in the Baltimore Canyon off the New Jersey coast, was recently delivered by Global Marine Inc., the owner, under a three-year contract.

Chevron announced it will begin drilling a Continental Offshore Stratigraphic Test (COST) well 18 miles offshore Point Conception. Fourteen oil and gas companies will share in the cost of the drilling, estimated at $4.5 million.

The COST well will be drilled in 1,400 feet of water and will require an estimated 65 days to reach 12,000 feet below the seabed, Chevron officials said.

The Glomar Atlantic has dynamic positioning capability which permits it to hold position over a drill site without anchors, through the use of computer-controlled thrusters, Chevron said. The vessel is 450 feet in length, has a fully loaded displacement of 14,765 tons, and is capable of drilling in water depths exceeding 2,000 feet.

National Safety Council Marine Section Elects Capt. S. Fraser Sammis

Capt. **S. Fraser Sammis,** president of the National Cargo Bureau, New York, N.Y., and a longtime leader in ship industry safety, has been elected general chairman of the Marine Section of the National Safety Council for the coming year. He succeeds Capt. **Lars N. Pedersen** as chief executive of the largest organization in the United States marine industry engaged in reducing accidents and improving the health of its workers.

According to an announcement by the Executive Committee of the Marine Section, **Elizabeth Whitaker Tezza,** secretary-treasurer of Palmetto Shipping & Stevedoring Co., Inc., Charleston, S.C., was also elected as deputy general chairman.

In addition, the organization announced the election of three vice-general chairmen and a secretary for the coming year. They are: Capt. **Merle L. Harbourt,** American Waterway Operators of New Orleans, La.; **James L. Linane,** vice president of Johnson & Higgins, New York, N.Y.; and **Edward F. McIntyre,** director of Safety and Loss Prevention, Farrell Lines Incorporated of New York, N.Y. Capt. **Hugh M. Stephens,** president of Ships' Operational Safety, Inc., Port Washington Harbor, N.Y., was elected secretary.

In reporting its new slate of officers, Marine Section also announced that Captain **Pedersen** will take over as chairman of its Advisory Committee and the Nominating Committee.

Captain **Sammis** has served as president of National Cargo Bureau for the past four years, and has been with the bureau for 21 years in a variety of positions. These included the post of chief surveyor, a role he handled for three years prior to his election as president in 1974.

The election of new officers of the 1978-79 year was among highlights of the three-day convention and seminar that the Marine Section held in the Palmer House Hotel in Chicago, Ill. The group represents virtually all elements of maritime industry activity in the U.S., including stevedoring and marine terminal operations, shipbuilding and repair, vessel operations of oceangoing and inland ship companies, barging and towing, fisheries, and offshore oil activity. The Marine Section is one of 28 industrial groups comprising the National Safety Council, all of which met at the convention.



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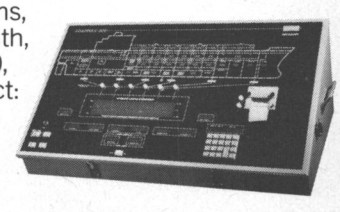

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American-Flag Ship Operators Call For Policy That Works

Calling for a "national shipping policy that really works," the Council of American-Flag Ship Operators (CASO) has issued a strong statement supporting most of the provisions of H.R.11422, House Merchant Marine Committee Chairman **John M. Murphy's** bill which would substantially change the maritime regulatory laws of this country.

W.J. Amoss Jr., president of Lykes Bros. Steamship Co. and chairman of the board of CASO, the national association of American-flag lines operators, identified the multiple problems now facing the industry. He attributed the overtonnaging situation to "our singular national policy of maintaining wide-open access to the trade routes and foreign commerce of the U.S. for literally any and all international carriers wishing to enter the market." This, said Mr. **Amoss**, has led to the grim situation where private companies must try to compete with state-controlled carriers and government treasuries determined to buy their way into world shipping.

Mr. **Amoss** cited the Executive Department's longstanding failure to reckon with the realities of shipping practice abroad, and foreign countries' resentment of U.S. unilateral regulation of an international industry. Stressing the industry's concern with the erosion of Congressional intent as expressed in the 1916 Shipping Act, he urged the Congress and the Administration to persevere with the reexamination of basic policy now in progress. Mr. **Amoss** called for a "new declaration of principle and law" to resolve recent conflicts that are jeopardizing the future of the American merchant marine.



W.J. Amoss Jr.

Reaffirming CASO's belief in the conference system as the best solution to the industry's problems, Mr. **Amoss** pledged the association's efforts to foster the development of a code of conference conduct for U.S. trades. This code would "give public assurance to our customers and to concerned governments of the standards by which we intend conference conduct and practice to be governed." He charged that our current system of law and institutional approach has kept shippers and carriers polarized over their inevitable differences, instead of finding ways "to work jointly toward a goal of trade expansion from which they and the country will profit."

In a carefully detailed statement of position on the specific provisions of H.R.11422, CASO decisively declared the need for closed conferences, deferred rebates, or some other loyalty arrangement which would be "an improvement over the current dual rate system in its function as a tying device." He cited the need for some form of national shippers council that would embody "the principle of collective shipper-carrier consultation," and called for the extension of antitrust immunity to cover intermodal rate-making.

Mr. **Amoss** recommended against a mandatory right of independent action because it could be used by state-controlled carriers or others to destroy the conference system. Such a potentially disruptive and discriminatory device should be left as now for conferences to adopt on an optional basis, when it is necessary to meet competitive pressures. CASO is opposed to immediate effectuation of Section 15 agree-

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ments and, in the interest of stability in foreign commerce, recommended a reinforcement of Congressional intent to permit their more ready approval. Rather than turning to the government for arbitration of conference / shippers councils disputes, CASO would prefer the provision of "mutually acceptable commercial arbitration machinery."

The Council of American-Flag Ship Operators (CASO) was organized January 1, 1978, by eight U.S. liner companies who previously had been members of the Liner Council of the American Institute of Merchant Shipping (AIMS). **W.J. Amoss Jr.,** president of Lykes Bros. Steamship Co., Inc., was elected chairman of the board of directors and **James P. Horn,** senior vice president of Farrell Lines Incorporated, vice chairman. Other board members include **W.B. Seaton,** president of American President Lines, Ltd.; **Thomas J. Smith,** president of Farrell Lines Incorporated; **Robert E. O'Brien,** president and chief operating officer of Moore-McCormack Lines, Inc.; **Spyros S. Skouras,** chairman and chief executive officer of Prudential Lines, Inc.; **J.R. Dant,** president of States Steamship Company, and **Edward J. Heine Jr.,** president of United States Lines, Inc.

Early CASO emphasis is being placed on attempting to identify and implement workable solutions to problems such as the dumping of excess third-flag tonnage in the U.S. foreign trade, rebating, and other malpractices which are having a significant adverse effect on the U.S. merchant fleet. In addition, the Council will promote U.S.-flag shipping through close cooperation with shippers, government agencies, and various international organizations such as the International Chamber of Shipping and the Inter-governmental Maritime Consultative Organization.

CASO is primarily concerned with the promotion and maintenance of a United States merchant marine-owned, operated, built and manned by United States citizens. Membership in CASO is open to all owners and operators of U.S.-flag vessels in the foreign and domestic trades.

Charles Whitney Opens Offices In Louisiana

Charles Whitney has announced the start of his operations as an independent marine consultant and surveyor with offices at 3939 Veterans Boulevard, Room 220, Metairie, La. 70002. Mr. **Whitney** is well-known in New Orleans as a ship manager and superintendent engineer, having been associated with marine interests for a number of years in New Orleans as well as in other ports. He specializes in condition and damage surveys of dry cargo ships, barges and fixed structures; he also provides representation and consulting services for ship management, supervision of repair work and assistance with maintenance, insurance and other problems. Mr. **Whitney** is a graduate of the Massachusetts Institute of Technology in marine transportation, and is a registered professional engineer.

Raymond Donohue Named States Vice President

Raymond J. Donohue has been named a vice president of States Steamship Company, San Francisco, Calif. Mr. **Donohue,** a 10-year veteran at States Line, joined the company as director, Corporate Information Systems. In 1972, he was elected secretary-treasurer of the company, positions which he will continue to hold.

States Line, a major American-flag carrier, operates an independent ro/ro service to major ports in the Far East. Its fleet of four Maine-class ro/ro vessels and five Colorado-class vessels offer complete cargo shipping services from the Pacific Coast to ports throughout the Far East and Southeast Asia.

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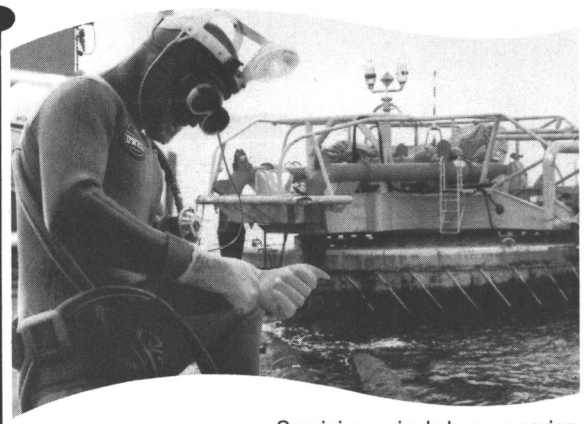

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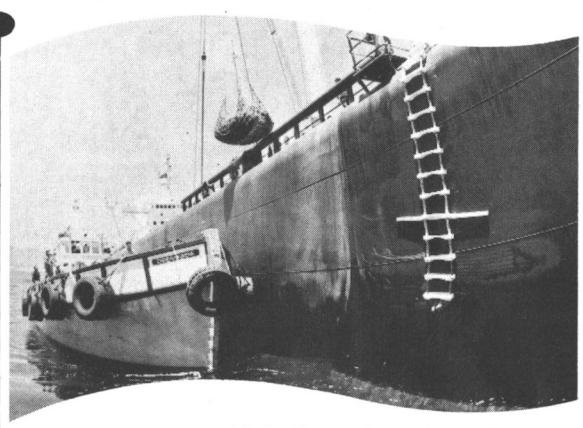

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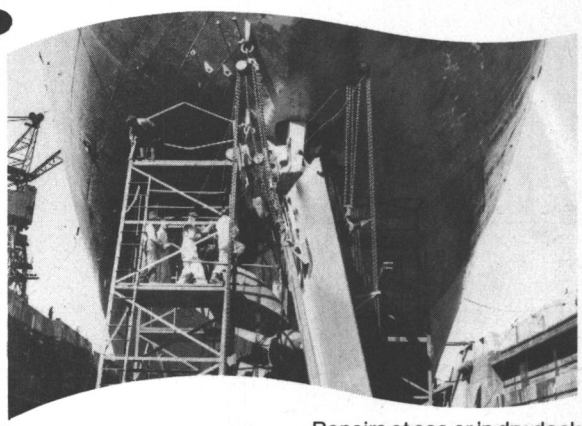

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Change Of Shareholding At A & P Appledore International

A & P Appledore International Ltd., the marine industry's services group, has been acquired by A & P Appledore (Holdings) Ltd., a company formed by the senior employees of the company.

The shares in A & P Appledore International Ltd. were in the main owned previously by London & Overseas Freighters Ltd., the U.K. shipping group and the liquidator of Court Line.



Left to right: **James Venus** (new chairman, A & P Appledore International Limited), **Charles Longbottom** (retiring chairman), and **Peter Nash,** managing director.

The company has, since its inception in 1971, built up a reputation as one of the world's leading groups of shipyard engineers. Its reputation was established by the package of services it provided in the development of Hyundai Shipyard.

Since then, A & P Appledore has operated in over 40 countries, assisting not only with shipyard development but also in stimulating British exports.

It has also been responsible for the design of and (in the case of the last two) the project management of Britain's latest shipyards at Sunderland Shipbuilders, Austin & Pickersgill and Cammell Laird. It has carried out a number of assignments for British shipbuilders.

Recently, A & P Appledore has provided the technology for the audit of all United States yards in a contract for the U.S. Maritime Administration. It is also carrying out a development study for the new multipurpose shipyard for the Suez Canal Authority.

Charles Longbottom, who has been chairman since the company was established, retires and is succeeded by **James Venus,** previously chairman of Appledore Shipbuilders. **Peter Nash** remains chief executive.

Mr. **Nash** said in London: "It gives us a real opportunity to develop and expand the company. We have recently expanded our traditional shipbuilding/repair base to offshore and heavy industrial engineering. This, however, will give the process terrific impetus."

Rudder Bushings Brochure From Marine Iron Works

Northwest Marine Iron Works' Shop Division in Portland, Ore., has announced the availability of a rudder bushings brochure.

The rudder bushings are custom-made from Micarta or Spauldite. Turnaround time on the rudder bushings is 24-36 hours, according to **Dick Semke,** Shop Division general manager.

A copy of the brochure can be obtained by writing to **Dick Semke,** Northwest Marine Iron Works, P.O. Box 3109, Portland, Ore. 97208.

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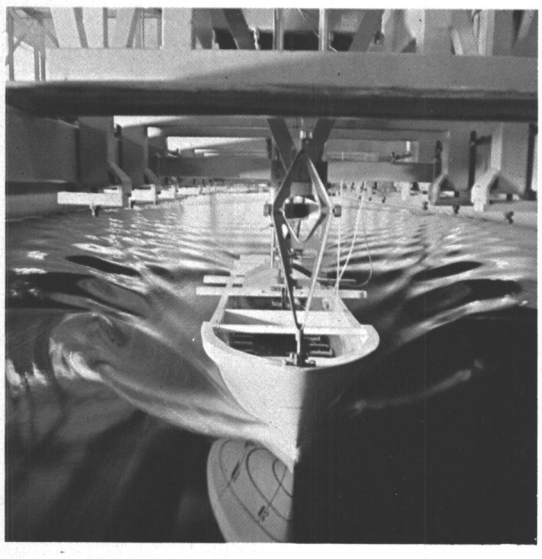



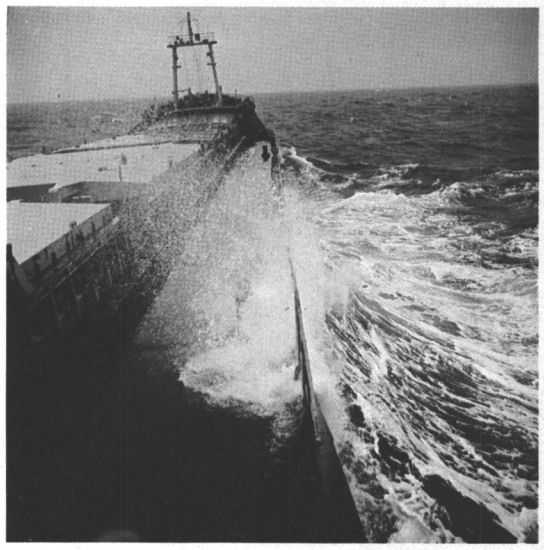

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Schoolship Reunion Hears Peter Stanford On National Ship Trust

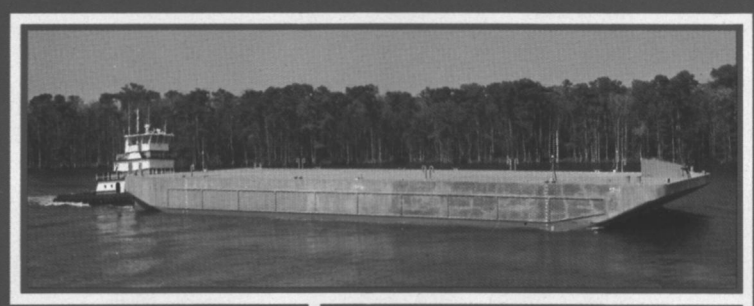
The Pennsylvania Schoolship Association's 24th Annual Muster (reunion) was held at the Ben Franklin Hotel in Philadelphia on October 14, 1978. The Association represents graduates of the former Pennsylvania Maritime Academy, closed since 1947, but who have actively carried on the lore and traditions of Pennsylvania's former nautical school.

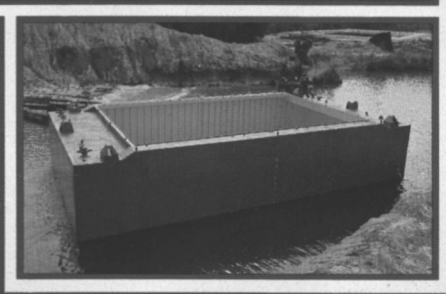
The Association had as featured speaker **Peter Stanford,** president of the National Maritime Historical Society. He spoke on the development and establishment of the National Ship Trust, of which he is a co-founder. The Historical Society was originally a volunteer effort to bring together groups interested in preserving the maritime heritage of America. It has since been joined by the leading maritime museums in the country. The National Ship Trust was recently organized to provide the country with a national policy in preserving its maritime "roots."

Mr. **Stanford** was one of the founders of New York's South Street Seaport Museum, and was its president for 10 years prior to taking the helm of the Historical Society. He is also the managing editor of the Society's outstanding publication, "Sea History."

The Pennsylvania Schoolship Association was formed in 1955 to preserve the venerable history of the state's former maritime training program. Five schoolships were utilized in the period from 1890 to 1947, to provide structured training to young men from Pennsylvania, to become deck or engine officers on American merchant marine vessels. The school operated under the aegis of the state, until it was closed down. Six such schools still function on each of the U.S. Seaboards, with a Federal Academy located at Kings Point, N.Y.

Persons interested in subscribing to the publication "Sea History" can write to **Peter Stanford,** National Maritime Historical Society, 2 Fulton Street, Brooklyn, N.Y. 11201.





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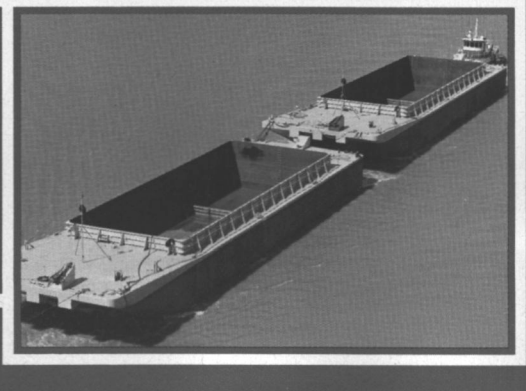

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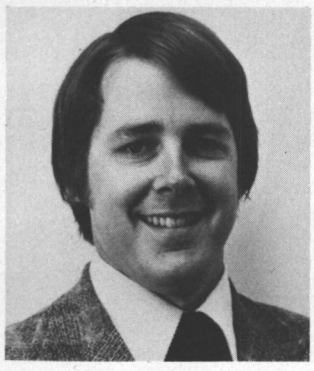
National Supply Names Kelley Sales Engineer For Offshore Platforms

National Supply Company, major oilfield equipment manufacturer, has appointed **David D. Kelley** to a newly created position of sales engineer-Offshore Platform Coordination.



David D. Kelley

Mr. **Kelley** is responsible for liaison with production platform designers in developing increased applications for National Supply products. In the function, he succeeds **Ronald L. Vingoe,** recently promoted to assistant to the vice president-Administration. Creation of the platform sales position formalizes activity that had been carried out by Mr. **Vingoe** on special assignment over the past two years.

Mr. **Kelley** transfers to National Supply from the Houston, Texas, steel works of its parent company, Armco Inc. He gained a broad understanding of offshore platform requirements and operations while helping supply Armco structural and plate steels for offshore construction.

Mr. **Kelley** has his office at National Supply headquarters in Houston. He reports to **P.J. Trepanier,** vice president-Administration.

He holds a B.S. degree in metallurgical engineering from the University of Texas at El Paso, and an MBA degree in finance from the University of Houston.



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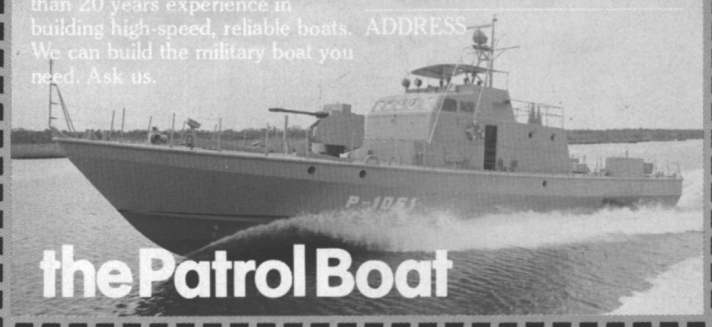

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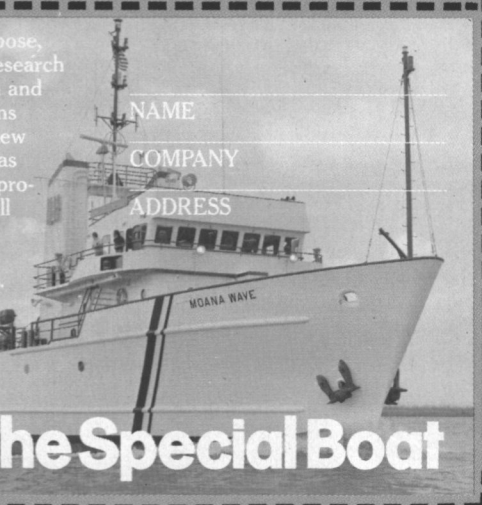

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Hawaii, Lockheed, Dillingham Announce They Will Build, Operate Ocean-Fueled Energy Pilot Plant





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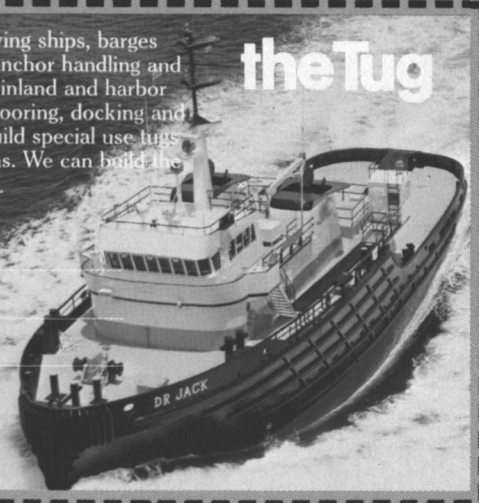

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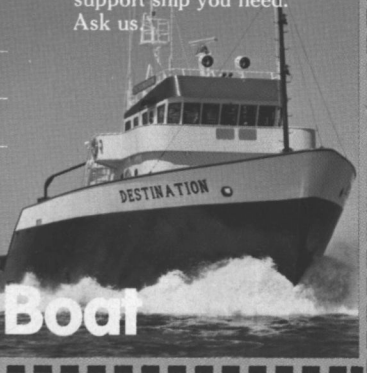

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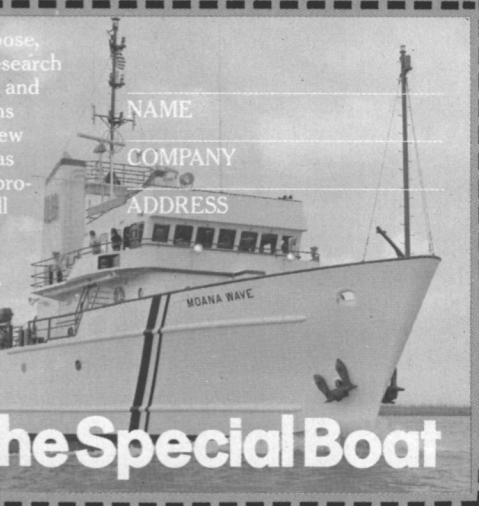

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ITT Decca Conducts Radar School In Florida

A five-day course on large and solid-state Decca Radars, at ITT Decca Marine's Palm Coast, Fla., headquarters, is being offered to IDM Dealer Technicians. Seven separate week-long sessions are providing advanced information on the Decca 12- and 16-inch true motion and anticollision radar consoles with 25- and 30-kilowatt transmitters.

One of the first classes recently successfully completed the course on big ship (from ocean liners to tugboats) radars, autopilots and small boat radars.

ITT Decca Marine has provided the students with beachside lodging, meals and a mid-week class dinner party at Daytona Beach's famous Park's Seafood Restaurant.

The Radar School is being instructed by **Anthony (Tony) Brooks,** training manager of Decca Service Training School in Croyden, England.

Dravo Corp. Appoints Leonard Van Houten

Leonard Van Houten has been appointed general marketing manager of Dravo Corporation's Engineering Construction Group. In his new position, Mr. **Van Houten** will be responsible for coordinating commercial activities among the Group's six divisions, as well as promoting marketing efforts overseas.

As chief executive of Van Houten Associates from its founding in 1965 until its acquisition by Dravo in 1976, Mr. **Van Houten** directed the planning and execution of major projects worldwide. He was formerly manager of development for Dravo's Civil, Mining & Marine Division.

A civil engineering graduate with a master's degree from Rensselaer Polytechnic Institute, Mr. **Van Houten** is a member of the AIME Society of Petroleum Engineers, the American Society of Civil Engineers, the National Society of Professional Engineers, The Moles, and the U.S. Committee on Large Dams.

Headquartered in Pittsburgh, Pa., Dravo is a diversified engineering, construction and manufacturing firm involved in minerals and metals processing, mining, heavy construction, power generation, bulk materials handling, shipbuilding and barge transportation.

USCG Incorporates Data On 60,000 Ships From Lloyd's Into Marine Safety Information System

The United States Coast Guard has recently signed a contract with Lloyd's Register of Shipping/Lloyd's of London Press Ltd. for the supply, on a quarterly basis, of magnetic tapes containing data from the Register Book data base. In consequence, the details of over 60,000 merchant ships on the Register Book file have been incorporated into the U.S. marine safety information system developed by the USCG.

The marine safety information system is used to provide analytical and statistical information, as well as assisting the Coast Guard in arranging their surveying activities.

As the LR number of a vessel remains the same throughout its life, regardless of changes to its name, flag and ownership, it has been adopted by the USCG as the primary method of identification, although the marine safety information system can be accessed by using a vessel's name, flag and call sign.

Marine Insurance Seminar To Be Held In Jacksonville, Florida

A seminar on "Marine Insurance" will be held in the Hotel Hilton, Jacksonville, Fla., on December 6, 1978. Maritime industry executives in Southeastern United States are invited to attend the one-day session.

The Marine Insurance Seminar will be sponsored jointly by Florida Junior College, Marsh & McLennan, and The Propeller Club of the United States, Port of Jacksonville.

Chester D. Howarth, director of Mid-management and Distributive Education, Florida Junior College, **Robert W. Stickler,** vice president, Marsh & McLennan, Jacksonville, and **Michael C. Kenney,** president, Jacksonville Propeller Club, are co-chairmen of the seminar.

Mr. **Howarth** said: "We have long felt because of the concentration of maritime industry here in Jacksonville and in the Southeast United States that a program on marine insurance has long been needed. Therefore, with the cooperation of Mr. **Stickler** and Mr. **Kenney,** we are able to arrange this program of information for the maritime community."

Leading experts from Marsh and McLennan will discuss various aspects of marine insurance from design to construction, and the carrying of crews and cargoes.

Registration may be made by sending a check for $20 to Prof. **Paul A. Halloran,** Florida Junior College, Kent Campus, Building No. 1, Jacksonville, Fla. 32205. The registration fee includes coffee hour, luncheon, and the series of talks.

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Gregor G. Peterson Named President Genstar Pacific Corp.

Genstar Pacific Corporation of San Francisco, Calif., a Genstar Limited company, has announced the appointment of **Gregor G. Peterson** as president and chief executive officer of the company. **H.D. Edelen,** formerly president, now becomes chairman.

Mr. **Peterson** was president of Sutter Hill Company of Palo Alto, a shopping center and venture capital operation when it was acquired by Genstar Limited in 1970. In 1975, he left the company to join the faculty of the Stanford University Graduate School of Business in Stanford, Calif., and to pursue other business interests.

As president and chief executive officer of Genstar Pacific Corporation, Mr. **Peterson** will be responsible for the company's financial services operations, which include First American Title Guaranty Company, Oakland; Genstar Pacific Investments, San Francisco; Broadmoor Ventures, Irvine, and Genstar's thrift and loan companies in the Western United States. He will also be responsible for the operations of Sutter Hill Limited of Palo Alto.

Mr. **Peterson** is a director of First American Financial, First American Title Insurance Company, Chelsea Computer Systems, Sierra Chemical Company, Hogan Associates, and SeaTek Corporation.

Genstar Limited (NYSE) is a diversified operating company which manufactures cement, building materials, chemicals and fertilizers, and is engaged in land development, housing, commercial property development and management, construction, tug and barge transportation, shipbuilding and ship repairs, financial services, and venture capital investment.

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Below: Aerial view of Keppel Shipyard



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Keppel's original drydock capacity of 40,000 DWT is now enhanced by its newest 150,000 DWT drydock at Tuas Yard, which has deep water berths capable of accommodating alongside repairs of up to 250,000 DWT.

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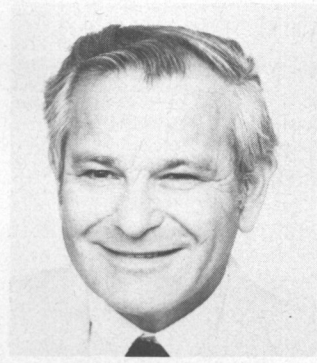
Butterworth Systems Names Paul Paraskevas Technology Advisor



Paul T. Paraskevas

Paul T. Paraskevas has been appointed technology advisor/research and development coordinator for the Planning Department of Butterworth Systems Inc. (BSI), Florham Park, N.J.

The appointment was made by **A.J. Kelly,** president of the international company which manufactures equipment for tank cleaning, underwater hull cleaning, and oil/water separation.

In his new position, Mr. **Paraskevas** will be responsible for planning and overseeing the company's research and development program. Additionally, he will advise on technical aspects of potential new business areas for Butterworth Systems Inc.

Mr. **Paraskevas** brings to Butterworth Systems Inc. diverse experience in management and engineering from the positions he has held at Exxon International Company in their Tanker Operations, Purchasing, and R&D Divisions. Mr. **Paraskevas** has been with Exxon marine and refining affiliates since 1954.

A registered professional engineer, Mr. **Paraskevas** studied mechanical engineering at Rutgers University and received a master's degree from Newark College of Engineering. He is a member of the American Society of Mechanical Engineers.

Butterworth Systems Inc. is located at 224 Park Avenue, Box 352, Florham Park, N.J. 07932, and Butterworth Systems (UK) Ltd. at 445 Brighton Road, South Croydon, Surrey CR2 6EU, England.

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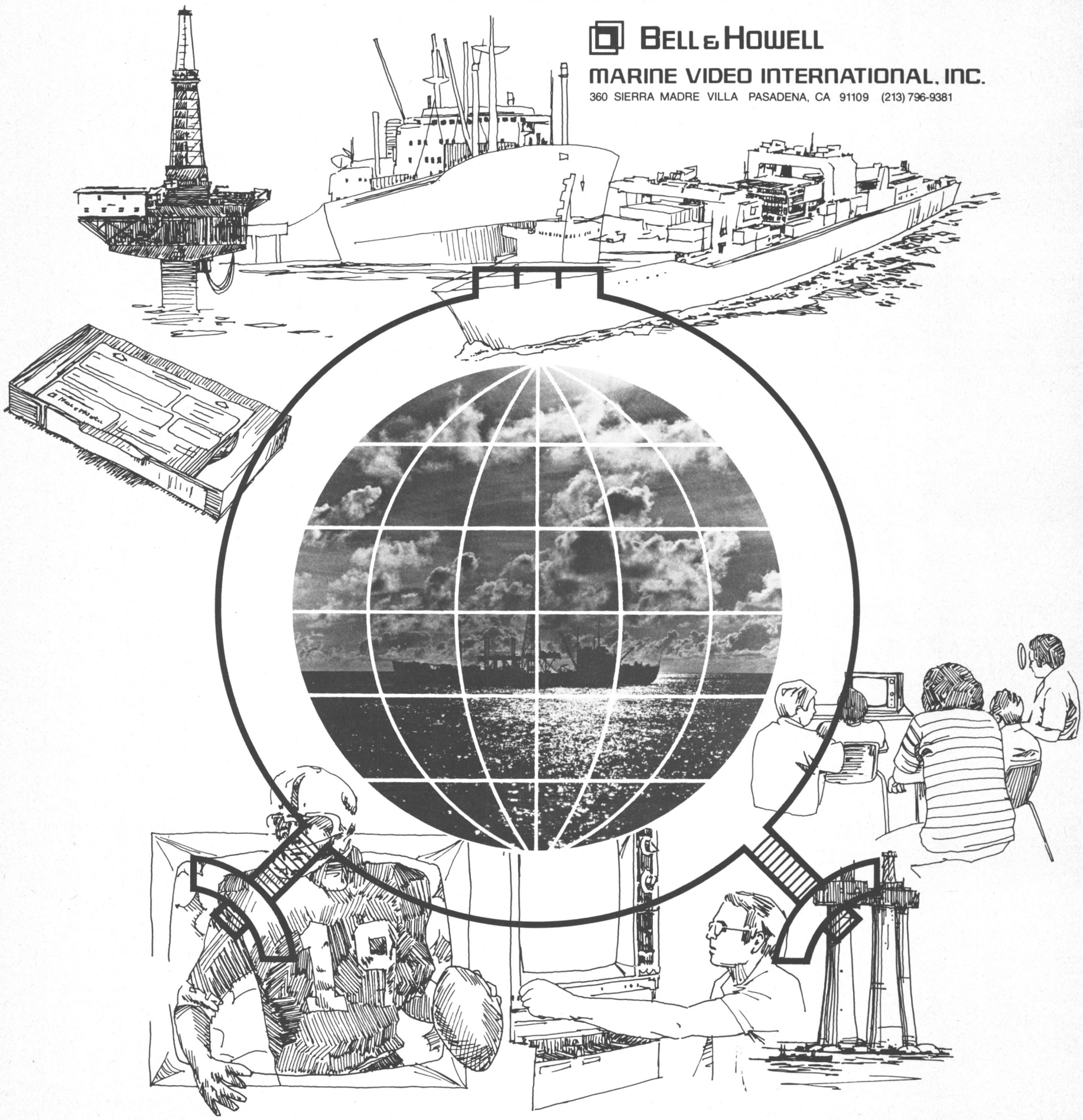



N.Y. PORT ENGINEERS MEET — The Society of Marine Port Engineers, New York, N.Y., Inc., met on September 20 at the Downtown Athletic Club. The topic discussed was "Today's Schoolship and Academy Graduates — Where to From Here," Phase II, with **Jose Femenia,** SUNY Maritime College, **G.T. Francis,** U.S. Merchant Marine Academy, and **Joseph H. Winer,** Marine Consultant, as speakers. Coordinator for the meeting was **James A. Johnson,** Steamco, Inc. Pictured above seated, left to right: Mr. **Femenia,** Mr. **Winer,** Mr. **Johnson** and Mr. **Francis**. Standing, left to right: **Russell F. Magna,** Northeast Marine Terminal Co., Society chaplain; **Thomas Jones Jr.,** Farrell Lines Incorporated, chairman, board of directors of the Society; **Louis V. Minett,** American Bureau of Shipping, Society president; **Edward English,** Atlantic Repair Co., Inc., secretary-treasurer of the Society, and **Thomas Young,** United States Lines, Society vice president.



Hawaii, Lockheed, Dillingham Announce They Will Build, Operate Ocean-Fueled Energy Pilot Plant



This artist's rendering shows the 50-kw ocean thermal energy conversion (OTEC) plant that the State of Hawaii, Lockheed Missiles & Space Co., and Dillingham Corporation will build and operate, beginning next spring. Fueled by ocean water temperature differences, it will be the first at-sea closed-cycle plant to generate usable amounts of power.

An electric-power generator floating on the Pacific Ocean and using warm surface water heated by solar radiation for fuel will begin test operations next spring. It will be the first at-sea closed-cycle Ocean Thermal Energy Conversion (OTEC) plant that will generate usable amounts of power.

The project, which involves the State of Hawaii, Lockheed Missiles & Space Co. of Sunnyvale, Calif., and Dillingham Corporation of Honolulu, will begin assembling the generating plant immediately, according to Hawaii Gov. **George R. Ariyoshi,** who announced the project.

The demonstration plant, referred to as a mini-OTEC, will be a scaled-down version of proposed huge sea-based generating plants. Governor **Ariyoshi** said the 50-kilowatt plant will demonstrate that OTEC technology is feasible. When scaled up, a 100-megawatt plant could provide for the electrical needs of a city of 100,000 persons.

Hawaii and the other participants announced in April that tentative agreement had been reached to begin preliminary engineering design of such a plant.

Lockheed's program manager for mini-OTEC, **Delbert N. Burwell,** said the plant would prove the feasibility of Ocean Thermal Energy Conversion as a non-polluting electrical power source. It could be an important milestone in Hawaii's search for energy independence and a key step in the national program to reduce dependence on foreign petroleum suppliers.

Mr. **Burwell** said the barge-mounted mini-OTEC plant will provide about 10 kilowatts of electric power above that needed for pumps and other operating equipment aboard. This net surplus power will be used to power test equipment on the barge. No electricity will be piped ashore.

OTEC makes use of a very large heat engine which uses the warm surface waters of the ocean as a heat source, and the cold water from the depths as a heat sink.

The warm surface water vaporizes a liquid, such as ammonia. Like steam, this gaseous, pressurized ammonia drives turbine-generators. The ammonia then is condensed to its liquid form by the cold ocean water pumped up from the depths, and this closed cycle continues.

The State of Hawaii will fund the half-mile-long pipe which will carry cold water from the depths to the surface OTEC plant, and will fund modification of a barge which will be used as the OTEC plant machinery platform.

Lockheed will design and build the OTEC powerplant which will operate with a closed-loop ammonia cycle.

Dillingham will modify and outfit the barge, assemble the system, and deploy the cold-water pipe and barge to the operating site, about one mile off of Ke-

ahole Point, adjacent to the island of Hawaii.

A major contributor to the project is Alfa-Laval of Sweden, acting through Energy Systems Division, Alfa-Laval Thermal, Inc., South Deerfield, Mass., one of its U.S.-based operations. Alfa-Laval is furnishing two titanium heat exchangers, major components of the mini-OTEC powerplant. The principal component subcontractor to Lockheed is Rotoflow Corp., Los Angeles, Calif., which is supplying the turbine-generator.

Dillingham, headquartered in Honolulu, is a diversified company, active in maritime, resources, construction and property. The company has been studying OTEC since 1975, concentrating on the construction and deployment aspects of OTEC plants. **Lloyd Jones** is manager of Energy Projects.

Lockheed Missiles & Space Company, a subsidiary of Lockheed Corporation, has been involved in ocean systems activities for more than two decades, beginning with development of the Navy's submarine-launched Fleet Ballistic Missiles (the Polaris, Poseidon, and now, still in development, the Trident). Lockheed recently announced another project involving three other companies, two Dutch and one American, to develop technology to mine mineral-bearing manganese nodules, found in abundance on the deep ocean floor.

Lockheed Petroleum Services, a Canadian subsidiary of Lockheed Corporation, has also developed and is now marketing an oil-well completion and production system for emplacement on the ocean floor. The system has been installed on wells in 350 feet of water in the Gulf of Mexico, and is also being installed in another oil field off the coast of Brazil.

Major components of the mini-OTEC system have been selected and are as follows:

HEAT EXCHANGERS — Designed and built by Energy Systems Division, Alfa-Laval Thermal, Inc., South Deerfield, Mass., both evaporator and condensor are titanium, plate-type heat exchangers. The capacities of the heat exchangers are capable of being easily increased simply by adding more titanium plates.

TURBINE-GENERATOR—Designed and built by Rotoflow Corporation, Los Angeles, the turbine-generator will be rated at 65 kw input with an ammonia flow rate of five pounds/second. Electrical output is 50 kw (e), three-phase 115-208V.

SEAWATER PUMPS — Axial-flow pumps of 20 horsepower each will deliver 3,300 gpm of both warm and cold seawater. The pumps will be mounted amid ships of the support platform. The cold-water pump will be connected to the cold-water pipe with a 100-foot 18-inch-diameter transfer hose.

SEAWATER PIPING — The cold-water pipe will be 28-inch-diameter, 2,700-foot-long polyethylene. The warm water and seawater return pipes will be made of the same material but of smaller diameter and shorter length. The buoyant cold-water pipe will be anchored approximately 300 feet above the ocean floor. The top of the pipe will be connected to a spar buoy which in turn will be connected to the support platform with hawsers.

Lloyd Jones, Energy Projects manager for Dillingham, reported that preliminary engineering studies conducted by Makai Ocean Engineering Company, Kailua, Hawaii, had resolved all the questions regarding deployment and mooring of the cold-water pipe, one of the most difficult operations.

Makai Engineering also conducted engineering studies and prepared designs of the barge modifications and outfitting.

Operations will be under the direction of **Hank White,** operations manager of Hawaii Natural Energy Laboratory. "The importance of this project for providing a non-polluting, alternate electrical-power source using a renewable fuel source cannot be overemphasized," Mr. **White** said. "Mini-OTEC will confirm the technical feasibility of exploiting the ocean thermal gradient and may play an important role in the energy economy of tropical islands in the foreseeable future."

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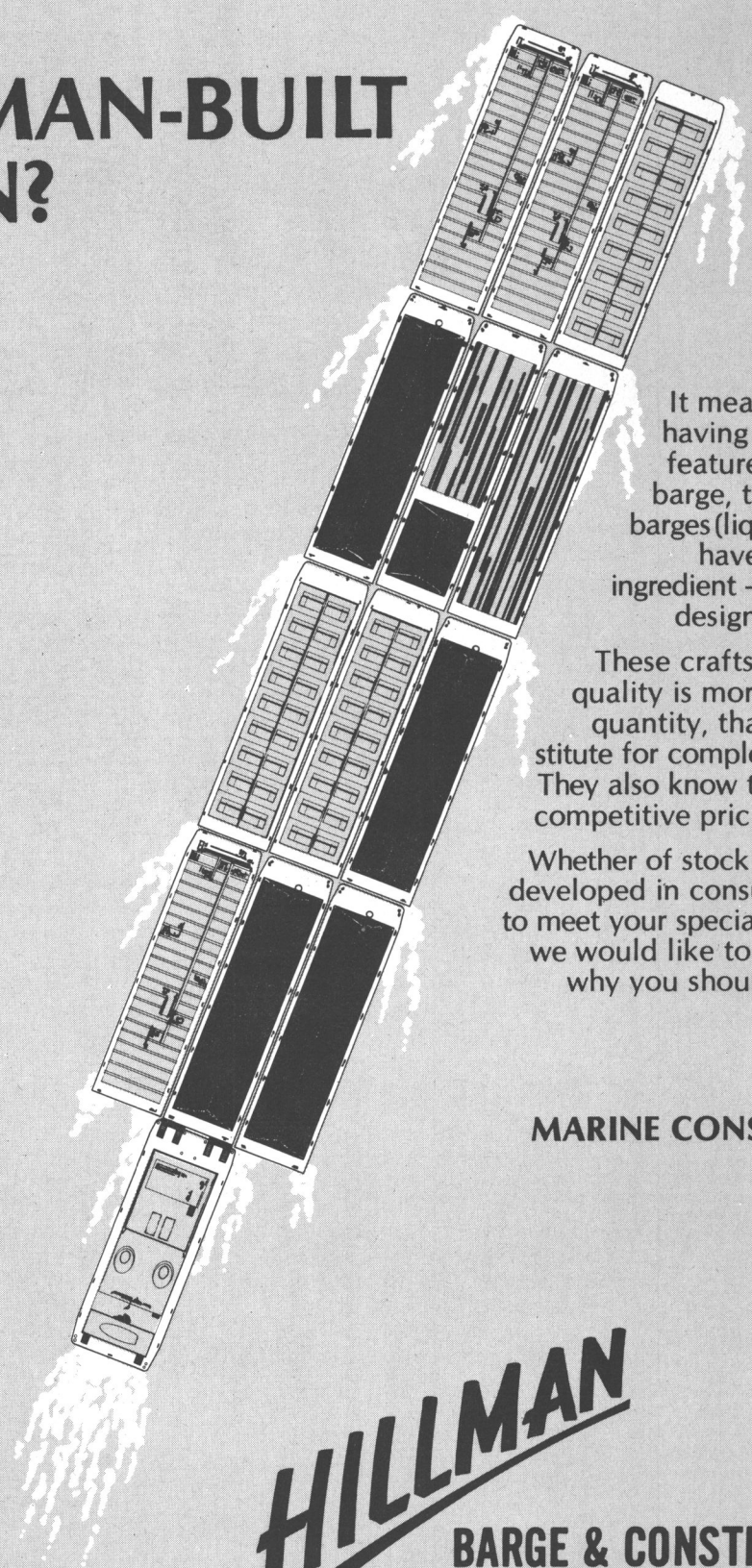

It means, in addition to having all the structural features of any modern barge, that Hillman-built barges (liquid, grain, or coal) have an extra special ingredient — the people who design and build them.

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N. Dwain Wheeler Heads New Ship Repair Yard —Port Houston Marine

Port Houston Marine, Inc., a new and modern general ship repair yard, has begun operations in the Port of Houston, Texas. The facility is conveniently located at the turning basin on the south side of the Houston Ship Channel, with docking for vessels up to 600 feet, and workshops for any kind of ship repairs.

Port Houston Marine offers expert services in ship repair and maintenance, electric motor repairs and rewinding, diesel engine repair, prefabrication of structured steel and piping systems, erection of structures, piping systems and machinery for petrochemical plants, refineries and oil rigs. The company also has a 100-ton derrick barge for heavy lift capabilities. Port Houston Marine can perform maintenance and repair service dockside and at sea. The company is also the authorized factory repair workshop for Burmeister & Wain/ALPHA Diesel Engines. Complete weight testing can be performed, with test tank and dynamometers for on the job test.

The firm is headed up by **N. Dwain Wheeler,** vice president of Operations, who has 25 years' experience in marine repair work in Houston. Other officials include **Knut Berg,** president, **Per E. Svensen Sr.,** vice president, both of Oslo, Norway, and **Gene Markey,** vice president, Finance.



N. Dwain Wheeler

Key operating personnel have been obtained who have many years' experience in the ship repair business.

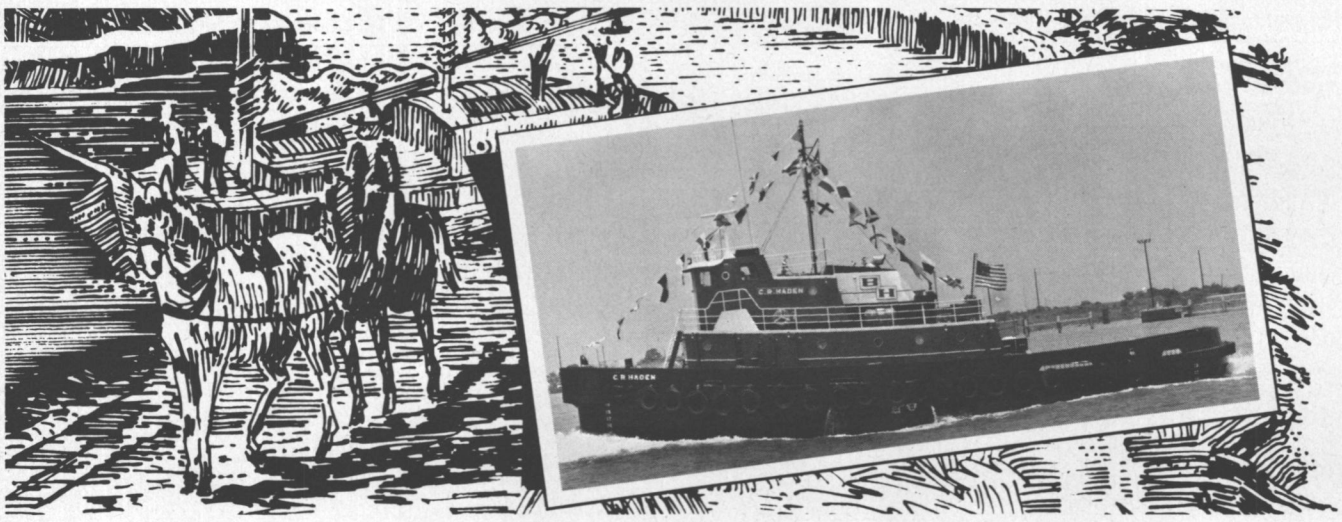
Port Houston Marine, Inc. is a newly formed subsidiary of Soderlund & Berg A/S of Oslo, a mechanical contractor with international experience in marine, offshore and onshore construction and maintenance. The Soderlund & Berg Group is an established factor in the North Sea area, having been actively engaged in oilfield construction as well as erection of various refineries and petrochemical plants. Messrs. **Berg** and **Svensen** are officers in Soderlund & Berg.

Jones Oregon Stevedoring Elects Earl F. Weiss Chairman Of The Board

The board of directors have announced the election of **Earl F. Weiss** as chairman of the board of Jones Oregon Stevedoring Company, Portland, Ore. The announcement was made by **Peter N. Beckett,** president of Jones Oregon Stevedoring Company, at a reception held recently at the University Club in Portland.

Mr. **Weiss** served as president and director of Jones Oregon from 1971 to 1976. He joined the Jones organization in 1952 after an extensive waterfront career that dates back to 1934.

Mr. **Weiss** is a director of Pacific Maritime Association, a member of the Oregon Sub-steering Committee of the PMA, a member of the Oregon Area Labor Relations Committee, and last year was a recipient of the "Old Salt Award" given in Portland for outstanding service to the steamship industry. Jones Oregon Stevedoring Company, along with its sister company, Jones Washington Stevedoring Company of Seattle, Wash., is the pioneer stevedoring organization in the Pacific Northwest, having operated in the Oregon area since 1908, and in the Puget Sound area since 1858.



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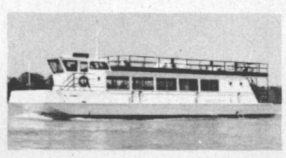

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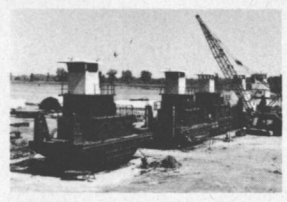

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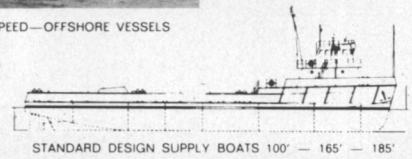

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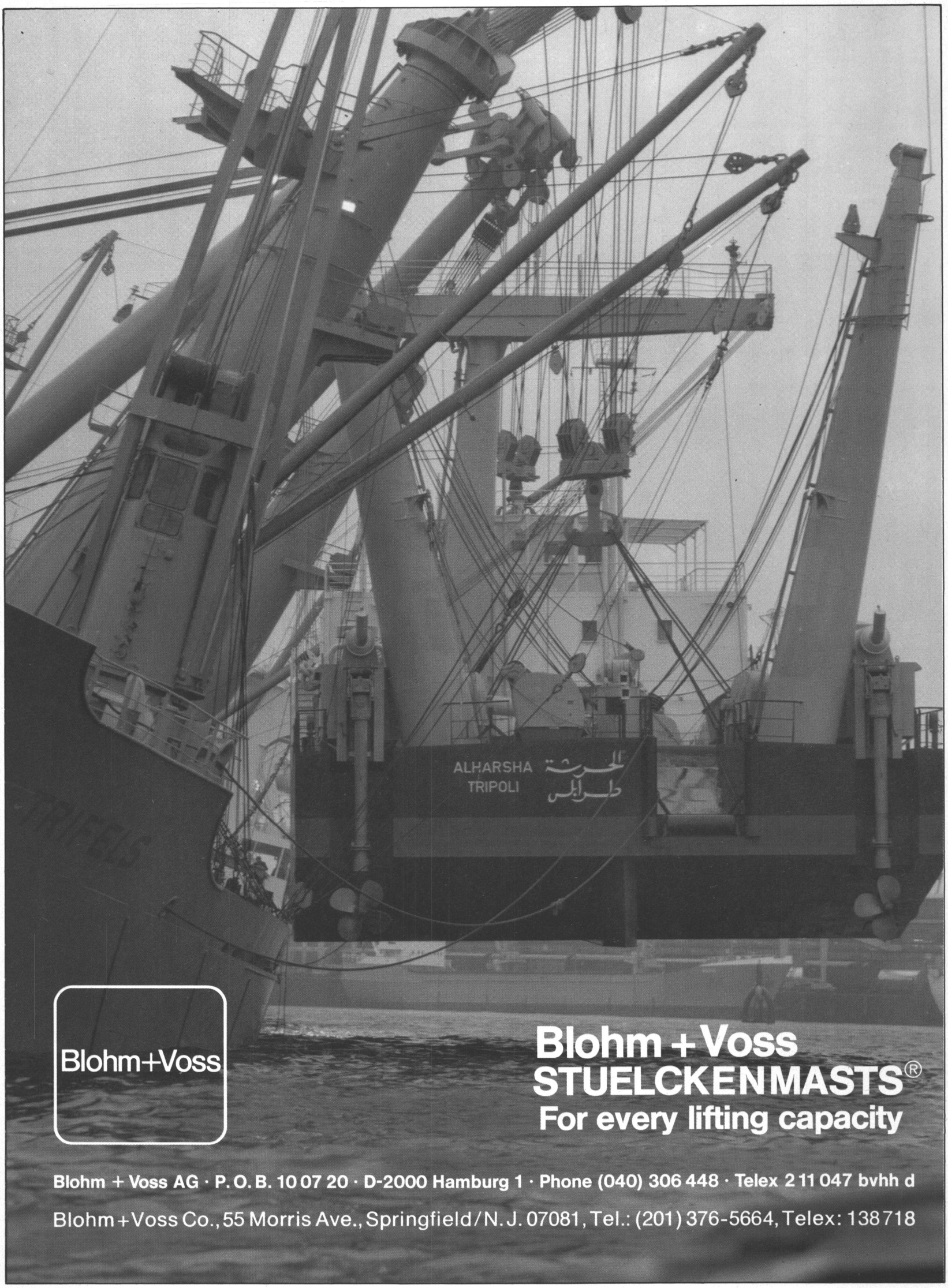
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S.S. United States Sold To Seattle Firm As-Is For $5 Million

The S/S United States, fastest ocean liner ever to cross the Atlantic and the property of the Federal Government for more than five years, has been sold for $5 million to United States Cruises, Inc. of Seattle, Wash., according to an announcement by **Robert J. Blackwell,** Assistant Secretary of Commerce for Maritime Affairs.

United States Cruises proposes to refurbish the 26-year-old, 38,000-gross-ton passenger vessel and provide warm weather cruise service between Los Angeles/San Francisco and Hawaii, and among the Hawaiian Islands, with a capacity of 1,000 passengers.

The firm was among three bidders responding last July 18 to an Invitation for Bids issued earlier this year by the Maritime Administration (MarAd), an agency of the U.S. Department of Commerce. At that time, none of the bids was considered responsive to the Government's terms and conditions of sale.

An amended proposal has been under discussion between representatives of the Maritime Administration and the Seattle firm for several weeks.

Under terms of the sale, the company paid 10 percent ($500,000) down, with the balance payable in eight months. The purchaser will start paying interest on the balance ($4,500,000) and also will begin paying all storage charges 30 days after the signing of the contract.

The all-cash sale involves no Government subsidies and no mortgage guarantees. It was made on an as-is, where-is basis with no guarantees as to the vessel's condition.

The United States, a vessel in the National Defense Reserve Fleet maintained by MarAd, is berthed at the International Terminal in Norfolk, Va. She has been in layup since the completion of her final trans-Atlantic voyage under the flag of the U.S. Lines on November 7, 1969.

Mr. **Blackwell** said: "The sale of the United States is a highly significant development for the American merchant marine for a number of reasons. It returns a large sum of Federal money, which had been tied up in the United States for a number of years, to the U.S. Treasury. And, under the plans announced by the new owner, it puts back into operation a great ship, creates some 1,000 seafaring jobs, returns the U.S.-flag fleet to full passenger liner service, and specifically restores that service between the U.S. West Coast and Hawaii."

The crew proposed by United States Cruises is 500 — which would create twice that number of seafaring jobs on an annual basis under a routine ship/shore rotation of personnel.

The United States is 990 feet long and has a beam of 101 feet 6 inches. She was built for United States Lines in 1952 by the Newport News (Va.) Shipbuilding and Dry Dock Co. at a cost of $79.5 million, $44.5 million of which was paid by a Federal subsidy. The superliner set a trans-Atlantic speed record on her maiden voyage from New York to Le Havre in July of that year. She averaged 35.59 knots, a speed never beaten in the regular trans-Atlantic service, and she regularly cruised at 33 knots. But neither of these speeds was the United States' fastest. Earlier this year, with the Government's declassification of performance data on the ship, it was disclosed that in her then-secret sea trials in May 1952, the United States achieved a top speed of 38.32 knots.

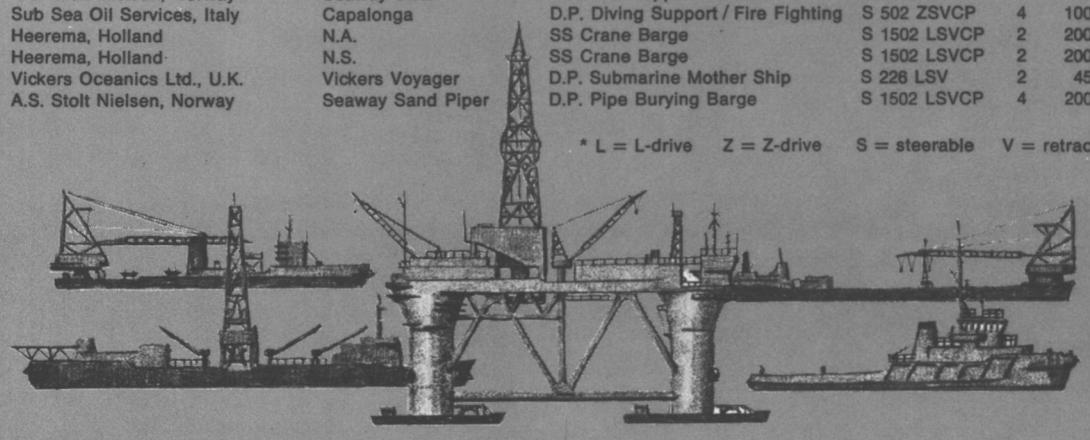
In her heyday, the vessel carried up to 1,982 passengers, with a crew of 1,000, in the trans-Atlantic trade. But as trans-Atlantic airline service grew in the 1960s, even with Federal operating subsidies, the United States operated at a loss of more

(continued next page)

REFERENCE LIST OF SCHOTTEL PROPULSION EQUIPMENT IN THE OFFSHORE INDUSTRY

Owner	Vessel	Application	Type*	No.	HP/kW
Institut Francais du Petrol, France	Terebel	D.P. Coring Vessel	S 150 ZS	2	300/220
Global Marine Inc., U.S.A.	Glomar Challenger	D.P. Drill Ship	S 300 L	4	750/550
The Offshore Co., U.S.A.	Discoverer I	Drill Ship	S 300 LS	1	750/550
The Offshore Co., U.S.A.	Discoverer II	Drill Ship	S 300 LS	3	750/550
U.S. Navy, U.S.A.	Naubuc	D.P. Cable Ship	S 500 ZS	4	1250/920
Penrod Drilling Co., U.S.A.	Penrod 58	Jack-Up	S 500 LS	3	1000/735
Penrod Drilling Co., U.S.A.	Penrod 59	Jack-Up	S 500 LS	3	1000/735
Dresser Offshore Services, U.S.A.	Dresser I/III/IV/V/VI/VII	Workoverrigs	NAV/SRP 150	12	310/225
Western Oceanics, U.S.A.	Western Star	Jack-Up	S 300 LS	2	750/550
Penrod Drilling Co., U.S.A.	Penrod 55	Jack-Up	S 500 LS	2	1000/735
The Offshore Co., U.S.A.	Discoverer III	Drill Ship	S 300 LS	3	750/550
Western Oceanics, U.S.A.	Western Delta	Jack-Up	S 500 LS	2	750/550
Petrobras, Brazil	Petrobras II	Drill Ship	S 300 LS	3	750/550
A.S.Norsedrill & Co., Norway	Drill Master	Semi-Submersible	S 1500 L	2	2000/1470
—	—	—	S 500 LS	1	750/550
The Offshore Co., U.S.A.	Antares	Jack-Up	S 500 LS	3	900/660
Atwood Oceanics, U.S.A.	Chickamauga	Jack-Up	S 500 ZS	2	800/590
Saipem, Italy	Scarabeo III	Semi-Submersible	S 1500 LS	3	2000/1470
Offshore Drilling Inc., U.K.	Medusa	Semi-Submersible	S 1500 L	2	2000/1470
—	—	—	S 500 LS	1	750/550
Saipem, Italy	Scarabeo IV	Semi-Submersible	S 1500 LS	3	2000/1470
Pel-lyn Godager Co., U.S.A.	Venture I	Semi-Submersible	S 1500 LS	3	2000/1470
Pel-lyn Godager Co., U.S.A.	Venture II	Semi-Submersible	S 1500 LS	3	2000/1470
Atwood Oceanics., U.S.A.	Fredericksburg	Drill Barge	S 1500 ZS	2	1760/1295
Micoperi, Italy	Rialto	Crane Ship	S 500 ZS	2	1000/735
Knut Knudsen, Norway	Constructor	Diving Support	S 300 ZS	2	510/375
Atwood Oceanics, U.S.A.	Chancellorsville	Drill Barge	S 1500 ZS	2	1760/1295
Heerema, Holland	Odin	Crane Barge	S 1500 LSV	3	2000/1470
Global Marine Inc., U.S.A.	Glomar Pacific	D.P. Drill Ship	S 1500 L	5	1675/1230
Western Oceanics, U.S.A.	Western Triton I	Jack-Up	S 502 LS	2	1200/880
Western Oceanics, U.S.A.	Western Triton II	Jack-Up	S 502 LS	2	1200/880
The Offshore Co., U.S.A.	Discoverer IV	Drill Ship	S 300 LS	3	750/550
Scan Drilling Co., Norway	Scan Queen	Drill Barge	S 1500 ZS	2	1760/1295
A.S. Ugland Rederi, Norway	Sarita	Crane Ship	S 2502 ZSV	1	3200/2350
Diamond Dragon Drilling, N.A.	Diamond M Dragon	Drill Barge	S 1500 ZS	2	1760/1295
Flexservice N.V., N.A.	Flexervice I	D.P. Pipe Layer	S 502 ZSV	4	1160/855
British Petroleum, U.K.	Forties Kiwi	D.P. Fire Fighter	S 1500 ZSV	4	2000/1470
Wijsmuller, Holland	Ocean Servant I	S.P. Oceangoing Barge	S 300 ZS	2	600/440
Wijsmuller, Holland	Ocean Servant II	S.P. Oceangoing Barge	S 300 ZS	2	600/440
Serra Frères, France	Talisman	Diving Support Vessel	S 400	2	850/625
—	—	—	S 300	2	650/475
U.S.S.R.	ESARC I	D.P. Coring Vessel	S 505 LSV	2	1035/760
A.S. Stolt Nielsen, Norway	Seaway Swan	D.P. S.S. Support Vessel	S 1500 LS	2	2400/1765
Sub Sea Oil Services, Italy	Capalonga	D.P. Diving Support / Fire Fighting	S 502 ZSVCP	4	1000/735
Heerema, Holland	N.A.	SS Crane Barge	S 1502 LSVCP	2	2000/1470
Heerema, Holland	N.S.	SS Crane Barge	S 1502 LSVCP	2	2000/1470
Vickers Oceanics Ltd., U.K.	Vickers Voyager	D.P. Submarine Mother Ship	S 228 LSV	2	450/330
A.S. Stolt Nielsen, Norway	Seaway Sand Piper	D.P. Pipe Burying Barge	S 1502 LSVCP	4	2000/1470

* L = L-drive Z = Z-drive S = steerable V = retractable



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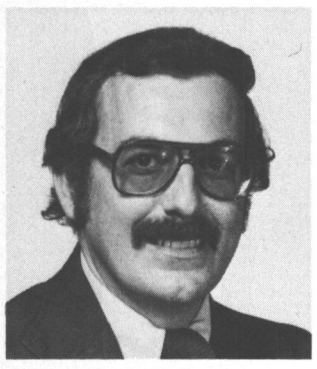
than $3 million in her final year. Her layup marked a rapid decline in passenger liner service.

The only scheduled passenger service offered today by U.S.-flag vessels is aboard four combination freighter-passenger liners of Delta Steamship Lines, Inc.—the Santa Magdalena, Santa Maria, Santa Mariana, and Santa Mercedes. These ships, formerly operated by Prudential Lines, Inc., sail regularly from the United States West Coast, transit the Panama Canal, and circumnavigate South America, calling on ports on both the Atlantic and Pacific sides of that continent. Each can carry 110 passengers.

Regular passenger and/or cruise service between the West Coast and Hawaii and other points in the Pacific had been provided until last spring by two Pacific Far East Line, Inc. (PFEL) vessels, the Monterey and Mariposa. The Monterey completed her last voyage in January, and the Mariposa ended the era on April 7, when she arrived in San Francisco from Hawaii.

Frank J. Ferri Opens Office In Lake Worth, Fla.



Frank J. Ferri

Frank J. Ferri has announced the opening of his office in Lake Worth, Fla., where he will represent naval architects, marine design firms and various boatyards located throughout the Southeast. By working through **Mr. Ferri's** office, prospective customers are given an independent evaluation of available sources for a variety of vessel types, including workboats, crewboats, landing craft, fishing boats, and patrol craft of all types. Services include specification development, contract guidance drawings, and contract negotiations, including terms and conditions in both Spanish and English.

Mr. Ferri has attended Hofstra University, New York, and the University of Florida, and is a member of The Society of Naval Architects and Marine Engineers. He has over 15 years' experience in the marine industry, including positions with General Dynamics/Electric Boat, Ingalls Nuclear Shipbuilding, and Litton Ship Systems. For further information, write Frank J. Ferri and Associates, Inc., 1218 South Lakeside Drive, Lake Worth, Fla. 33460.

General Instrument Announces Improved Design Pressure Gauge

General Instrument Corporation, 3811 University Boulevard West #26, Jacksonville, Fla. 32217, announces an improved design Pressure Gauge, with bronze and stainless-steel internals.

Manufactured by ENFM of Holland and distributed in the U.S. and Canada, the gauge is available in 2½, 4 and 6-inch sizes with stem or panel mounting.

According to CIC president **Jacob Olieman,** the new gauge features an adjustable pointer, dry or fillable execution with blowout relief valve, and has a stainless-steel case with safety glass or transparent acrylic lens. The gauge is repairable in the field, he said.

All gauges are produced by the Holland plant, which has been manufacturing quality instruments since 1906, and carry an absolute one-year guarantee.

U.S. distribution is under General Instrument Corporation with headquarters in Jacksonville, Fla., while Canadian distribution is by Instruments Metrier in Montreal.

It only took 18 months

Shipping lines, shipyards and ship's officers throughout the world have given the Kockums Loadmaster Computer G70 the seal of approval. By the start of 1978, after only 18 months on the market, the LMC G70 had been installed aboard more than 170 ships, covering the entire range of dry cargo vessels up to 60,000 tdw.

The officers in charge can tell you how much an LMC G70 means aboard ship, where stability is vital. They know that the LMC G70 provides them with fast, accurate and, above all, simple answers to questions about the effects of cargo distribution alternatives on stability, draft, trim and deadweight. They value the fact that data and results displayed on the panel can be obtained on tape, eliminating the need for time-consuming manual documentation.

The LMC G70 as an office computer

The LMC G70 is also available in a multi-version for use ashore as an office computer. In this application, a single calculator is used for a number of ships. The ships' programs are stored on plug-in cassettes.

Sea-going or land-based, the LMC G70 is a giant step forward along the road to improved efficiency, safety and economy. At a very low unit investment cost.

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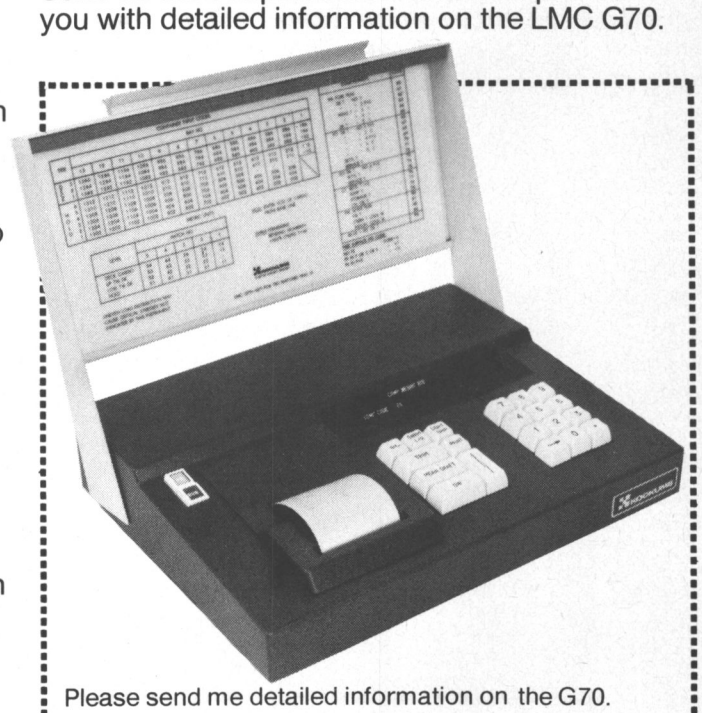

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Foss Alaska Line Appoints Roy Schulz

Roy Schulz has been appointed assistant operations manager for Foss Alaska Line, Seattle, Wash. Prior to joining FAL, Mr. **Schulz** was Puget Sound sales representative for Foss Launch & Tug, and was manager of Reliable Line Service and Tacoma Line Handling Services, divisions of Foss. He has also served as superintendent of operations for American Mail Line.

Mr. **Schulz** is a graduate of the U.S. Maritime Academy at Kings Point, N.Y., and has a Bachelor of Science degree in marine transportation. He is a member of The Propeller Club, the Yukon Club, and is a Commander in the U.S. Naval Reserve.

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Congressman John M. Murphy Presented With Maritime Industry's 'AOTOS' Award



W.J. Amoss Jr. (second from left), president of Lykes Lines, presents silver statue of Christopher Columbus, representing "AOTOS" (Admiral of the Ocean Sea) Award to Congressman **John M. Murphy** (D-N.Y.) at the maritime industry's annual dinner-dance at the New York Hilton, to honor the man who has done the most to promote the cause of American-flag shipping. Capt. **J.R. Hart** (first left), co-chairman of the Arrangements Committee, and Capt. **F.K. Riley** (fourth left), co-chairman, look on.

Presentation of the coveted AOTOS (Admiral of the Ocean Sea) Award was made to Congressman **John M. Murphy,** Chairman of the Merchant Marine & Fisheries Committee, for his distinguished service to the maritime industry. The award was presented to Congressman **Murphy** at a dinner-dance in the New York Hilton on September 22, amid an industry gathering of nearly 1,000 top leaders in government, labor, military and industry.

Congressman **Murphy,** in his remarks, re-emphasized this country's maritime plight, reiterating that American-flag ships have found it increasingly difficult to compete with "unfair and predatory rate-cutting in practices by state-owned fleets seeking to accumulate hard foreign currency, increase American and Western nation trade deficits, and generally disrupt the conference system." Mr. **Murphy** emphasized the need for a new program to develop an American-flag dry-bulk fleet. He pointed out that aside from government-generated traffic, only about 1 or 2 percent of this country's dry-bulk trade moves in American-flag vessels.

Mr. **Murphy** has the distinct honor of having been chosen to chair the Ad Hoc Select Committee on the Outer Continental Shelf, with the specific purpose of updating antiquated laws regarding the development of offshore oil and gas resources under the ocean floor, thus making him the only man in Congress to chair two full committees. President **Carter** recently signed the offshore legislation into law. Congressman **Murphy,** the 10th recipient of this prestigious award, is a graduate of the United States Military Academy, and served with great distinction as an officer in the Ninth Infantry Regiment of the Second Infantry Division during the Korean Conflict. In addition to the Purple Heart and the Bronze Star, Mr. **Murphy** holds this nation's highest award for valor in combat — the Distinguished Service Cross.

Having spent the past 16 years in service to his country, Representative **Murphy** was first elected to Congress in 1962, representing the 17th Congressional District of New York, and has been reelected to each succeeding Congress.

"Admiral of the Ocean Sea" (AOTOS) was originally conferred on Christopher Columbus upon his return from discovering the New World in 1493. The title was revived by United Seamen's Service in 1970, when it sponsored the first AOTOS Award to honor the man who, each year, has done the most to promote the cause of American-flag shipping. Former recipients were: the late **James A. Farrell Jr.,** chairman of Farrell Lines (1977); the Honorable **Robert J. Blackwell,** Assistant Secretary of Commerce for Maritime Affairs (1976); Senator

Warren J. Magnuson, Washington (1975); **Thomas W. Gleason,** ILA president (1974); Congresswoman **Leonor K. Sullivan,** former Chairman, House Merchant Marine & Fisheries Committee (1973); **Andrew E. Gibson,** former Assistant Secretary of Commerce for Maritime Affairs (1972); **Helen Delich Bentley,** former Chairman, Federal Maritime Commission (1971); the late **Spyros P. Skouras** (1970), and **Joseph E. Curran,** former NMU president, Special Award (1973).

The AOTOS Legend

It was the rebirth of classical Greek and Roman knowledge in Renaissance Spain, joined with Columbus's global venture, that inspired King Ferdinand and Queen Isabella to give Columbus the title "Admiral of the Ocean Sea" upon his return to Spain in 1493. Columbus had traveled the fabled "Okeanos," the great river of water around the world (according to Homer), and sailed under "Okeanos," the god of the outer waters. He returned with the discovery of the New World and proof as well that the world was round — a great new beginning.

The title "Admiral of the Ocean Sea" was prophetic in that Columbus's voyage opened up the New World and began two centuries of maritime exploration that carried ships and seamen to every part of the world and established the roots of America's shipping heritage.

The title belonged strictly to Columbus and his family until 1970, when the United Seamen's Service began sponsoring the Admiral of the Ocean Sea (AOTOS) Award. Since then, with the cooperation of the entire maritime industry, the person who has done the most to advance the cause of American-flag shipping each year has been named "Admiral of the Ocean Sea," and presented with this coveted award. The AOTOS recipient is selected by a committee of maritime labor, management and government leaders.

The AOTOS Award is a silver statuette of Christopher Columbus with his hand resting on his ship's anchor. Each year, it is cast in Genoa, Italy, just two blocks from the place of this famous mariner's birth, and brought to the United States on an American ship.

East Coast Overseas Names Alfred Nuzio VP

Alfred A. Nuzio has been named vice president of East Coast Overseas Corp., a New York-based steamship agency.

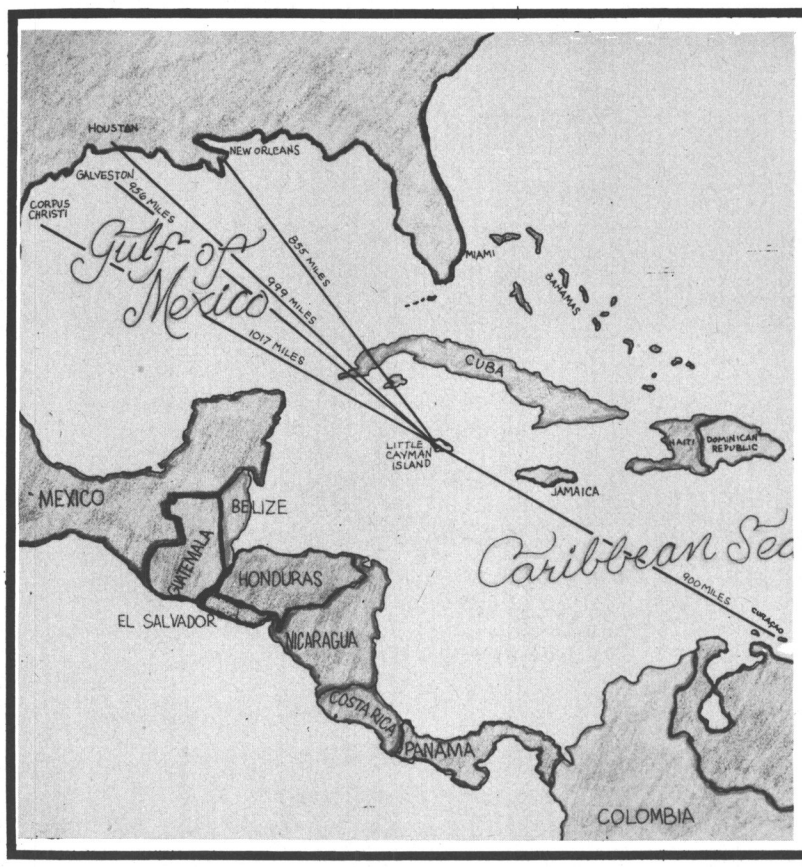
Before joining East Coast Overseas, Mr. **Nuzio** served as a vice president of Tilston Robert Corp., overseeing liner service to South America, Europe, West Africa, Egypt, Central America, the Persian Gulf, and the Far East.

Marland Appoints Peter Gast GmbH Sales Agency In Germany

Bob Daniels, marketing vice president of Marland Environmental Systems, Inc., has announced the appointment of Peter Gast Shipping GmbH as German sales agents for Marland's physical/chemical Marine Sewage Treatment Systems. Mr. **Daniels** indicated that the Gast firm was selected because of its long-standing reputation in the international marine industry as a dependable, well-established company. The Marland agency will be under the personal supervision of Peter Gast.

"The Gast appointment," said Mr. **Daniels,** "is the latest step forward in our continuing program to expand and solidify Marland's worldwide position in the marine sanitation field. In the past few years, Marland technology has kept ahead of the worldwide trend to pollution control regulations of ever-increasing stringency. We are also developing substantial sales and service capabilities throughout the world."

For more information and new Marland literature, call or write Marland headquarters, North Main Street, Walworth, Wis. 53184.



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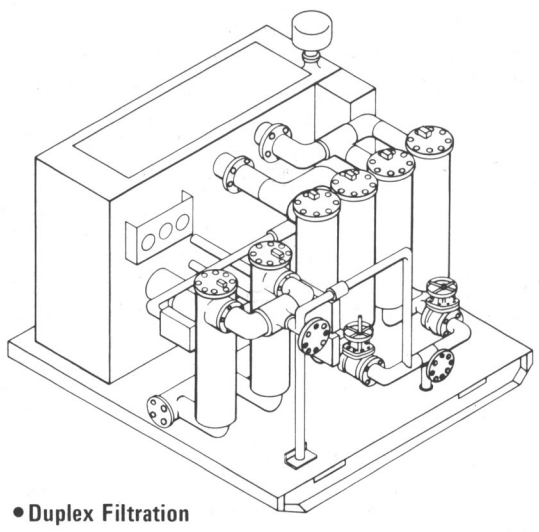

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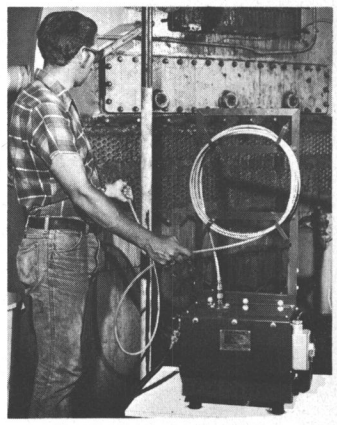

This heavy duty Ream-A-Matic incorporates a drive motor which turns a flexible shaft inside a watertight casing. The unit has an adjustable valve and connects to a standard hose which will supply the water through the casing to be ejected at the rotating brush or wire tool to keep it clean at all times and flush out loosened deposits. Cleans tubes quickly and easily by one man from one end only — little space required. Clean tubes for peak efficiency.

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ASNE Establishes Scholarship Program For College Students

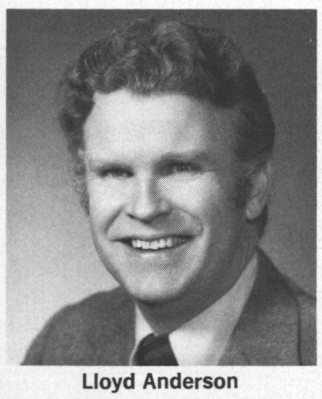
The American Society of Naval Engineers has established a scholarship program for college students who are interested in pursuing a career in naval engineering.

Naval engineering includes all arts and sciences as applied in the research, development, design, construction, operation, maintenance and logistic support of surface and sub-surface ships and marine craft, naval maritime auxiliaries, ship-related aviation, electronic, and ordnance systems, ocean structures, and fixed and mobile shore facilities which are used by the naval and other military forces and civilian maritime organizations for the defense and well-being of the nation.

The first two scholarships of $1,000 a year will be awarded to undergraduate or graduate students who are citizens or permanent residents of the United States, and who will be enrolled in a full-time program leading to a designated engineering degree in an accredited college or university. Scholarships will not usually be awarded to doctoral candidates or to persons already having an advanced degree. Scholarships will normally be renewed for the duration of the program in which entered while the student is in good standing. Additional awards will be made in subsequent years. Awards may be used for payment of tuition, fees, and expenses.

Application blanks may be obtained from the American Society of Naval Engineers, 1012 14th Street, N.W., Suite 807, Washington, D.C. 20005. Applications must be submitted to ASNE by March 1, 1979.

Lloyd Anderson Elected Chairman National Waterways Conference



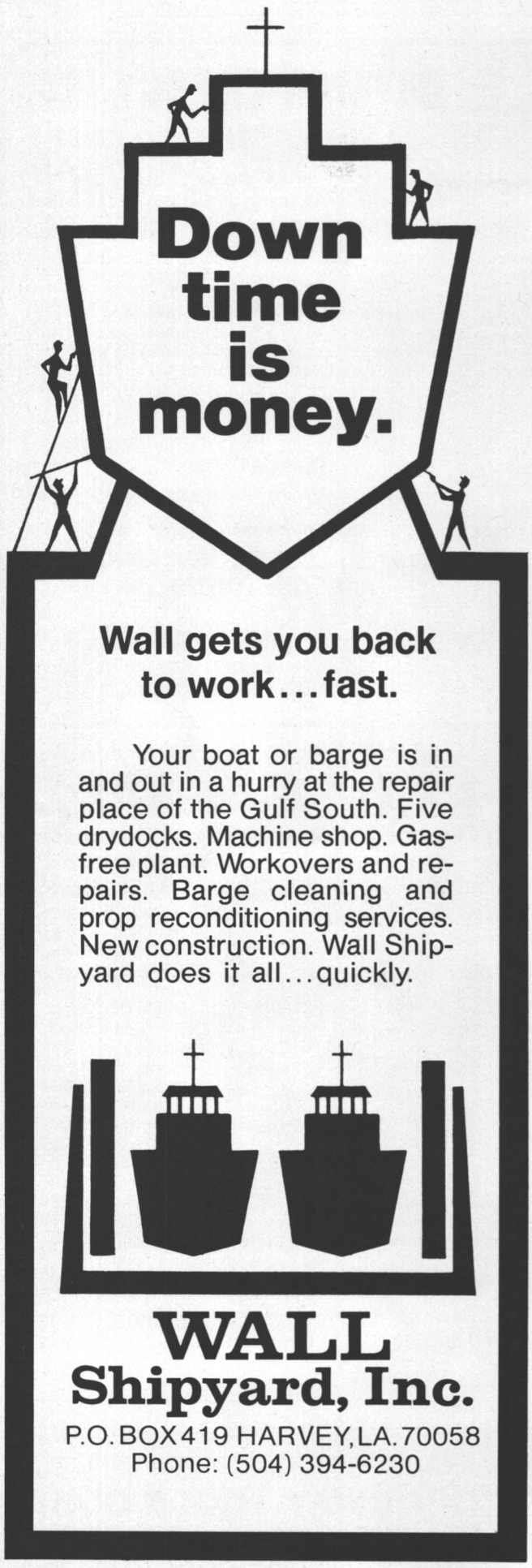
Lloyd Anderson

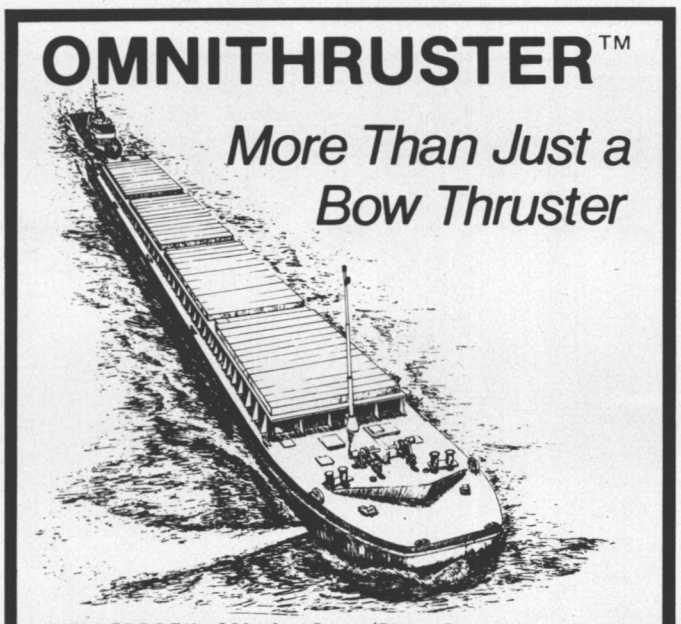
Port of Portland executive director **Lloyd Anderson** was elected chairman of the board of the National Waterways Conference at a meeting in late September in Birmingham, Ala. Mr. **Anderson** will head the organization for two years.

Dedicated to the promotion of the U.S. system of waterways, the National Waterways Conference is headquartered in Washington, D.C. and represents trade associations, carriers, public ports, shippers and other organizations involved in waterborne services. Mr. **Anderson** also was elected to membership on the board of the National Waterways Foundation, which performs research for the maintenance and development of waterways as a viable transportation network.

Mr. **Anderson** joined the Port in March 1974, and was named executive director in November of that year. Previously, he had served as City of Portland Commissioner of Public Works, and as manager of the Portland office of Cornell, Howland, Hayes & Merryfield, consulting engineers.

Mr. **Anderson** has been deputy director of the Oregon State Department of Planning and Development, director of the Multnomah County Planning Commission, and planning administrator for King County, Wash. He is a member of the committee on U.S. transportation policy for the American Association of Port Authorities and the executive council of the Institute for Transportation, American Public Works Association.





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S.U.N.Y. Maritime College Alumni Ass'n Meeting To Be Held November 16

The Alumni Association of the State University of New York Maritime College will hold its regular meeting on Thursday, November 16, 1978, at Q.D. McGraw's Restaurant, 60 East 41st Street, New York City.

The meeting will start at 6 p.m. with a buffet supper. **Jack O'Neill,** president of the Association, will preside at the business portion of the meeting. President **O'Neill** will then introduce Capt. **Richard W. Trimble,** whose appointment as Commanding Officer, T.S. Empire State and Commandant of Cadets of the State University of New York Maritime College was recently announced by Rear Adm. **Sheldon H. Kinney,** president of SUNY Maritime. Captain **Trimble** is an alumnus of the class of 1952. The balance of the meeting will be devoted to fostering camaraderie. Out of town alumni in New York City for The Society of Naval Architects and Marine Engineers Annual Meeting are welcome.

Sperry Division Designs Steering Gear Failure Alarm And Flash System

A system that rings an alarm and flashes a light in a ship's wheelhouse just seconds after a steering gear failure occurs has been designed by the Sperry Division of Sperry Rand Corporation.

Called the "Steering Failure Alarm," the system is intended to prevent groundings and collisions attributable to steering gear failure, an important cause of ship accidents.

The system will be installed on nine liquefied natural gas (LNG) carriers being built in the United States and France for El Paso LNG Company. In addition, a system has been ordered for a Chevron oil tanker.

The Steering Failure Alarm contains patented circuits which respond almost instantaneously to a discrepancy between the rudder's actual position and the position which is indicated by a computer simulation. If the discrepancy is greater than a preset value, the system sounds an alarm within two or three seconds.

"The system is independent of the ship's steering control system," according to **Henry H. Johnston,** marketing manager for Sperry's marine steering gear program. "It uses two basic signals—rudder order and rudder angle—provided by separate transducers on the helm and rudder. If the ship already has a separate rudder angle indicator system, it can be used to provide the rudder angle signal. With automatic steering, the autopilot computer output is used as the rudder order signal."

Mr. **Johnston** said that the U.S. Coast Guard is currently studying proposals to require a steering failure alarm system on all ships over 20,000 gross tons operating in U.S. waters. For additional information, write to **Henry H. Johnston,** Sperry Division, Sperry Rand Corporation, Great Neck, N.Y. 11020.

Santa Fe Names Morris Regional Manager North And South America

James H. Morris, vice president and Middle East manager of Santa Fe Drilling Co., Orange, Calif. 92668, transferred from Bahrain to Houston, Texas, October 1 as regional manager for North and South America. He succeeds **L.M. Jones,** who resigned.

B.G. Parker, vice president and operations manager for the Middle East, succeeds Mr. **Morris** as area manager in Bahrain.

Also effective October 1, **Charles K. Orr,** vice president, business development, assumed the responsibilities of area manager for Southeast Asia, in addition to his other duties. He will continue to be based in the company's Orange, Calif., headquarters.

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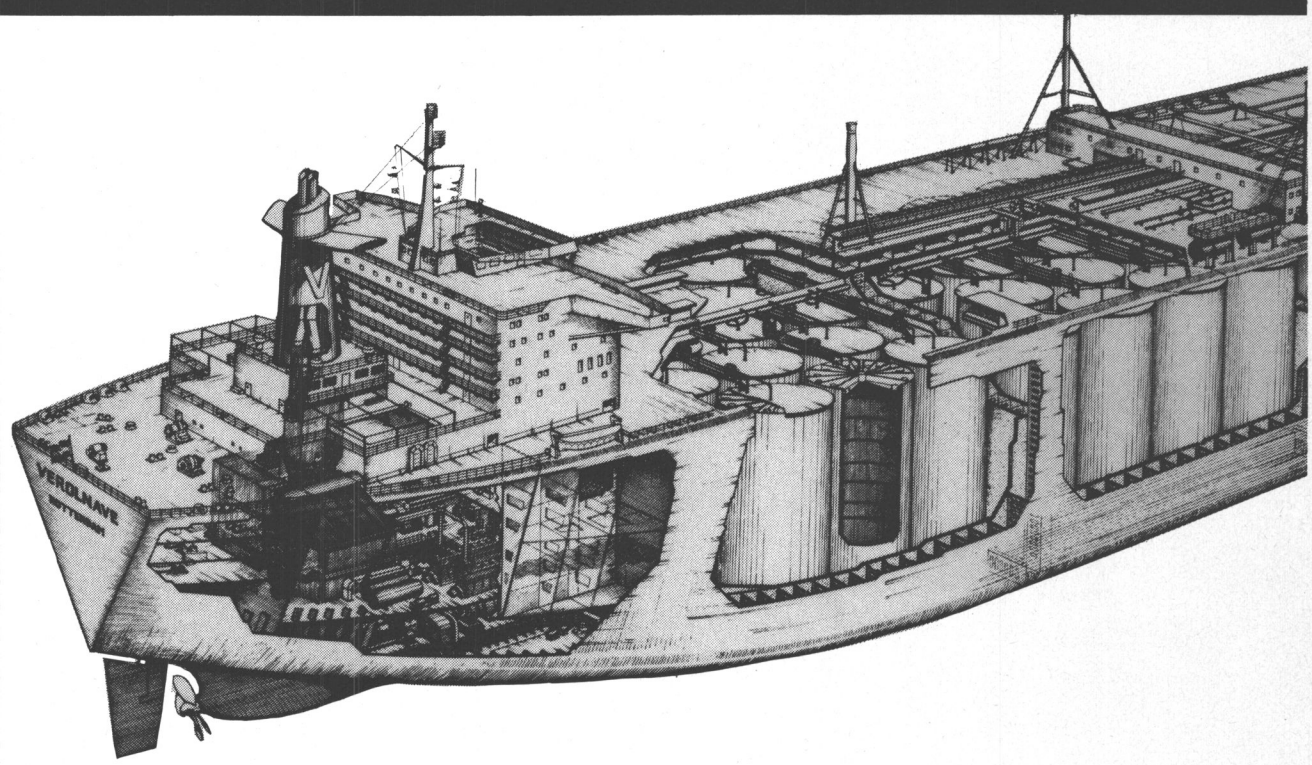

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Full information and specification are available from Naval Project Development Company 'Rotterdam' B.V., a subsidiary of the Verolme organisation.

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Blaak 101, Rotterdam, Netherlands.
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Telex: 26054 (VERTR).

ICHCA Cargo Conference To Hear 22 Speakers Nov. 13-15 In New York

The United States National Committee of ICHCA has announced that 22 leaders in the field of bulk cargo will address the three-day conference and seminar the organization is sponsoring at the Americana Hotel in New York City on November 13-15, 1978.

In reporting details of the program, **John J. Farrell Jr.**, president of the U.S. branch of ICHCA — the International Cargo Handling Coordination Association — said the guest speakers include some of the world's top specialists in handling and moving bulk products. "Our program is planned for a broad-based approach to the subject of bulk cargoes, and those taking part are acknowledged leaders in the field that embraces a wide spectrum of commodities and systems involved in their transport and handling," he said.

The conference, Mr. **Farrell** added, is one of the most detailed and comprehensive public forums on bulk cargo matters ever planned in this country, and it will range through seven subject categories over the three days. The discussion items and the scheduled speakers include:

1. **Future Bulk Ports** — There will be three speakers, including **P. Soros,** president of Soros Associates, on "Bulk Ports"; **R.J. Colleran,** president of Dravo-Van Houten, on "Economics of Offshore Oil Terminals"; and **E.T. Hillberg,** technical manager of advanced projects for Fairchild-Stratos Division, who will discuss "Offshore LNG Terminal Requirements."

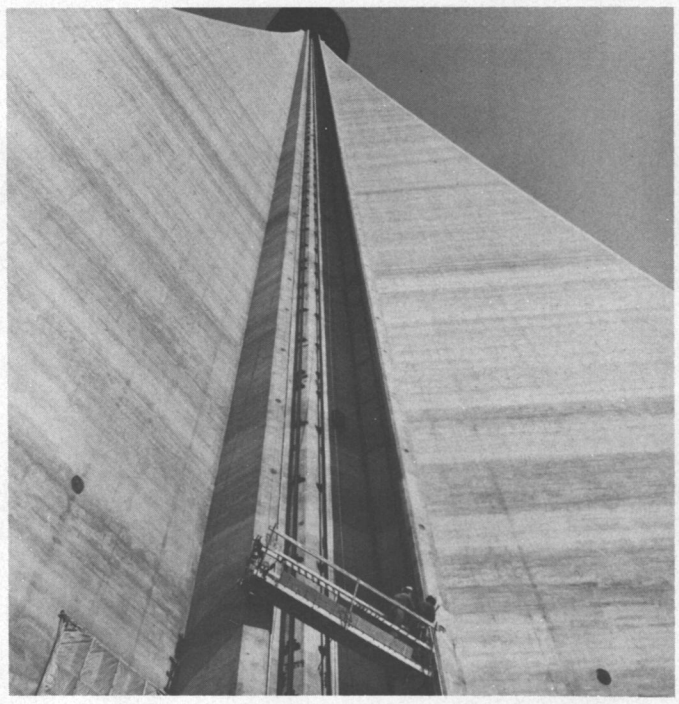
2. **Environmental and Safety Aspects in Bulk Handling** — The speakers will be **E.K. Bauman,** Safety Manager in the Federal Grain Inspector Service for the U.S. Department of Agriculture, on "Dust Hazards in Grain Handling"; **E.H. Middleton** of the Office of Merchant Marine Safety in the U.S. Coast Guard, on "Handling of Hazardous Bulk Commodities." A third title in this panel, "Hazards of Bulk Cargoes Which Fluidize or Shift," will have two speakers. They are **B.A. Bodenheimer,** president of Bodenheimer Associates, and **A.A. Freelund** of C.R. Cushing & Co.

3. **Efficiency in Bulk Handling —H.N. Baker Jr.,** vice president of Waterman Steamship Corp., will talk on "The Transportation of Bulk Commodities in Barge Carriers"; **Richard E. Henning,** director of Bulk Commodities at Sea-Land Service, Inc., will talk on "The Transportation of Bulk Commodities in Containers," and Capt. **N. Puppatti,** general manager of Standard Fruit Company, will speak on "Bananas—Cartons vs. Containers."

4. **Forest Products Handling— L. Rappleyea,** manager-Exports Sales for Louisiana-Pacific Corp., will talk on "Forest Products Handling—A Survey"; and **J. Dilutio,** vice president of Transportation for Bowater Paper Co., will speak on "Newsprint, the Role of Cargo Handling in the Determination of Trade Patterns."

5. **New Technologies and Problems in Handling Bulk Cargoes— R.N. Steele,** assistant general manager-Transportation at Norfolk & Western Railway Co., will talk on "Coal Transportation, Problems and Solutions"; **W.N. Sims,** vice president of Marconaflo, Inc., will speak on "Slurry Transportation and Technology"; and **C. Robertson,** Internal Chartering Specialist at E.I. du Pont, will speak on "Handling Problems in the Worldwide Distribution of Bulk Chemicals."

6. **Cargo Quality as a Result of Handling — J.A.J. Vermeulen** of Internationale Controle Maatschappij, B.V., will speak on "Handling and Storage Damage to Grain"; while two other speakers, **N.L. Pennington,** vice president-Refinery Operations, and **L.E. Cole,** warehouse manager of the California and Hawaiian Sug-



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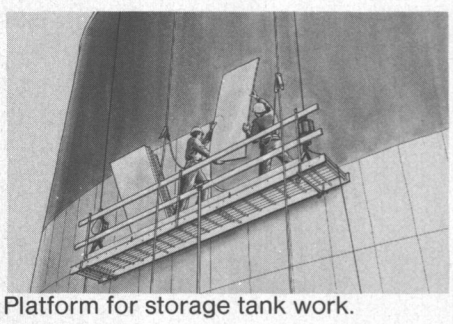
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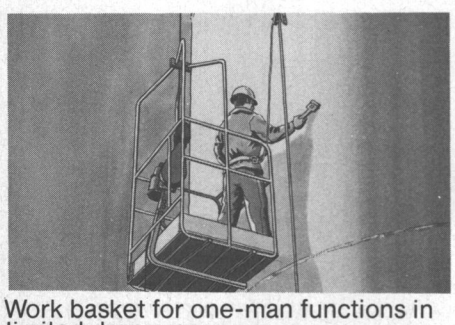
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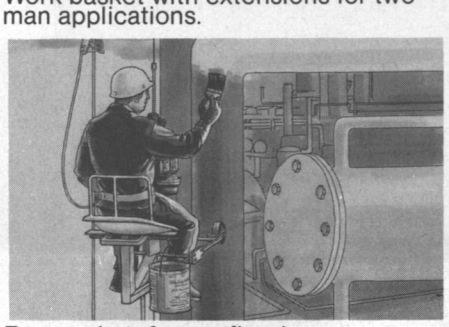
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ar Company, will cover "Handling Hawaiian Raw Sugar from Bags to Bulk."

7. **Bulk Handling Equipment—J.F. Martin,** president of Paceco Inc., will speak on "Continuous Unloaders, the Challenge-the Response"; Col. **W.T. Turner Jr.,** managing director of Burnside Agency, Inc., will talk on "Bulk Handling Equipment Problems—the User's Point of View"; **J.E. Livesay,** president of Pneumatic Systems, Inc., will speak on "Pneumatic Cargo Handling—the State of the Art"; **L. Tingskog,** president of A.B. Siwertell, will talk on "Screw Conveyors"; and **C.M. Rader,** vice president-Bulk Transport Division of Heil & Patterson, Inc., will speak on "Application of Rotary Railroad Car Dumping and Train Indexing Equipment."

Further information on the conference may be obtained by writing to ICHCA, c/o International Terminal Operating Co. Inc., 17 Battery Place, New York, N.Y. 10004, or by telephoning **Frank Nolan** at (212) 269-5910.

Rings And Pistons From Caterpillar— Questions And Answers

A new brochure is available that answers questions normally asked about Caterpillar-designed rings and pistons. The 16-page brochure highlights differences in manufacturing design and why Caterpillar uses special methods for ring and piston manufacture.

Because Caterpillar wants repeat buyers, they strive to provide long engine life, piston reusability, and low oil consumption. The brochure, Form No. PEDP8022, is available by writing **Jon Gullett,** Caterpillar Tractor Co., Parts and Service, General Offices, Peoria, Ill. 61629.

Northeast Marine Terminal Names Johnson Top Financial Officer

John W. Johnson, a leader in finance operations in ocean shipping and other major United States industries for more than a decade, has been elected executive vice president and chief financial officer for Northeast Marine Terminal Company, Inc.

The action by the board of directors was reported by **F.X. McQuade,** president of the Brooklyn, N.Y.-based stevedoring firm that is the largest multipurpose marine facility in the Port of New York and New Jersey.

"We are very pleased to have a man of the high executive caliber of **John Johnson** as part of our organization and part of the long-range company program to expand our terminal and the movement of ocean cargo through the Brooklyn waterfront," Mr. **McQuade** said.

Mr. **Johnson** previously served as executive vice president and chief financial officer for American Export Lines, and he also was treasurer/consultant for four years with States Marine International, Inc., a major operator of American and foreign-flag vessels in worldwide operations.

In addition, he was a principal in the accounting firm of Peat, Marwick, Mitchell & Co., controller for the Philadelphia Reading Corp. of New York, assistant controller with Ward Foods, Inc. of New York, and senior accountant with Arthur Anderson & Co. of New York.

Northeast Marine Terminal is a 140-acre marine complex located at the Foot of 39th Street on the Brooklyn side of the bistate seaport and directly off the main shipping channel. It has the capability of handling a mix of high productivity containerships, oceangoing barge vessels generally referred to as LASH types, roll-on/roll-off vessels and conventional breakbulk ships.

With its ideal location in the heart of the port — the nation's largest ocean cargo gateway — Northeast Marine has direct access to all modes of transportation, including modern express highways and an expanding network of railway services now being developed by the State of New York.

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Officials Cited For Safety Presentations

The Marine Section, National Safety Council, has cited 11 leaders in maritime accident prevention for outstanding presentations on issues of safety and programs for promoting the health of industry workers in the United States.

Capt. **Lars N. Pedersen,** general chairman of the Marine Section, reported that the group was selected by a special committee and honored at a ceremony at the Palmer House Hotel in Chicago, Ill., that was among the highlights of the three-day annual convention of the organization.

He said that three members of the group received the General Chairman's Award—the highest citation issued by the Marine Section—while special plaques were presented to the other speakers.

Among those receiving the General Chairman's Award were: **W.J. Puroski,** Mobay Chemical Company, Pittsburgh, Pa., for his paper on "Safety in Handling and Foaming Barges"; **Robert DeBenidictis,** Crane Inspection and Certification Bureau, Inc. of Orlando, Fla., for "Safety and the Hoisting Triangle"; and Capt. **Hugh M. Stephens,** Ships' Operational Safety, Inc., Port Washington, N.Y., for his presentation on "Safer Tank Entry."

Among other speakers who were cited were **Raymond L. Cunan,** Container Stevedoring Co., Inc., Emeryville, Calif., for "Container Operation Safety"; **E.B. Touchberry,** Santa Fe Engineering & Construction Co. of Orange, Calif., for "Safety on Offshore Pipelaying Equipment"; **Paul Poliak** of Madden & Poliak, Seattle, Wash., on "Economic & Insurance Impact on Recent Safety Trends"; and **Tom Wolfe,** Port Allen Marine Service, Baton Rouge, La., on "The Hazards and Safety Problems Involved with the Cleaning of Tank Barges."

Also cited were **John J. Hennessy,** Director of Alcoholism Program of New York Shipping Association-International Longshoremen's Association Medical Center of New York, Inc. on "The Impact of an Alcoholism Program on Safety"; **J.T. Wilson,** Columbus-McKinnon Corp. of Succasunna, N.J., on "Care, Use & Inspection of Hoists"; **James E. Feeny,** Dravo Corporation, Pittsburgh, Pa., on "Public Relations in Safety Does Work"; and Comdr. **William J. Ecker,** Chief Information & Analysis Staff of U.S. Coast Guard, on "A Safety Analysis of the Foreign Tanker Boarding Program."

Captain **Pedersen** reported that the selection committee for the Best Paper Awards ceremony was headed by Capt. **Bruno J. Augenti,** chairman of the board of Marine Index Bureau, Inc. of New York, N.Y.

It also included **William E. Coughlin,** assistant vice president of Universal Maritime Service Corp. of New York; **John A. Mathews** of Twin City Barge and Towing Co., St. Paul, Minn., and Capt. **Philip Neal** of Mobil Oil Corporation, New York.

The Marine Section is one of 28 separate industry groups that are part of the National Safety Council, and it is the largest organization in the U.S. maritime community engaged in the ongoing effort to reduce accidents and promote safety consciousness among workers throughout the industry.

Hoffert Marine Relocates Office Serving N.Y. Harbor

Hoffert Marine Inc. will relocate its New Jersey office that serves the Port of New York and New Jersey, to 265 Franklin Avenue, Nutley, N.J. 07110. The Hoffert Marine office was formerly located in Lyndhurst, N.J.

The move to the new location was made necessary by continued growth and need for expanded facilities, according to **William G. Glennon,** manager of the Hoffert Marine office.

Hoffert Marine Inc., suppliers of deck and engine equipment for merchant marine and Naval vessels, has headquarters in Jacksonville, Fla., and other offices in Norfolk, Va., and Houston, Texas.



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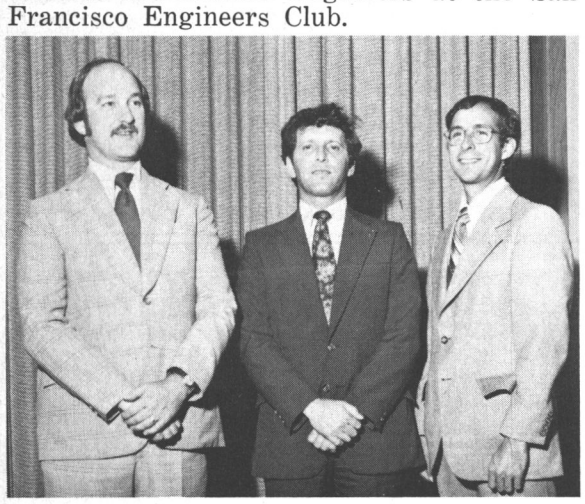
Capanoglu Of Earl & Wright Presents Tension Leg Platform Paper At SNAME Meeting

The paper, "Basic Design Principles for a Tension Leg Platform" by **C.C. Capanoglu** of Earl & Wright was presented to approximately 75 members and guests attending a recent dinner meeting of the Northern California Section of The Society of Naval Architects and Marine Engineers at the San Francisco Engineers Club.



At the San Francisco Engineers Club, left to right: **David C. Pritchard,** Chevron, Section chairman; **Cuneyt Capanoglu,** Earl & Wright, author, and **Peter Fisher,** Matson Navigation, Papers chairman.

The author described his firm's design for tension leg platforms capable of handling payloads equal to 3½ or 4½ times displacement. These units would be recommended for the Baltimore Canyon or areas from 1,200-1,400 feet in depth. The anchoring system proposed would be pretensioned risers of 60-inch by ¾-inch wall pipe.

The author describes testing and analysis which, among other things, indicated that the failure of one leg would cause greater stress than a "100-year" storm.

Cathodic protection would be relied upon for maintenance of structural integrity against corrosion.

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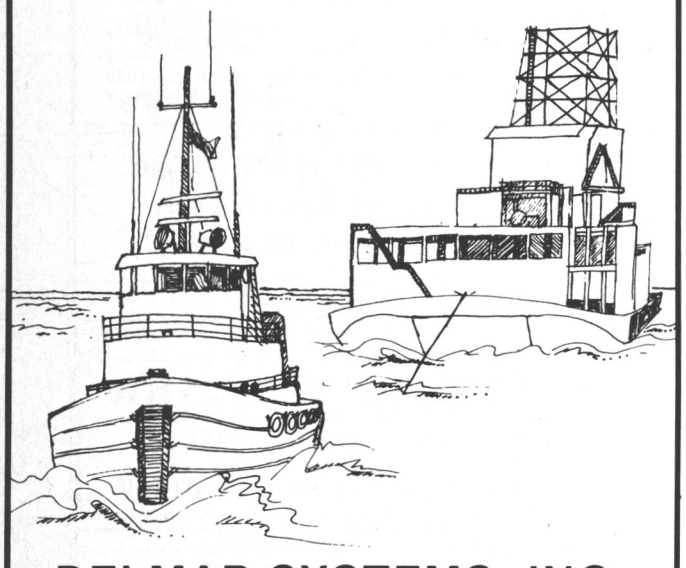

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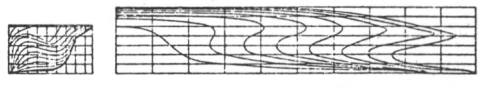

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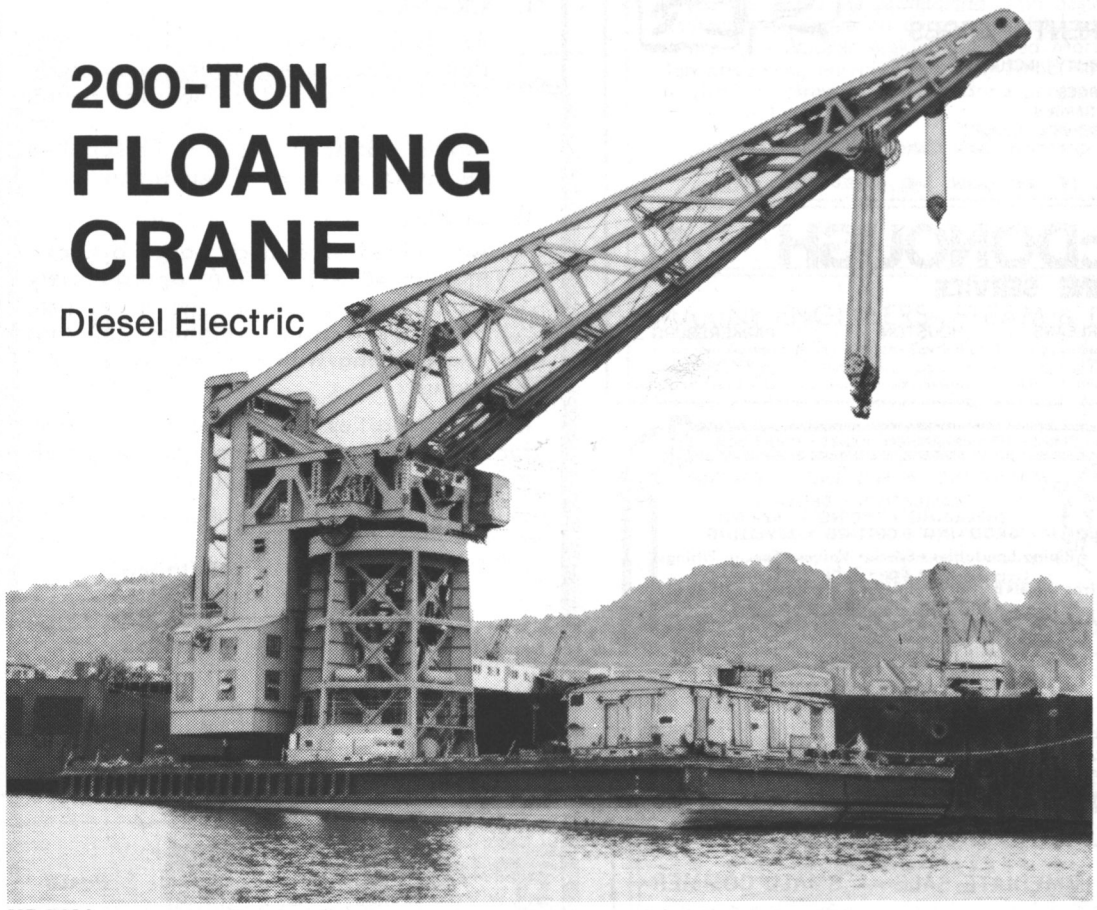

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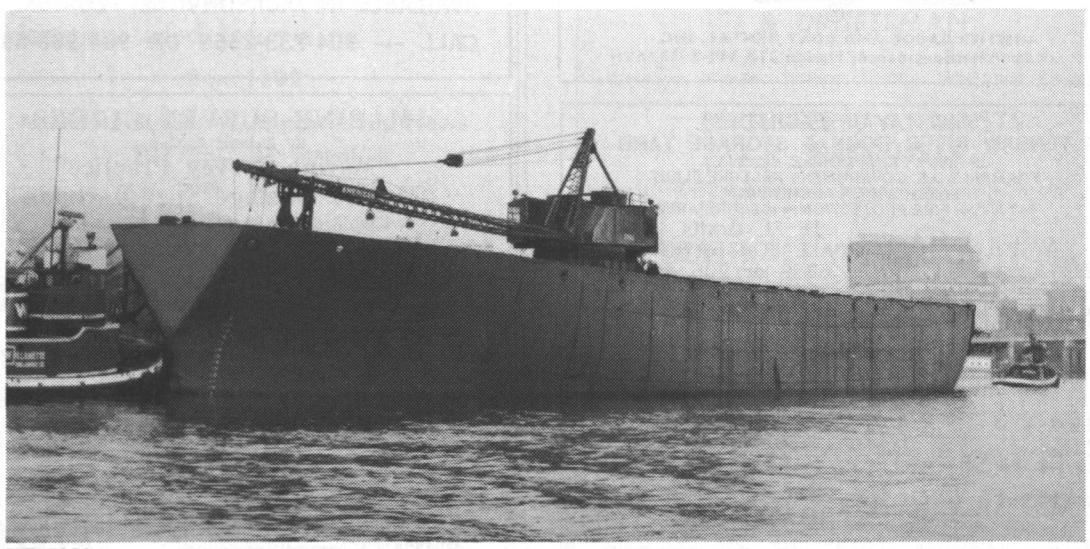

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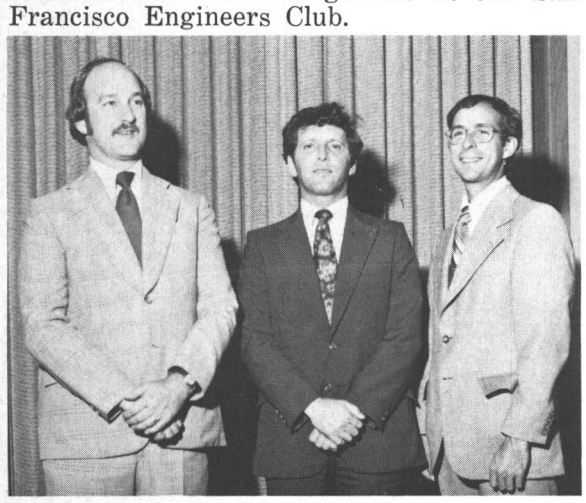

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Cathodic protection would be relied upon for maintenance of structural integrity against corrosion.

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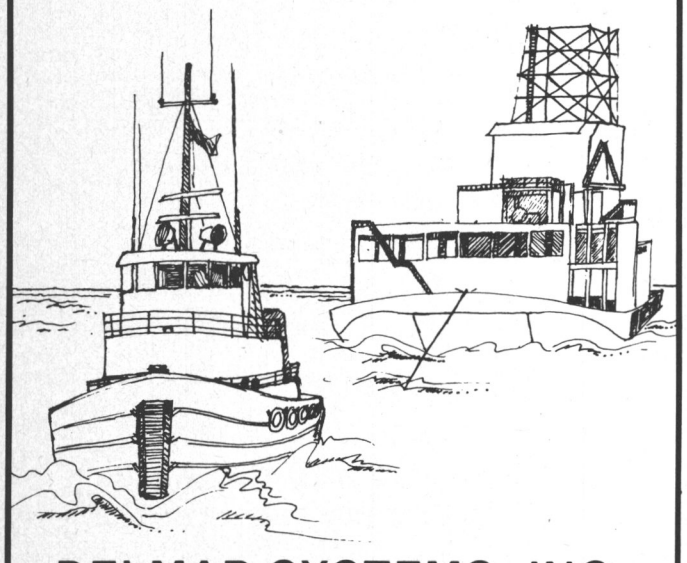

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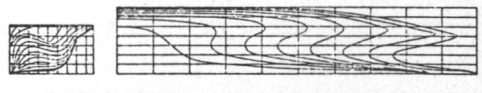

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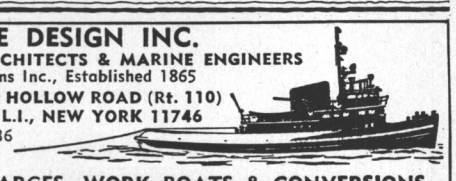

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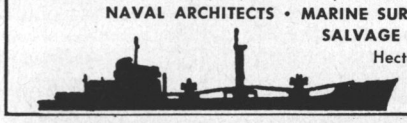

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Quality Assurance Program Offered To Steel Mills By American Bureau Of Shipping

A Quality Assurance Program for mass-produced rolled-steel products is being offered to steel mills worldwide by the American Bureau of Shipping (ABS). The steel products covered in the program are those used in the construction of ABS-classed merchant vessels and other marine structures.

The program is based on ABS monitoring of procedures and processes used by steel mills in manufacturing rolled-steel products. The monitoring of procedures and processes replaces the traditional witnessing by an ABS Surveyor of the mill's mechanical tests of finished products.

The Quality Assurance Program, administered by the ABS Metallurgy Department, consists of an initial plant survey, scheduled periodic quality reviews, and an annual plant survey. Steel mills participating in the program must provide the local ABS office with the test reports, as well as shipping statements regarding all ABS steels for which certification is ordered by a shipyard.

The initial steel plant survey will be conducted by the Metallurgy Department staff and an ABS Field Surveyor. Among the mill functions to be audited in the survey are general quality control procedures, primary manufacturing and heat treatment processes, testing facilities, reporting procedures, and final inspection procedures.

Results of the audit by ABS will determine if a steel mill is accepted into the Quality Assurance Program.

Scheduled quality reviews will be made by an ABS Surveyor between annual surveys. For large steel mills, periodic visits may be made weekly; for small specialty mills, the periodic visits may be made less frequently. The periodic surveys will focus on final operations, such as inspection and marking, and also on the testing laboratory. In addition, Surveyors will review mechanical test results and chemical analyses of steels on a continuing basis.

Annual resurvey of mill procedures and processes will be conducted each year in order for a mill to continue its participation in the program.

Inquiries concerning the Quality Assurance Program should be sent to the ABS, 45 Broad Street, New York, N.Y. 10004.

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.

Gibbs & Cox Receives OTEC Design Contract

The Department of Energy has awarded a contract to Gibbs & Cox, Inc. for system engineering studies of alternative ocean platforms to support the modular installation of Offshore Thermal Energy Conversion (OTEC) power systems in the 10 to 40 megawatt range. The one-year contract with two one-year options will include investigations of moored spar and barge configurations to support developmental OTEC equipment. The OTEC concept uses the temperature differential between surface and deep-water to evaporate and condense ammonia as a working fluid to power turbogenerators.

The studies will evaluate alternative concepts for the platform and the Cold Water Pipe (CWP), which brings seawater from a depth of about 3,000 feet to the power system. Areas of particular concern include platform and CWP materials and dynamic loads, mooring system requirements, construction and deployment concepts and assessment of cost, schedule and related risk. Conceptual designs will be prepared for optimum spar and barge designs to support the preparation of the OTEC 10/40 Requests for Proposal to be issued in early 1979. Follow-on studies are planned relating to preliminary design and model tests of selected options.

Robert Scott, assistant head of the Gibbs & Cox, Inc. Washington Division, will act as project manager. ABAM Engineers, Inc., Burns and Roe, Inc., Dravo Corporation, Giannotti & Buck Associates, Inc., A.C. McClure Associates, Inc., and Tokola Offshore, Inc. will provide subcontractor support.

National Cargo Bureau Promotes H.R. Rosengren

Capt. **S. Fraser Sammis**, president of National Cargo Bureau, has announced the promotion of Capt. **Harold R. Rosengren** from deputy chief surveyor, Atlantic ports, to senior deputy chief surveyor.

Captain **Rosengren** was employed by the Bureau in 1969, and has been in his present position since 1975. He is a graduate of Pennsylvania State Nautical School, and has studied at New York University and Hunter College.

In addition to assisting the chief surveyor in this new position, Captain **Rosengren** will continue to monitor the activities of the Atlantic Coast ports, and coordinate the Liberian and Panamanian inspection activities conducted by the Bureau.

The National Cargo Bureau is a nationwide, nonprofit, membership organization dedicated to the safe stowage, securing and unloading of cargo on all types of vessels. It formulates recommendations to governmental agencies on safe stowage of dangerous goods, grain and other cargoes, and offers low-cost loading inspection surveys (breakbulk and container) as well as inspection of cargo-handling gear.

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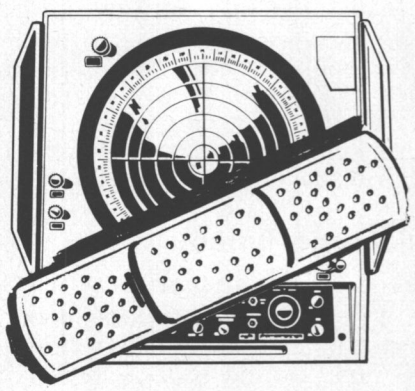

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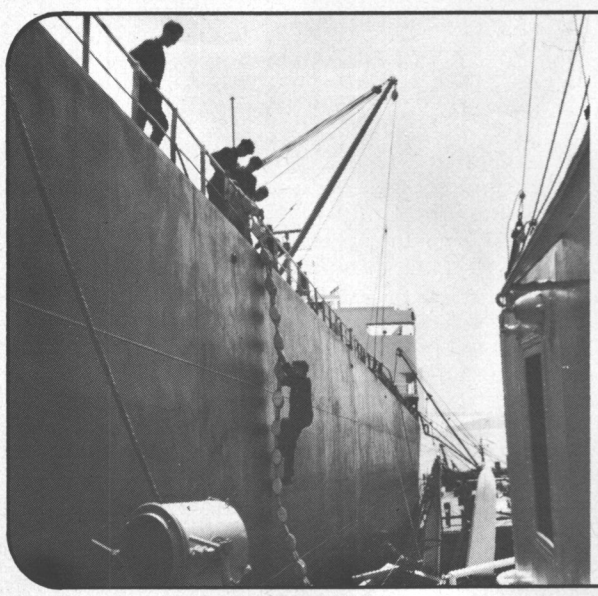

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Star Lines Names Ansari Vice Pres./Iranian Sales

Jeffrey M. Driesen, vice president, marketing and sales of Star Lines Shipping Co., Inc., has announced the appointment of **Hassan Ansari** to the position of vice president/Iranian sales.

Commenting on the appointment, Mr. **Driesen** said, "Mr. **Ansari's** appointment reflects our continued growth in the Middle East trade, where we are the single largest container carrier in Iran."

Mr. **Ansari** previously served as executive director for Arya National Shipping Lines in the United States. Prior to this association, he served in numerous positions within Iran, working directly for the Iranian Government, including serving as Deputy Managing Director for the Industrial Management Institute in Teheran and Director General of the Budgeting, Organization, and Methods Bureau for the Ministry of Economy.

In his new position, Mr. **Ansari** will concentrate on Iranian Government sales, both in the military and commercial areas.

Mr. **Driesen** noted that Mr. **Ansari** joins **William Decker** and **Frank Monteleone,** who currently represent the Star Lines sales force.

Star Lines' multipurpose container vessels provide service between New York, Baltimore, Norfolk, New Orleans, and Houston to Bandar Shahpour, Iran, as well as Dammam, Saudi Arabia.

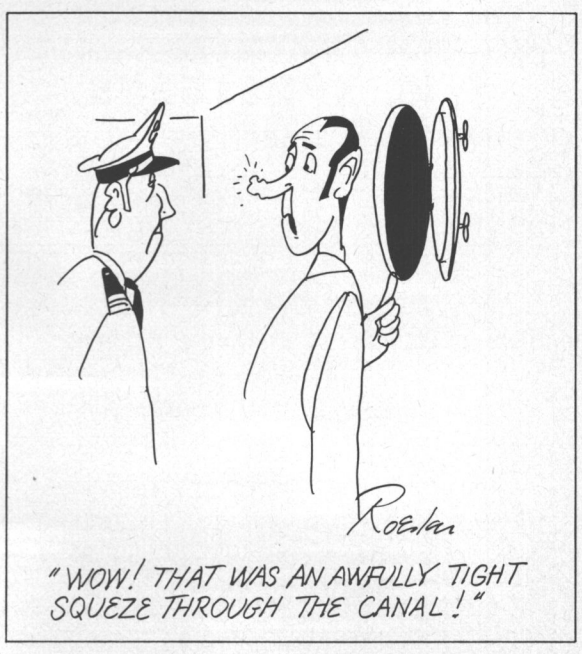
Its recently established West Coast land bridge makes it possible for West Coast shippers to get their goods to the Persian Gulf with an ocean transit time of 23 days.

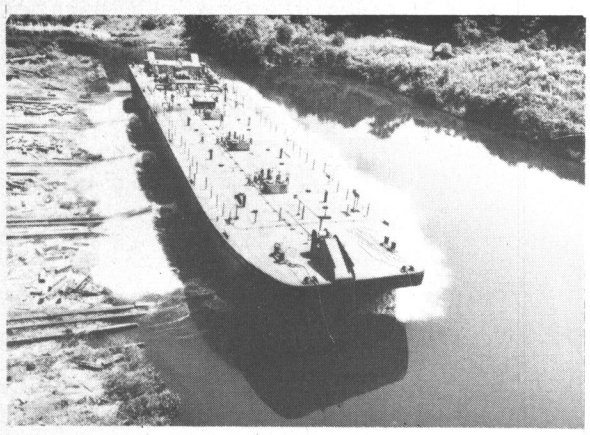
American Marine Services Appoints Capt. David Downs

American Marine Services, Inc., One Exchange Place, Jersey City, N.J. 07302, has announced the appointment of Capt. **David R. Downs** as head of the Hull & Machinery Department. Captain **Downs** has over 10 years' experience as a hull and machinery surveyor with U.S. Salvage Association.

With the acquisition of Captain **Downs,** American Marine Services, Inc., which has offices and affiliates in every major port on the East and Gulf Coasts, is now fully equipped to handle all types of surveys ranging from Hull/Machinery, Cargo, Oil Pollution, Personal Injury and Containers.

American Marine Services, Inc., represents fleet owners, charterers, hull underwriters and P&I Clubs.





SECOND FOR REINAUER — Equitable Shipyards, Inc., New Orleans, La.-based shipbuilder, launched on September 1, 1978, the second in a series of two 227-foot by 43-foot by 15-foot oil barges which are being built for Reinauer Transportation Company, Inc., Newark, N.J. The barges will handle Grade A and lower product. The barges are built to ABS ocean service rules and for manned service. The first of these barges was accepted by Reinauer on the same date. Equitable is a wholly owned subsidiary of Trinity Industries, Inc. of Dallas, Texas, a manufacturer of industrial marine and structural metals products.

Tenneco Oil Company To Use Port Of Savannah As Base For Offshore Oil And Gas Operations

Tenneco Oil Company, Houston, Texas, has announced that it will use the port of Savannah, Ga., as a base for the oil and gas exploratory operations it plans to conduct in the Southeast Georgia Embayment area of the Atlantic Ocean.

A spokesman said Tenneco Oil intends to use facilities at the Sayler Marine Corp. in Savannah for supply boat docking and for the storage of drill pipe and other materials.

Tenneco Oil was the successful bidder on eight Southeast Georgia Embayment tracts totaling 45,544 acres in the federal lease sale last March. It holds full interest in seven of the leases and a 75 percent interest in the eighth.

Permit applications have been filed with the U.S. Army Corps of Engineers on four of the lease blocks. An environmental report and an exploration plan have been filed with the U.S. Geological Survey on one of these four, and will be filed soon on another.

Additionally, a national pollution discharge application has been filed with the Environmental Protection Agency.

Current plans call for drilling to begin on one of the leases in early 1979.

Irish Firm To Offer New Boeing Jetfoil Service

Jetlink Ferries Limited of Dublin, Ireland, has announced it will begin Boeing Jetfoil service across the English Channel from Brighton, England, to Dieppe, France, in May 1979, under the name SEAJET.

This is the second Jetfoil service for Europe to be announced this year, and the fourth purchase of the new Boeing Jetfoil model 929-115. Nine 929-100 model Jetfoils are already in service worldwide. The new model has increased payload capability and improved maintainability and reliability features. Jetlink also holds an option on a second Jetfoil. They plan a two-Jetfoil operation in 1980.

The first craft is being purchased by Associated Newspapers Group of London, England. They will also hold a substantial part of the equity in the operating company to whom the Jetfoil will be leased.

Earlier this year B + I Lines of Dublin announced the purchase of a Jetfoil to begin operation from Dublin to Liverpool, England, in April 1980. Sado Kisen Kaisha of Niigata, Japan, purchased a new model Jetfoil in April to add to their present Jetfoil service in the Sea of Japan. The Royal Navy of the United Kingdom will receive a Jetfoil in late 1979 for use in North Sea fisheries protection.

The SEAJET service will carry 285 passengers the 68-nautical-mile distance from Brighton to Dieppe in just over one and a half hours. Total value of the order, including spares, operational and maintenance training and shipping is approximately $12 million.

Other Boeing Jetfoils are in service in Hong Kong and Venezuela. The Jetfoil's unique combination of fully submerged foils, automatic computer control and waterjet propulsion gives passengers a smooth ride at 43 knots (50 mph) even in rough water.

The SEAJET service is expected to create substantial new markets not only from the existing high levels of tourists in both Brighton and Dieppe, but also from the business travel section. Both locations are served by high-speed rail services from London and Paris and also enjoy excellent fast road links with the capitals.

John Coote, a Jetlink Ferries executive, said the SEAJET service "would be able to move vacationers, businessmen and visitors from Brighton to Dieppe in style and comfort at budget prices.

"From the research we have carried out, it seems certain that SEAJET will be one of the great success stories in both British and French tourist industries," he said.

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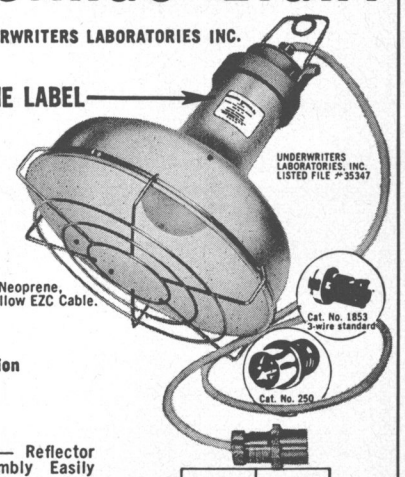

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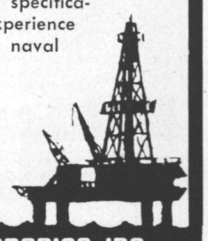

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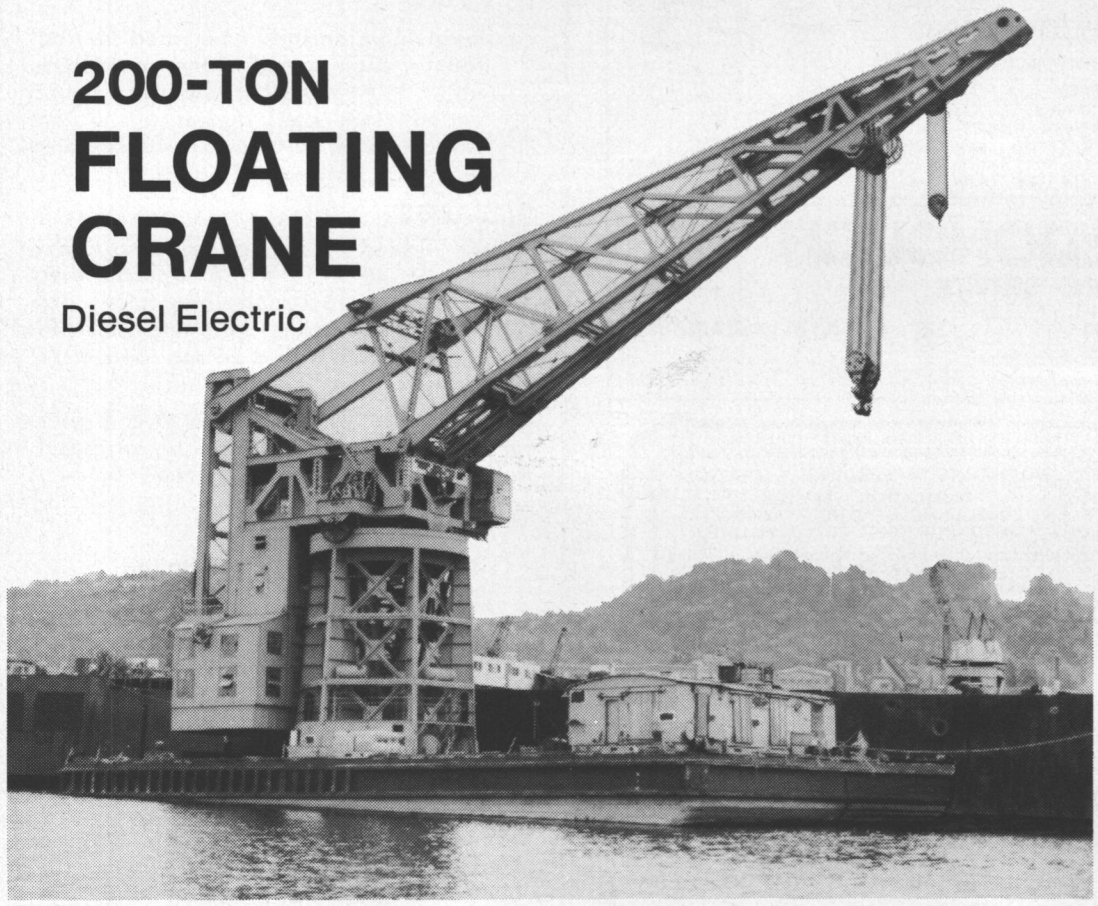

MR 7601

VESSEL CHARACTERISTICS
200-TON LIFTING CAPACITY

LENGTH OVERALL ..... 140 FT.
BEAM ..... 84 FT.
DRAFT ..... 7 FT.
LIGHT DISPLACEMENT ..... 2,334 TONS
ALL STEEL CONSTRUCTION
ELECTRIC REVOLVING TYPE — FULL 360°
WEB BOOM ..... 146 FT.
MAIN HOIST: 200-Ton—By 2 only, 8 part blocks. Each block carries 2,050 ft. of 1½", 6 x 37 I.P.S. wire rope (New).
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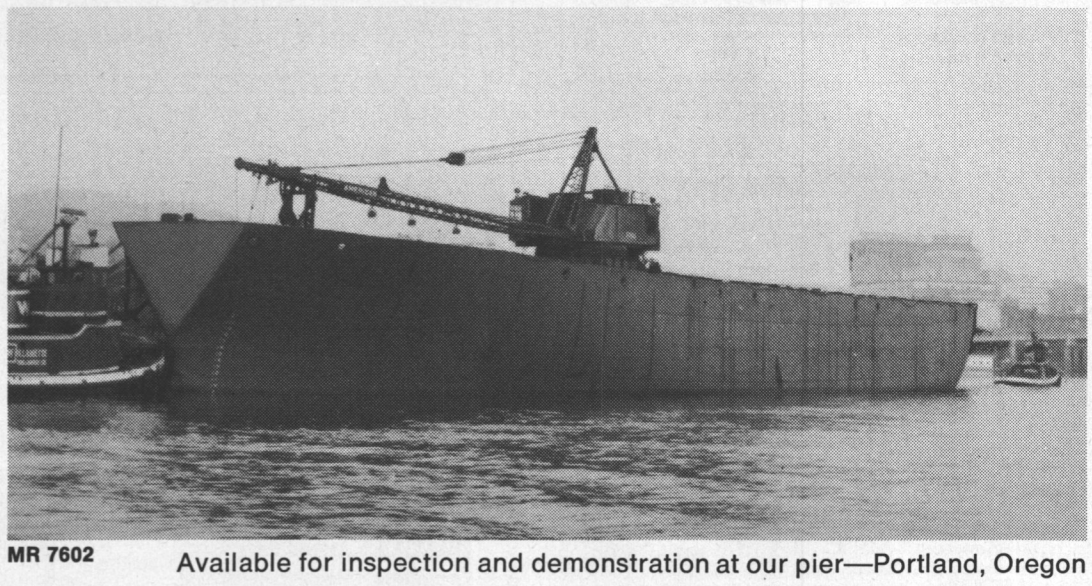

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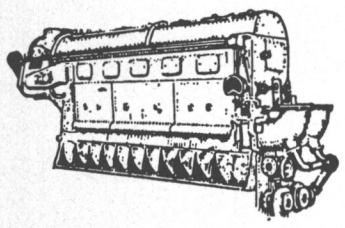

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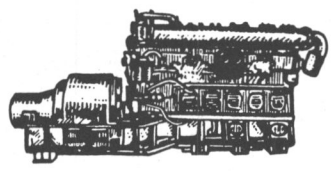
2—SUPERIOR Diesel Engines . . . Model GBD8 Marine, 150 HP, 1200 RPM, 8 cylinder, with Delco Generators, 100 KW, 120/240 DC.

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

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A. C.

4 — 1250 KW, GENERAL ELECTRIC Turbines: Type FSN, 525 PSI, 7938 RPM. Generators: 1250 KW, 450/3/60, 3600 RPM, Type ABT2.

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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.

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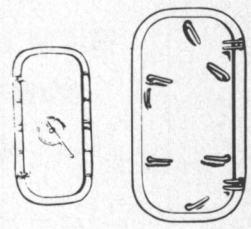
Used, Good Condition, Trimmed Frames.



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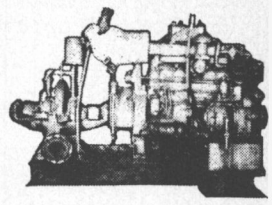
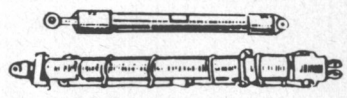
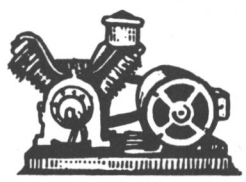


2—BUDA, Model 6-LD-468, Diesel Engine 6 cylinders, 100 BHP, Marine, Gardne Denver, centrifugal Pumps, Bronze, ho zontally split case, 1000 GPM, 280′ head, suction and 5″ discharge.

HYDRAULIC CYLINDERS



Bore	Overall Stroke	Rod Diameter	Retracted Length	Action
10″	12″	3.75″	45½″	double
10″	26″	3.75″	58½″	double
2″	8″	1½″	20″	double
2.5″	15″	1.12″	25½″	double
3″	8″	1.37″	15½″	double
6″	8″	4″	144″	double



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1—GARDNER-DENVER, 150 CFM, 125 PSI, Class WB, Size 7x5¾x5, 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.

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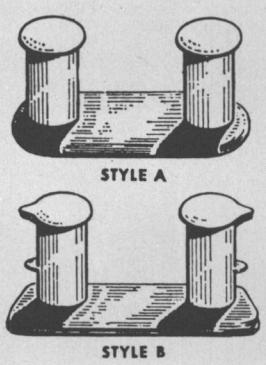

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4 Ea. — G.M. 3-268-A 143 HP Gen. 100 KW, 450 V. AC, 3 Ph., 60 Cycle.

M.A.N. Diesel Type-G6V42
225 KW 230 V DC

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4 Ea. — 775 KW Gen — 675 R.P.M. 250 V DC Driving

4 Ea. — 960 H.P. Motors 250 V — DC Driving

2 Ea. — Farrell Birmingham Gear Double Input Single out 3,957:1

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Length 269' x 64' x 25'
Diesel Electric 10,000 H.P.

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2 Ea. — Generator — G.E. 2700 VAC, 93.3 Cycle, 3 Ph. Type ABT-2, 4600 KVA, 4600 KW, 5600 RPM.

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TURBINES — D.C.

Crocker Wheeler Generator D.C., 300 KW, Size 102 HD-DP Type CDC, 1200 RPM, V-240-120 AMP, 1250-312 Joshua Hendy-Reduction Gear and Turbine.

Allis Chalmers D.C. Generator — 300 KW — Falk Reduction Gear.

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10 Ea. — Pump Vickers — Tandem Type 350 CPM, 985 PSI, 900 RPM.

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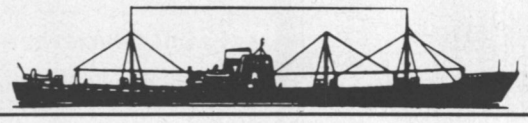

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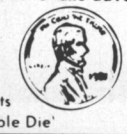

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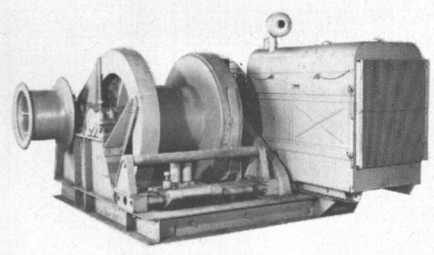
BAYARD TOWING WINCH WIREROPE WINDLASS



12,000 lbs at 38.5 feet per minute. 2176 lbs at 170 feet per minute. Drum diameter 22"—drum width 18½"—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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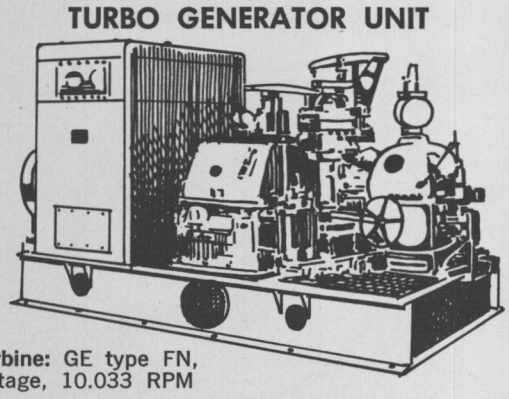
TURBO GENERATORS

750 KW GENERAL ELECTRIC TURBO GENERATOR UNIT

Turbine: Type FN3-FN24, seven (7) stage, 10033 RPM. **Reduction Gear:** Single helix, single reduction, 10033/1200 RPM. **Generator:** 750 KW, Type ATI, 450 V, 3 phase, 60 cycle. Steam conditions 525 lb. psi gage at 825 degrees F. total temp. at throttle and one (1) lb. psi absolute back pressure at turbine exhaust flange.

600 KW GENERAL ELECTRIC TURBO GENERATOR UNIT



Turbine: GE type FN, 6-stage, 10.033 RPM

Reduction gear: GE triple-helix, triple reduction, 10033/1200 RPM. **Generator:** GE type, ATI, 600 KW, 6-pole, 0.8 pf, 450 VAC, 3 phase, 60 cycle, 1200 RPM. **Exciter:** GE type MPLI, 7.5 KW, 120 VDC, direct connected. **Air cooler:** Surface type, for generator, complete with control panel.

538 KW WESTINGHOUSE TURBO GENERATOR UNIT

Complete with L.O. Coolers and exciters. **Turbine:** Westinghouse 538 KW, 5010 RPM. Inlet pressure 435 psi. Temp. 750 degrees F.TT. Exhaust pressure 28½ hg. vac. **Generators:** (1) 400 KW, 450 VAC, 3 pole, 60 cycle, PF 80%, 1200 RPM, ship's service. (2) 32.5 KW, 125 VDC, 1200 RPM, variable voltage exciter. (3) 110 KW, 125 VDC, 1200 RPM, constant voltage generator. (4) 5 KW, 125 VDC, 1200 RPM, ship's service Generator-Exciter. **Reduction Gear:** Ratio 5010/1200 RPM.

535 KW GENERAL ELECTRIC TURBO GENERATOR UNIT

Complete with L.O. Coolers and exciters. **Turbine:** General Electric Mfg. drawing P-8453535, 3 stages, type DORV-325, 5645 RPM, rating 535 KW, inlet pressure 590 lbs., Superheat 325 degrees F., exhaust pressure 1¾ ABS. **Reduction Gear:** General Electric, type S-162-D, Class, 535 KW, Mfg. dwg, T-8453535, 5645/1250 RPM. **Generator:** General Electric, Dwg, T-8453535, type ATB-976, KNA 500, 450 volts AC, 3 phase, 60 cycle, 400 KW, 642 amps, 1200 RPM, PF .8, Frame 976, Exciter 120 volts DC. Control panel: General Electric, Dwg. 6367270, Type XF-100492, 6 circuits, 450 volts AC.

525 KW GENERAL ELECTRIC AUXILIARY TURBO GENERATOR UNIT

Complete with L.O. Cooler. **Turbine:** General Electric 525 KW, Type DORV-325M, 5645 RPM. **Reduction Gear:** General Electric Type S-162-D, 5645/1200 RPM, single helical. **Generators:** General Electric. (1) Type ABT, 3 phase, 400 KW, 450 VAC, 1200 RPM. (2) Type MPC, 75 KW, 110 VDC, 1200 RPM, Exciter. (3) Type MPLI, 55 KW, 120 VDC, 1200 RPM, Generator. (4) Auxiliary DC generators.

CENTRIFUGES

DeLaval, Type 1716, Serial No. 2562983, RPM 750
Westfalia, Type ON 1516, Serial No. 1647991, RPM 9450, Heavy Liquid 1.1 kg/dm³, Solids 1.1 kg/dm³.

PROPELLER

Koppers Mfg. Co., solid, 4-bladed, right hand, dia. 19'6", pitch 17'5" at 6.5 R.

STRIPPER PUMP

National Transit, horizontal rotary, GPM 400, disch. head 100', with motor.

STRIPPER PUMP

Worthington, vertical duplex, GPM 700, disch. head 100#, 14" x 12" x 12".

ANCHOR WINDLASS

American Engineering Co., triple spur geared with double horizontal steam cylinders, 12" x 14", steam press. 175#/sq. in.

MAIN FEED PUMP

Pump: Coffin Turbo Pump Co., single stage, centrifugal, size CG-12A, 6980/7030 RPM, 240/280 GPM, 254/280 HP, 6" x 3", 750 psi @ 1760 ft. head, complete with turbine, w/A.B.S. **Price: $9,700.00**

MAIN FEED PUMP

Coffin, turbine drive, Type F, 7200 RPM, 200 GPM, 150 HP, 150 psi w 1329 ft. head.

Mission and Standard T2SEA1

MAIN TURBINE

G.E. 4925/5400 KW, 3600/3715 RPM, Steam press. 435#, temp. 720°F, exh. press. 1.75", 10 stages.

MAIN GENERATOR

G.E. Type ATB-2, Form HL, 3 phase, 60/62 cycles, 2300/2370 volts, 4925/5400 KVA, 3600/3715 RPM, 1237/1315 armature amps, 1.0 PF, excitation amps 100, field amps 155/160 cent. duty 60°C, armature 85°C.

SWITCHBOARD — MAIN

G.E. Model 43A1.

POWER TRANSFORMERS

G.E. Type H, Form RA, 60 cycles, voltage rating 2300/400/450, 450°C rise.

BILGE PUMP

National Transit, horizontal, rotary, GPM 200, dis. head 40#, with motor.

MAIN CARGO PUMP

Ingersoll Rand, horizontal cent. GPM 2000, disch. head 280', with motor.

MAIN CIRCULATING PUMP

Ingersoll Rand, vertical centrifugal, GPM 14,000, disch. head 25', with motor.

MAIN STEERING UNIT

2 — motors, G.E. Model 5K444 PMI, 220/440 volts, Type, FL, 30 amps, 3 phase, 60 cycle, 20 HP, 700 RPM, Code H, cont. 50°C.
1 — Hele-Shaw pump, American Engrg., Size SLP, 850 RPM, Press. 1000#.
1 — Gear box, American Engrg., MA3
1 — Telemotor, American Engrg.

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885 HP, 700/950 RPM, 230 V, 3085 amps, 120 V excitation @ 60°C rise. Shunt wound. Self aligning roller bearings. **DC Generator** for use with above motor for variable speed control constant torque also available. Rated 710 KW, 230 volt.

Ideal for drilling rig operation

NEW MAIN MOTOR FOR T2

Gen. Elect. #5690714 Type TSM-80, 6000 HP, 90 RPM, form H.L., 2300 volts. Amps. arm. 1160, P.F. 1.0., KVA 4625 phase 3 cycle 60, exciter volts 120, amps field 390 contin. @ 60°C. rise. Spare coils available (stator).

T2 RUDDER — w/A.B.S. CARGO STRIPPING PUMP

Worthington (steam). Size: 16" x 14" x 18" 1400 GPM @ 110 psi. Bronze liquid end.

PUMP — AUXILIARY CIRCULATING

Warren, Size & Type 14-DBV-16, 690 gpm, 25 ft. he., 6500 RPM with motor.

PUMP — FUEL OIL SERVICE

DeLaval Imo Pump, 42 GPM, 1750/870 RPM, 375 psi disch. with motor.

PUMP — BILGE & BALLAST

Warren, Steam reciprocating, 12" x 8½" x 12" vertical duplex, 275 gpm, with motor.

BUTTERWORTH HEATER

Ross heat exchanger, surface 705 sq. ft., salt water heater.

Design press.	tube 250	shell 150
Hydro press.	500	300
Design temp.	300	480

LUBE OIL COOLER

Davis Engineering Corp., "Paracoil", 2X156C, Shell test 120#, Tube test 100#.

PUMP — BILGE & BILGE PRIMER

Buffalo Forge, Size 4", 600 GPM, 1750 RPM, 13.5 BHP, Type or Model SL, Total head 30 psi, 10" dia. imp. 50 psi, with motor.

MAIN CARGO PUMP UNIT

Pump: Ingersoll Rand, type 2 stage horizontal, size 6-GTM, 1750 RPM, 2000 GPM, 12" x 12", 100 psi @ 280 ft. head. With motor.

FUEL AND LUBE OIL PUMP

Pump: Quimby, size 2½ head screw, 1200/600 RPM, 15 GPM @ 325 psi disch. press. **Motor:** General Electric, Model 5KF364PP1, Frame 364, 7.5/3.75 HP, 1160/580 RPM, 440 volts AC, 10/9.7 amps, 3 phase, 60 cycle, complete with controller.

LUBE OIL SERVICE PUMP

Pump: Quimby, Type vertical rotex, size 4-B, 1150 RPM, 175 GPM @ 60 psi with 20 ft. head, 6" x 5". **Motor:** General Electric, Model 5KF365AJX1, Frame 365, 5 HP, 1170 RPM, 440 volts AC, 20 amps, 3 phase, 60 cycle, complete with controller.

MAIN CONDENSATE PUMP

Pump: Ingersoll Rand, size 2VHM, 1760 RPM, 180 GPM @ TDH 165 ft., 5" x 2", disch. press. 67 psi. **Motor:** General Electric, Model 5KF365AJN-1, Frame 365V, 20 HP, 1765 RPM, 440 volts AC, 3 phase, 60 cycle, 25.5 amps, with controller.

MAIN CIRCULATING PUMP

C4, Warren type. 24 MFP, 18000 GPM, 690 RPM, 16 TDH vertical w/150 HP, 440/3/60 motor w/spare parts.

ORIGINATING FROM 70,000 DWT TANKER BARRACUDA CLASS

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Newport News Shipbuilding & Drydock Co., HP 13,500 SHP @ 5851 RPM, LP 10,210 SHP @ 3286 RPM.

ANCHOR WINDLASS

American Engineering Co., 13" x 14", Chain speed 30 fpm, Inlet steam 135-175 psi.

TURBINE-GENERATOR 1000 KW

Turbine: DeLaval, 7 stages throttle steam, 825 psig, 850°F, Exhaust 1.75 in Hg ABS, 9313 RPM, Atmo. relief valve, 2 psig. **Reduction Gear:** DeLaval single reduction, pinion 9313 RPM, Gear 1200 RPM, speed ratio 7.761:1.

DISTILLER PLANTS

Griscom-Russell, Horizontal Low pressure, Double effect. Single effect capacity 9250 gpd, Clean tube capacity 12,000 gpd.

PUMP — CARGO TANK BALLAST

Ingersoll-Rand Centrifugal, Size 10 HLV, hydraulic test 200 **Turbine:** G.E. Marine, Model No. 7TDPY125MR72, 600 HP, 5923 RPM, Steam press. 775-800, Max. 535°F TT, Exh. 17.9. **Reduction gear:** G.E. Type S-233, Form AE, Class 600 HP, 5923/1860 RPM.

PUMP — MAIN CIRCULATING

Warren Pump Co., Size & Type 30-SLMV, cap. 22,500 gpm, 25 ft. head, 500 RPM, with motor.

PUMP — MAIN CONDENSATE

Warren Pump Co., Size & Type 4-2CVP-13, 380 GPM, 280' head, 1750 RPM, with motor.

PUMP — AUXILIARY CONDENSATE

Warren, Size & Type 4-2CV-P-13, 380 gpm, 280 ft. hd., 1750 RPM with motor.

PUMP — MAIN FEED

Pacific Steam Turbo Pump, Size 2" x 6" x 4" x 8", Type TBA, 9600 RPM, 730 HP, 660 gpm, 2625 ft. hd., 35 NPSH. Ft., **Governor:** Woodward #A033304, Drive shaft speed 700-900, RPM control air pressure 25-5 psi.

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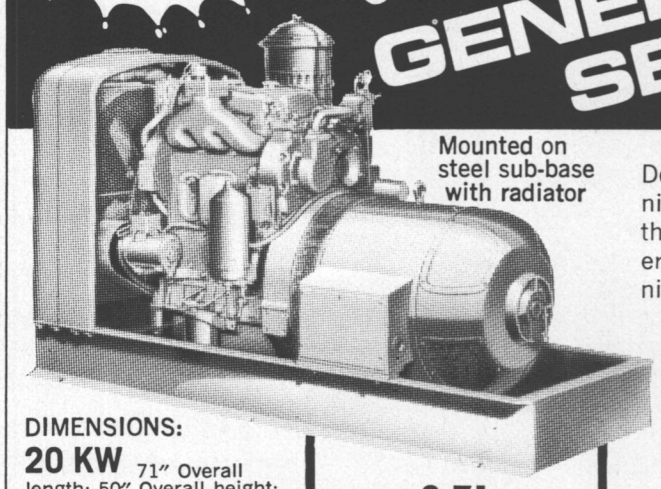
20 KW GM 2-71 & 30 KW GM 3-71
RADIATOR COOLED DIESEL GENERATOR SETS



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20 KW 71" Overall length; 50" Overall height; 33" Overall width. Weight about 2200 lbs.

30 KW 83" Overall length; 46" Overall height; 33" Overall width. Weight about 3500 lbs.

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220 / 440 Volts — single phase 60-cycle — 1200 RPM — 0.8 PF. Generators are Delco or Electric Machine Co.

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GM 2-71
$3150
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CLEAN BRIGHT BRASS
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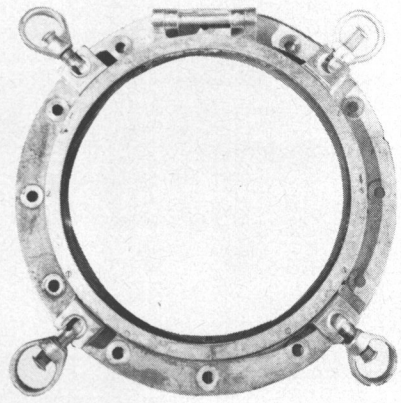

Recently carefully hand removed from ocean vessels. Suitable for re-use on shipyard conversions or for marine ornamental use. Heavy marine standard glass . . . clear or can be furnished frosted for use in special locations. Have ½" spigots—depth over dogs 7"—overall diameter from 20½" to 22½". Bolt circle approx. 19½" —12 holes—⅝"—width of flange about 2"—62 lbs. Because each ship varies somewhat in portlight dimensions, all above dimensions are approximate.

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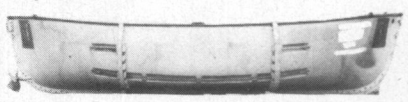
FIBERGLASS LIFEBOATS
BUILT TO ABS SPECS
by "ANCAS" — Arendal, Oslo



(3) Oar Propelled Lifeboats—38 person—384 CBF #3806—24' x 7' 10½" x 3.2' 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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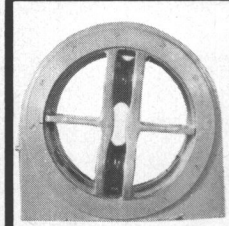

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MOORING CHOCKS

For 1½" wire. With mounting brackets for deck. With cable guide sheave not visible in photo. When they leave our plant, they are reconditioned, ready for use. Mfg by Friedrich Kocks—from ex-ARCO "CHALLENGER".

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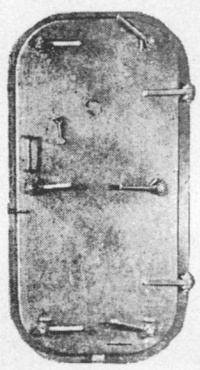
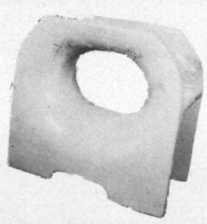
With Stainless Steel Dogs



6-Dog right and left hand hinged doors with frames. Constructed of 1/4" steel plate and meet Coast Guard regulations for above deck as well as below deck use. All dogs are bronze bushed.

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

IMMEDIATE DELIVERY



NEW 7" RADIUS PANAMA CHOCKS
(MEET PANAMA REGULATIONS)

With extended legs for welding to deck. 14" Wide on base — length 28" — height 27¼". IMMEDIATE DELIVERY FROM STOCK.

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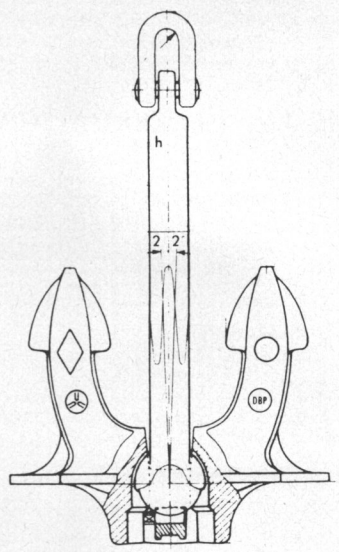

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Seacoast Electrical Supply Corp., 225 Passaic St., Passaic, N.J. 07055

CARGO TRANSFER & ACCESS EQUIPMENT
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016

CHOCKING SYSTEMS
Philadelphia Resins Corp., 20 Commerce Drive, Montgomeryville, Pa. 18936

CLOCKS
Wempe Chronometerwerke Germany, Stubbenhulk 25 2000 Hamburg 11, Germany

COILS—Cooling, Heating, Ventilating
Colmac Coil, Inc., Colville, Wash. 99114

CONTAINERS—Cargo Container Handling
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

CONTAINER LASHINGS & COMPONENTS
Line Fast Corp., 805 Grundy Ave., Holbrook, N.Y. 11741

CONTROL SYSTEMS
The Bendix Corporation, 1400 Taylor Avenue, Baltimore, MD 21204
Delaval Turbine Inc., (Gems Sensors Div.) Spring Lane, Farmington, Conn. 06032
Foxboro Marine Operations, P.O. Box 435, Burlington, Mass. 01803
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
Marine Electric RPD Inc., 166 National Road, Edison, N.J. 08817
National Marine Service, Inc., 1750 Brentwood Blvd., St. Louis, Mo. 63144
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.

CORROSION CONTROL
Carboline Co., Marine Div., 350 Hanley Industrial Court, St. Louis, Mo. 63144

CRANES—HOISTS—DERRICKS—WHIRLEYS
Clyde Iron, a unit of AMCA International Corp., Suite 200/ Stockton Bldg., University Office Plaza, Newark, Del. 19702
AB Hagglund & Soner, Rep. in U.S.A. by Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523
M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07087
Marathon LeTourneau Company, P.O. Box 2307, Longview, Texas 75601
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

DECK COATINGS—Non-skid
American Abrasive Metals Co., 460 Coit St., Irvington, N.J. 07111

DECK COVERS—Chain Pipe
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
Mechanical Marine Co., 900 Fairmount Ave., Elizabeth, N.J. 07027

DECK MACHINERY—Cargo Handling Equipment
AB Hagglund & Soner, Rep. in U.S.A. by Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523
Markey Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134
New England Trawler Equipment Co., 291 Eastern Ave., Chelsea, Mass. 02150

DIESEL ACCESSORIES
B & W Marine Service, One State Street Plaza, New York, N.Y. 10004
General Thermodynamics Corporation, 150 Ballardvale St., Wilmington, Mass. 01887

DIESEL ENGINES
Alco Power Inc., 100 Orchard St., Auburn, N.Y. 13021
Burmeister & Wain, One State Street Plaza, New York, N.Y. 10004
Caterpillar Tractor Co., Industrial Division, Peoria, Ill. 61629
Colt Industries' Fairbanks Morse Engine Division, Beloit, Wisc. 53511
Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231
Indeck Power Equipment Co., 1075 Noel Ave., Wheeling, Ill. 60090
M.A.N. AG Werke Augsburg Postfach 10 00 80 D-8900 Augsburg 1 Germany
Mitsui Engineering & Shipbuilding Co. Ltd., 6-4 Tsukiji, 5-chome, Chuo Ku, Tokyo, Japan
Oosterhuis Industries Inc., 1800 Engineers Road, Belle Chasse, La. 70037
Power & Propulsion Systems, Inc., 9821 Katy Freeway, Houston, Texas 77024

DIVERS
International Underwater Contractors Inc., 222 Fordham Street, City Island, New York 10464

DOCK BUILDERS
DeLong Corporation, 29 Broadway, New York, N.Y. 10006

DOORS—Watertight—Joiner
Walz & Krenzer Inc., 400 Trabold Road, Rochester, N.Y. 14624

EDUCTORS
Vita Motivator Co., 200 West 20th Street, New York, N.Y. 10011

ELECTRICAL EQUIPMENT
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N. Y. 10013
Marine Industrial Products Co., 1275 Bloomfield Ave., Fairfield, N.J. 07006
Merrin Electric, 1120 Clinton Street, Hoboken, N. J. 07030
Midland Ross Corp., Electrical Products Div., P.O. Box 1548, Pittsburgh, Pa. 15230
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

EQUIPMENT—Marine
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N. Y. 10013
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550
Nicolai Joffe Corp., P.O. Box 2445, 445 Littlefield Ave., So. San Francisco, Calif. 94080
Merrin Electric, 1120 Clinton Street, Hoboken, N.J. 07030
Peck Equipment Co., 3500 Elm Avenue, Portsmouth, Va. 23704
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

EVAPORATORS
Riley-Beaird, Inc., P.O. Box 1115, Shreveport, La. 71130

EXPANDED METALS
Niles Expanded Metals Inc., 700 North Pleasant Ave., Niles, Ohio 44446

EXPANSION JOINTS
H.S. White Co., 2056 Dixie Highway, Ft. Lauderdale, Fla. 33305

FANS—VENTILATORS
Dasic International Corp., 1035 Southeast Ninth Street, Portland, OR 97214
Joy Manufacturing Co., 338 So. Broadway, New Philadelphia, Ohio 44663
Merrin Electric, 1120 Clinton Street, Hoboken, N.J. 07030
Zidell Explorations, 3121 S.W. Moody St., Portland, Ore. 97201

FENDERING SYSTEMS—Dock & Vessel
Hughes Bros., Inc., 17 Battery Place, New York, N.Y. 10004
Johnson Rubber Co. (Marine Div), 16025 Johnson St., Middlefield, Ohio 44062
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850

FINANCING—Leasing
General Electric Credit Corp., P.O. Box 8300, Stamford, Conn. 06904
Kidder, Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005
Lehman Brothers Inc., One Williams Street, New York, N.Y. 10004
Warburg Paribas Becker, Inc., 2 First National Plaza, Chicago, Ill. 60670

FITTINGS & HARDWARE
Robvon Backing Ring Co., 675 Garden St., Elizabeth, N.J. 07207

FURNITURE
Bailey Joiner Co., Inc., 74 Sullivan Street, Brooklyn, N.Y. 11231

GANGWAYS
Rampmaster Inc., 1226 N.W. 23rd Ave., Fort Lauderdale, Fla. 33311

GAUGES—Pressure
General Instrument Corp., 3811 University Blvd. W. #26, Jacksonville, Fla. 32217

HULL CLEANING
East Coast Marine Associates, Inc., 80 Broad St., New York, N.Y. 10004
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

HYDRAULICS
Abex Corp., Denison Div., 1160 Dublin Rd., Columbus, Ohio 43216
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229

INERT GAS—Generators—Systems
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039
Gaulin Corporation, Garden Street, Everett, Mass. 02149
Smit Nymegen Corporation, 1511 K Street, N.W., Washington, D.C. 20005

INSULATION—Cloth, Fiberglas
Bailey Carpenter & Insulation Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231

INSURANCE
Adams & Porter, 1819 St. James Place, Houston, Texas 77027
Adams & Porter, 5 World Trade Center, Suite 6433, New York, N.Y. 10048
Alexander & Alexander, Inc., 1185 Ave. of the Americas, New York, N.Y. 10036
R.B. Jones Insurance, 911 Main St., Kansas City, MO 64199
R.B. Jones Insurance, 120 S. Central Ave., St. Louis, MO 63105
R.B. Jones Insurance, 160 Water St., New York, N.Y. 10038
Marsh & McLennan Inc., 1221 Ave. of the Americas, New York, N.Y. 10020

KEEL COOLERS
Johnson Rubber Co. (Marine Div), 16025 Johnson St., Middlefield, Ohio 44062

LADDERS
Duo-Safety Ladder Co., 513 West 9th Ave., P.O. Box 497, Oshkosh, Wisc. 54901

LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights
Automatic Power Inc., 213 Hutchinson Street, Houston, Texas 77003
Midland Ross Corp., Electrical Prod. Div., P.O. Box 1548, Pittsburgh, Pa. 15230
Oceanic Electrical Mfg. Co., 157 Perry Street, New York, N.Y. 10014
Perko Inc., P.O. Box 6400D, Miami, Florida 33164
Port Electric Supply Corp., 157 Perry Street, New York, N.Y. 10014
Tideland Signal Corp., P.O. Box 52430, Houston, Texas 77052

MACHINE TOOLS
Master Machine Tools, Inc., 1300 East Avenue A, Hutchinson, Kansas 67501

MARINE MACHINERY REPAIR
Worthington Service Corp., 233 Mount Airy Road, Basking Ridge, N.J. 07920

MARINE VALVES—Manhole Covers Gauge Hatches
J.M. Huber Corp., P.O. Box 2831, Borger, Texas 79007

MOORING SYSTEMS
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS
Advanced Marine Enterprises, Inc., Suite 500, 2341 Jefferson Davis Highway, Arlington, Va. 22202
Alpha Engineers, 7215 N.E. 13th Ave., Vancouver, Wash. 98665
American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015
J.L. Bludworth, 8207 Glen Loch, Houston, Texas 77061
Breit & Garcia, Naval Architects, 441 Gravier St., New Orleans, La. 70130
CADCOM Inc., 2024 West St., Suite B, Annapolis, Md. 21401
R.A.CADY-Marine Survey Practice, 2301 Leroy Stevens Road, Mobile, Ala. 36609
C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd., Jacksonville, Florida 32211
Childs Engineering Corp., Box 333, Medfield, Mass. 02052
Coast Engineering Co., 711 W. 21st St., Norfolk, Va. 23517
Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026
Crane Consultants Inc., 15301 1st Ave., So. Seattle, Washington 98148
Francis B. Crocco, Inc., Box 1411, San Juan, Puerto Rico
CTS & Associates, 11320 S.W. 108 Court, Miami, Fla. 33176
C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048
Daniel Yacht & Ship Brokerage Ltd., 1861 S.E. 17th St., Suite 206, Ft. Lauderdale, Fla. 33316
Norman N. DeJong & Associates, Inc., 1734 Emerson St., Jacksonville, Fla. 32207
Design Associates, Inc., 3308 Tulane Ave., New Orleans, La. 70119
Designers & Planners Inc., One State Street Plaza, New York, N.Y. 10004
M. Mack Earle, 103 Mellor Ave., Baltimore, Md. 21228
Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034
Frank J. Ferri & Associates, Inc., 1218 South Lakeside Drive, Lake Worth, Fla. 33460
Christopher J. Foster, Inc., 14 Vanderventer Ave., Port Washington, N.Y. 11050
Friede and Goldman, Ltd., 225 Baronne St., New Orleans, La. 70112
Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006
John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110
Arthur A. Grant & Son, Inc., 1745 First National Bank of Commerce Bldg., New Orleans, La. 70112
Phillip Gresser & Associates (PTE) Ltd., 122 Eng Neo Ave., Singapore 11
Morris Guralnick Associates, Inc., 550 Kearny Street, San Francisco, Calif. 94108
J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048
Hydronautics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810
Jantzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227
James S. Krogen & Co., Inc., 3333 Rice St., Miami, Fla. 33133
Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460
MacLear & Harris, Inc., 28 West 44 Street, New York, N.Y. 10036
Robert H. Macy, P.O. Box 758, Pascagoula, Miss. 39567
Marine Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114
Marine Design Inc., 401 Broad Hollow Road, Rte. 110, Melville, N.Y. 11746
Maritime Service Company, 1357 Rosecrans St., Suite B, San Diego, CA 92106
Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225
John J. McMullen Associates, Inc., 1 World Trade Center, New York, N.Y. 10048
George E. Meese, 194 Acton Rd., Annapolis, Md. 21403
Metritape, Inc., 77 Commonwealth Ave., West Concord, Mass. 01742
Nelson & Associates, Inc., 2001 N.W. 7th Street, Miami, Florida 33125
Nickum & Spaulding Associates, Inc., 811 First Ave., Seattle, Wash. 98104
Norgaard and Clark, 114 Sansome St., San Francisco, CA 94104
Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114
Pearlson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33156
S.L. Petchul, Inc., 1380 SW 57th Ave., Fort Lauderdale, Fla. 33317
M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013 and 657 Mission St., San Francisco, Calif.
Sargent & Herkes, Inc., 611 Gravier St., New Orleans, La. 70130
Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316
Seaworthy Engine Systems, 73 Main Street, Essex, Conn. 06426
George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007
T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2
SRS Shipping Research Services Inc., 205 S. Whiting St., Alexandria, VA 22304
The Stanwick Company Maritime Systems Department, 3661 E. Virginia Beach Blvd., Norfolk, VA 23502
R. A. Stearn, Inc., 100 Iowa St., Sturgeon Bay, Wisc. 54235
Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963
H.M. Tiedemann & Co., Inc., 295 Greenwich Ave., Greenwich, Conn. 06830
Thames Engineering Consultants Inc., P.O. Box 589, New London, Ct. 06320
Timsco, 951 Government St., Suite 2161, Mobile, Alabama 36604
Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706
Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N. Y. 10016

NAVIGATION & COMMUNICATIONS EQUIPMENT
American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526
Anschuetz of America, 444 5th Ave., New York, N.Y. 10018
Automated Marine Systems Division, Litton Systems Canada Limited, 21101 Oxnard St., Woodland Hills, CA 91364
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
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780
Iotron Corp., 5 Alfred Circle, Bedford, Mass. 01730
ITT Decca Marine Inc., P.O. Box G, Palm Coast, Fla. 32037
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
Magnavox Navigation Systems, 2829 Maricopa St., Torrance, Cal. 90503
Maritel Inc., 2510 Riva Road, Annapolis, Md. 21401
Mieco, Inc., 109 Beaver Court, Cockeysville, Md. 21030
Nav-Com, Inc., 2 Hicks Street, North Lindenhurst, N.Y. 11757
Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103
Raytheon Co., Submarine Signal Div., P.O. Box 360, Portsmouth, R.I. 02871
Simrad Inc., 1 Labriola Court, Armonk, N.Y. 10504
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721

(Continued Next Page)

BUYERS DIRECTORY (continued)

OIL PURIFIERS—Separators
Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231

OILS—Marine—Additives
Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Mobil Oil Corporation, 150 East 42nd St., New York, N.Y. 10017
Texaco, Inc. (International Marine) 135 East 42nd St., N.Y., N.Y. 10017

PAINT—Coatings, Protective
Carboline Co., Marine Div., 350 Hanley Industrial Court, St. Louis, Mo. 63144
Devoe & Raynolds Co., Inc., P.O. Box 7600, Louisville, Ky. 40207
Farboil Company, 8200 Fischer Road, Baltimore, MD 21222
Hanline Bros., Inc. (Consol 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., (PRC 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
Hydro-Craft, Inc., 4223 Edgeland, Royal Oak, Mich. 48073
Kubota, Ltd., 22, Funade-cho 2-chome, Naniwa-Ku, Osaka, Japan
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

PLASTICS—Marine Applications
Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231

PLATENS
Welding Wholesale Co., Div. J.A. Cunningham Eqpt., Inc., 2151 Dreer St., Philadelphia, Pa. 19125

PROPELLERS: NEW AND RECONDITIONED—SYSTEMS
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans La. 70150
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081
The Columbian Bronze Corp., 216 North Main Street, Freeport, N.Y. 11520
Coolidge Propellers, 1601 Fairview Ave. East, Seattle, Wash. 98102
Lips BV, Lipsstraat 52, Drumen, Netherlands
LIPS Propeller Works Inc., 420 Lexington Ave., New York, N.Y. 10017
Voith Schneider — U.S. Agent: Krupp International, Inc., 550 Mamaroneck Ave., Harrison, N.Y. 10528

PROPULSION—Marine
Combustion Engineering, Inc., Windsor, Connecticut 06095
Delaval Turbine Inc., Turbine Div., Trenton, N.J. 08602
In-Place Machining Co., 1929 N. Buffman St., Milwaukee, WI 53212
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166
Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523

PUMPS—Repairs—Drives
Delaval Turbine Inc., IMO Pump Division, P.O. Box 321, Trenton, N.J. 08602
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Worthington Pump Inc., P.O. Box 1250, Mountainside, N.J. 07092

RATCHETS
CM American, Division Columbus McKinnon Corp., P.O. Box 74, McKees Rocks, Pa. 15136

REFRIGERATION—Refrigerant Valves
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
Port Refrigeration Div., 157 Perry Street, New York, N.Y. 10014
Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 19523

RIGGING & BLOCKS
D. Van Beest En Zn.B.V., P.O. Box 57, Merwestraat 1-5, Sliedrecht, The Netherlands

ROPE—Manila—Nylon—Hawsers—Fibers
American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110
The Cordage Group, Columbian Drive, Auburn, N.Y. 13021
Wall Rope Works, Inc., Beverly, N. J. 08010

RUDDER ANGLE INDICATORS
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.

SCAFFOLDING EQUIPMENT—Work Platforms
Chamberlain Manufacturing Corp., 845 Larch Ave., Elmhurst, Ill. 60126
Patent Scaffolding Co., 2125 Center Ave., Fort Lee, N.J. 07024
Spider Staging Sales Co., P.O. Box 182, Renton, Washington 98055
Trus Joist Corp., P.O. Box 60, Boise, Idaho 83707

SEWAGE—Pollution Control
Argo Marine, Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013
Clear Water, Inc., N. Main Street, Walworth, WI 53184
Colt Industries, Water & Waste Management Operation, Beloit, Wisc. 53511
Demco, Inc., P.O. Box 94700, Oklahoma City, Oklahoma 73109
Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
Marland Environmental Systems, Inc., N. Main Street, Walworth, WI 53184
Microphor, Inc., P.O. Box 490, Willits, CA 95490
Red Fox Industries, P.O. Drawer 640, New Iberia, La. 70560
Research Products/Blankenship, 2639 Andjon, Dallas, Texas 75220
St. Louis Ship FAST Sewage Systems, 611 East Marceau St., St. Louis, Mo. 63111

SHACKLES
West Footscray Engineering Works Pty. Ltd., P.O. Box 144, West Footscray, Victoria, 3012 Australia

SHAFTS, SHAFT REVOLUTION INDICATOR EQUIP.
Armco Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45043
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

SHIPBREAKING—Salvage
American Ship Dismantlers, Inc., Division of Schnitzer Industries. 3300 N.W. Yeon Avenue, Portland, Ore. 97210
The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202
National Metal & Steel Corp., 691 New Dock St., Terminal Island, Cal. 90731
Zidell Explorations, Inc., 3121 S. W. Moody St., Portland, Ore. 97201

SHIPBUILDING STEEL
Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Bethlehem Steel Corp., 25 Broadway, New York, N.Y. 10004

SHIPBUILDING—Repairs, Maintenance, Drydocking
Arab Shipbuilding & Repair Yard Co., P.O. Box 5110, Bab-Al-Bahrain Building, Bahrain, Arabian Gulf
Astilleros Espanoles, S.A., 17, Padilla, Madrid 6, Spain
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans La. 70150
Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085
Bethlehem Steel Corp., Shipbuilding, 25 Broadway, N.Y., N.Y. 10004
Blohm + Voss AG, D-2000 Hamburg 1, P.O.B. 10 07 20
Blohm + Voss Co., 55 Morris Ave., Springfield, N.J. 07081
Blount Marine Corp., P.O. Box 368, Warren, RI 02885
Boston Marine Industrial Park, Public Drydock No. 3, 60 Congress St., Boston, Mass. 02109
Bremer Vulkan Schiffbau und Maschinenfabrik, P.O. Box 70023/24, 2820 Bremen 70, W. Germany
Camden Ship Repair Co., Inc., Point & Erie Streets, Camden, N.J. 08102
Carrington Slipways Pty, Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322
CCL Shipcare Limited, Easton Lane Winnall Estate, Winchester Hampshire, England SO237QU
Centromor, One World Trade Center, Suite 3557, New York, N.Y. 10048
China Shipbuilding Corp., c/o Allegro Transportation Supply Co., 393 Seventh Ave., Room 234, New York, N.Y. 10001
Conrad Industries, P.O. Box 790, Morgan City, La. 70380
Curacao Drydock Co., Inc., P.O. Box 153, Willemstad, Curacao, Netherlands Antilles
Curacao Drydock, 26 Broadway, Suite 741, New York, N.Y. 10004
Delmar Systems, Inc., 160 Industrial Parkway, Lafayette, La. 70501
Dravo Steelship Corp., R.4, Box 167, Pine Bluff, Ark. 71602
Equitable Shipyards, Inc., P.O. Box 8001, New Orleans, La. 70122
FMC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208
General Dynamics, Quincy Division, Quincy, Mass. 02169
Granges Repair Service GMBH, P.O. Box 3166, Gutenbergring 64, D-2000 Hamburg-Norderstedt Germany
Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189
Havre de Grace, Havre de Grace, Md.
Hillman Barge & Construction Co., P.O. Box 510, Brownsville, Pa. 15417
Hitachi Shipbuilding & Engrg. Co., Ltd., 47 Edobori 1-Chome, Nishi-Ku, Osaka, Japan
Hongkong United Dockyards Ltd., Kowloon Docks, Hong Kong
Hyundai Shipbuilding & Heavy Industries Co., Ltd., 5 World Trade Center, Suite 679, New York, N.Y. 10048
Jeffboat, Inc., Jeffersonville, Ind. 47130
Kawasaki Heavy Industries, Ltd., Kawasaki Kisen Kaisha, Ltd., 8 Kaigan-dori, Kuta-ku, Kobe, Japan
Kockums Shipyard, S-201, 10 Malmo 1, Sweden
Lisnave Estaleiros, Navais de Lisboa, Apartado 2138, Lisbon 3 Portugal
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
Marathon Manufacturing Company
Marathon LeTourneau Offshore Company, 1700 Marathon Building, 600 Jefferson, Houston, Texas 77002
Marathon LeTourneau Gulf Marine Division, P.O. Box 3189, Brownsville, Texas 78520
Marathon LeTourneau Marine Division, LeTourneau Rural Station, Vicksburg, Mississippi 39180
Marathon LeTourneau Offshore Pte., Ltd., P.O. Box 83, Taman Jurong Post Office, Singapore 22, Singapore
Marathon Shipbuilding Company, P.O. Box 870, Vicksburg, Miss. 39180
Marathon Shipbuilding Company (U.K.) Ltd., Clydebank Dunbartonshire, G81-1YB, Scotland
Marinette Marine, Ely Street, Marinette, WI 54143
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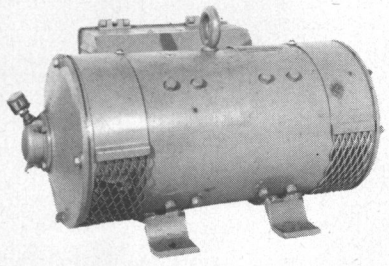

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