MARITIME
REPORTER
AND
ENGINEERING NEWS


**Todd Houston Yard Launches
Fast Refueler "Bunker Antigua"
For West Indies Oil Company, Ltd.**

(SEE PAGE 7)

OCTOBER 15, 1971

# BAILEY

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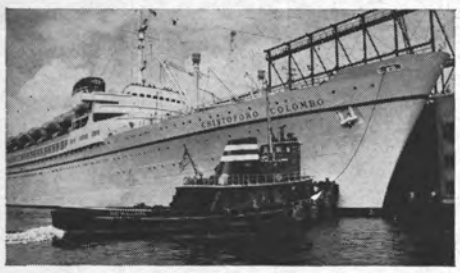

# Cristoforo Colombo discovers the new McAllister.


## Docking and undocking now faster, more efficient than ever.

The newest addition to the McAllister fleet, the 3160-hp Kort-nozzle tug "Jane McAllister," is shown here undocking the pride of the Italian Line, "Cristoforo Colombo." The "Jane's" flanking rudder system gives her a powerful edge in manuverability that pays off in speed, economy and safe conduct of the ship.

The "Jane" is only one of four new powerful tugs that are swelling the McAllister fleet. Supertugs for superships. So, whatever your harbor movement needs, including tug and barge transportation, why not discover for yourself the new McAllister?
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## Mac has the knack.

## Marine Moisture Awarded Contract By Sun Shipbuilding

The Marine Moisture Control Co., Inc., of Inwood, N.Y., has been awarded a contract by Sun Shipbuilding Company of Chester, Pa., for the design and installation of a complete, fully automated, remote-control hydraulic valve liquid-cargo-handling system for their Hull No. 657, which is a 125,000-dwt crude oil tanker. This tanker is being built for The Mobil Shipping & Transportation Company.

This MMC remote-controlled hydraulic valve system was developed and perfected by rigorous testing under the most adverse conditions by MMC's staff of engineers. The system requires little maintenance because it has a minimum of moving components. Delivery to The Mobil Shipping & Transportation Company is scheduled for 1972.

## Hull Aluminum Studied For Larger High Speed Surface Effect Ships

The Materials Department, Naval Ship Research and Development Center, Annapolis, Md., has begun a one-year detailed study of the corrosion fatigue properties of two aluminum alloys presently used in hulls of two 100-ton prototype surface effect ships.

The program is being conducted for the Naval Surface Effect Ships Project, which was formerly the Joint Surface Effect Ships Program Office. Studies will be conducted on plain and welded samples of 5000 Series Aluminum which have good resistance to corrosion and stress corrosion in seawater.

The information obtained from these studies will be correlated for use in designing larger and more reliable high speed surface effect ships. This information will also contribute to the capability of building faster small craft.

## Norwegian Firm Orders Tanker From Mitsui

The Thor Dahl Co. of Norway has ordered a tanker of 280,000 deadweight tons from the Mitsui Shipbuilding Co., according to reports from Tokyo.

Delivery of the new vessel is scheduled for the fall of 1973.




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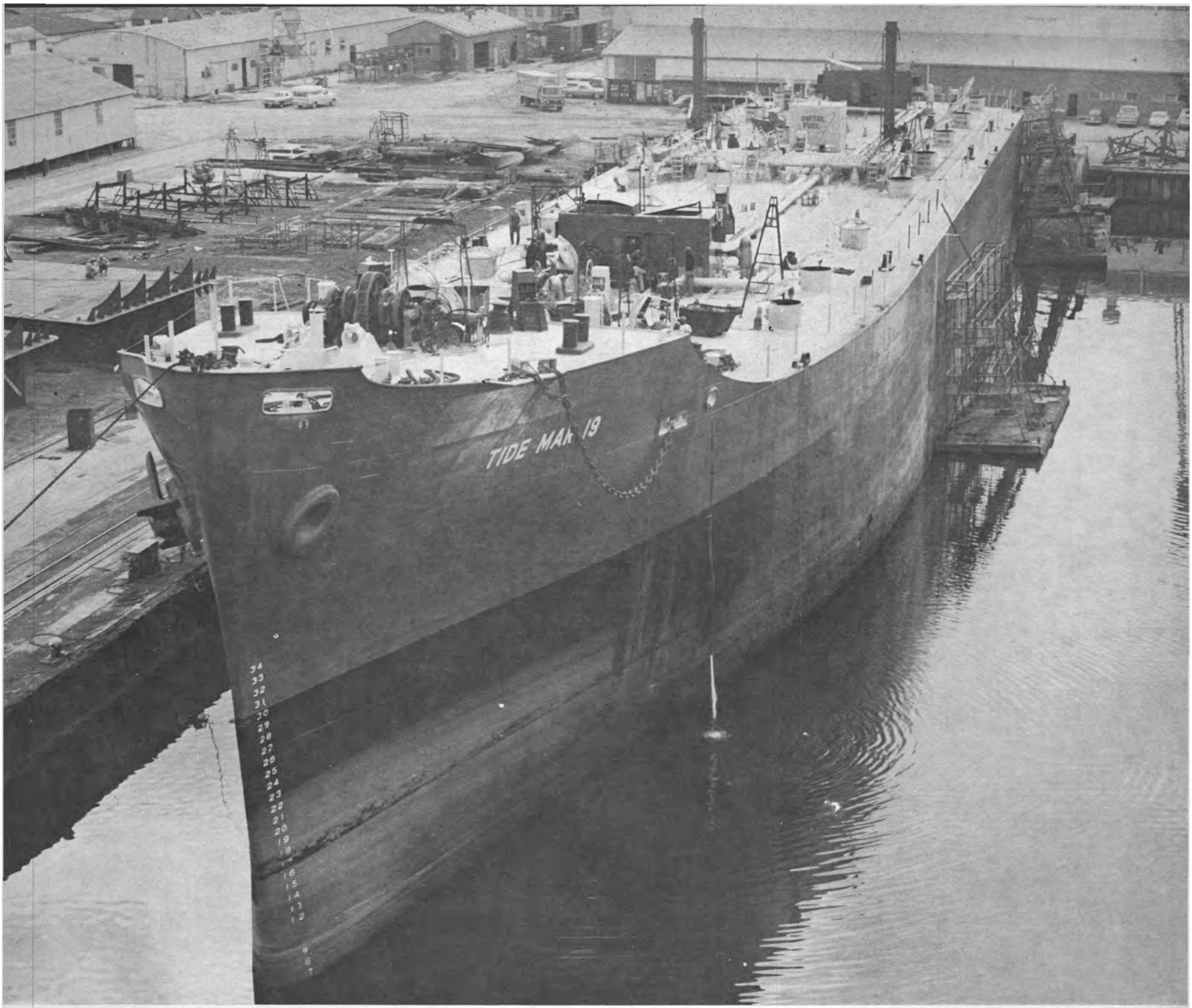


# It looks like a ship. It functions like a ship. But it's a barge.

Viewed from the bow, Tide Mar 19 looks like a tanker.

Which is exactly what she was before we started searching for the most economical method to carry 122,000 barrels of liquid cargo.

Sure, we could have achieved this capacity by buying a ship or building a barge. But that would mean added expense which would have to be passed along to customers.

Instead, we found a T-2 tanker in excellent condition, had the engines removed, and lopped off the stern. For power, we simply hooked up one of our 3600 HP tugs. (It might interest you to know we have several like this up to 4200 HP).

Particularly well suited for short coastal hauls, Tide Mar 19 boasts tremendous pumping capacity made possible by four pumps boasting a combined rating of 17,000 BPH against a 300-foot head. On numerous occasions, we have loaded Tide Mar 19 in less than 7 hours and off loaded in 10.

Other vital statistics include overall length of 383-feet, beam of 68-feet, and molded depth of 39-feet 3-inches, with certification for Grade B cargo.

If economy is your thing, think about Tide Mar 19.

Better yet, give us a call and let us tell you more.

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## Todd Shipyards' Houston Division Launches

# The Bunker Antigua

Todd Shipyards Corporation at their Houston Division christened and launched the tanker refueler Bunker Antigua on Saturday, September 18, 1971.

The West Indies Oil Company, Limited's (WIOC) Bunker Antigua is a unique custom-designed self-propelled bunkering craft specifically tailored to efficiently service the bunkering requirements of any vessel. This 6,300-ton refuelling vessel has the capability of delivering multiple grades of fuel oils plus potable water simultaneously to any vessel, regardless of size, calling at the deepwater Antigua Terminal for bunkers.

Bunker Antigua is 303 feet in length, 60 feet in breadth and incorporates a tumble home bow to afford the quickest, safest approaches alongside customer vessels. The Murray and Tregurtha 480-hp Harbormaster engines with steerable right-angle propellers afford the ultimate in maneuverability, providing for instant and precise reaction to bridge directions.

**Vessel Characteristics**

| | |
|---|---|
| Length overall | 303'-6" |
| Beam, molded | 60'-0" |
| Depth, molded | 23'-6" |
| Draft—max. (scantling draft) | 18'-6" |
| Displacement (Approx.) | 8,500 LT |
| Propulsion—twin screw (continuous rating) | 1,000 hp |
| Speed-service | 7.0 knots |
| Gross tonnage (est.) | 2,900 |
| Net tonnage (est.) | 2,300 |
| Cargo capacities | 6,300 LT (Approx.42,000 bbls.) |

Once alongside, a three-ton boom provides more than sufficient lifting power to hoist 60 feet off deck any size hoses utilized aboard seagoing vessels. After hookup, Bunker Antigua can deliver fuel at an hourly rate in excess of 5,000 barrels, affording swift turnarounds. An inline blending machine installed on the craft will control fuel grade mixtures and blends of any proportions within an accuracy of 0.05 percent.

The obvious advantages of Bunker Antigua from a shipowner's viewpoint include the savings in time and money derived from bunkering in open waters as opposed to dockside with its attendant expenses and delays.

The vessel is a flush decker with fo'c'sle and deckhouse superstructure aft for generators, crew accommodations, navigation spaces and other enclosed spaces.

**Specifications**

1. Two Murray & Tregurtha Model F-7 propulsion units complete with Caterpillar Diesel Engines Model 379, water-cooled heat exchanger with 250-hp front-end power take-off with clutch.
2. One Cargo Oil Blender Unit as manufactured by Digital Blending Co.
3. Two Cargo Oil Pumps—(2,500 barrels per hour) Model RA-1881 with gears as manufactured by Waterous Pump Co.
4. One Ballast Pump (1,500 barrels per hour) Model P 1256 with gears as manufactured by Waterous Pump Co.
5. Two Engine Cooling raw water pumps complete with explosion-proof motors.

This vessel represents the most modern and flexible equipment in bunkering service. It augments existing facilities of the busy Caribbean port of Antigua and provides in one unit the complete capability of providing fast service with any combination of fuels and water to any size ship.

The Independent Petroleum Supply Company (IPS) is the exclusive bunker marketing agent for The West Indies Oil Company, Limited (WIOC). In addition to its marketing activities. IPS provides technical assistance and operational guidelines to WIOC and others. The original performance requirements and basic design were made by IPS.

In its capacity as marketer, IPS foresaw the need in the shipping trade for such a unique bunkering vessel as the Bunker Antigua. Years of experience in the international marine trade and a thorough knowledge of the shipowners/operators requirements were brought together with the design and engineering capacity of Martin Marine Co., Ltd. of New York, to produce this vessel.

Todd Shipyards in Houston, moving ahead of schedule, brought it to a September 18, 1971, launching which was in advance of the originally anticipated date. The contract was won in international competition and no subsidy was involved.

The vessel will be on location in Antigua, West Indies, next month.

The West Indies Oil Company, Limited is located at Friar's Hill near St. John's, Antigua, West Indies. The bunkering location is just off Dickenson Bay at a location of 17°09'06" and 61°62'00" W.

The managing director of WIOC is **Eugene Bertrand,** a West Indian, and former Government executive in Trinidad. The WIOC marine department is managed by Capt. **Kenneth Green.** He heads the entire marine operation for WIOC, including its tanker offshore mooring facilities, product and crude "Sea Island" and all floating equipment, including the new Bunker Antigua. The new master of the Bunker Antigua will be Capt. **Horatio Wilkins.** Captain **Wilkins** will take the Bunker Antigua on its sea trials and then bring the vessel from Houston to its home port of St. John's, Antigua.


Shown on the launching platform at Todd Shipyards' Houston Division are, left to right: **Arthur W. Stout Jr.,** general manager of the Division; **Chandler Ide,** president of Natomas Company; **Mrs. Walter** (sponsor), wife of the Premier of Antigua; Premier **George H. Walter,** and **John T. Gilbride,** president of Todd Shipyards Corporation.

Both The West Indies Oil Company, Limited and the Independent Petroleum Supply Company are subsidiaries of Natomas Company, a California corporation. **Duane F. MacFarland,** Natomas Company's shareholder representative for Caribbean and Canadian affiliates, officiated at the launching of the Bunker Antigua in Houston.

**Mrs. George H. Walter,** wife of the Premier of Antigua, was the sponsor of the vessel. Mr. **Walter** and the Honorable **Donald A. Halstead,** Minister of Home Affairs and Labor of Antigua, were in attendance on the launching platform. Mr. **MacFarland,** after commenting on the valuable contribution which the Bunker Antigua would make to the island and WIOC, presented **Mrs. Walter** with a gold bracelet commemorating the occasion. **Chandler Ide,** president of Natomas Company and chairman of the board of WIOC, and his wife attended. Independent Petroleum Supply Company was represented by **Edmond J. DuSesoi,** vice president, and his wife. Representing Todd Shipyards Corporation were the president of the firm, **John T. Gilbride,** and his wife, and the general manager of the Houston Division who also acted as master of ceremonies, **Arthur W. Stout Jr.,** and his wife.

## New York Section, SNAME, Discusses System Integration Of GTS Euroliner

Taking part in the September meeting of the New York Metropolitan Section, SNAME, were, left to right: **J.T. Schroppe,** papers committee chairman; **J.D. Connors,** meetings committee chairman; **D.A. O'Neil,** co-author; **J.G. Holburn,** co-author; **N.R. Farmer,** Section chairman; **R.G. Mende,** national secretary, SNAME; **D.B. Carpenter,** co-author and secretary-treasurer, and **C.W. Sandberg,** membership committee chairman.

The New York Metropolitan Section of The Society of Naval Architects and Marine Engineers opened its 1971-72 season with an outstanding meeting which included a tour of Port Seatrain and a technical paper delving into the pre-planning and design of the GTS Euroliner. Following the practice initiated several years ago of varying the location of meetings, this meeting was held at Stevens Institute of Technology, Hoboken, N.J.

The paper, entitled "System Integration of the GTS Euroliner from Conception to Operation," was presented by **D.B. Carpenter,** manager of Commercial Marine Marketing, Turbo-Power and Marine Systems, Inc.; **J.G. Holburn** of J. & J. Denholm (Ship Management) Ltd., and **D.A. O'Neil,** project engineer, marine engineering, Turbo-Power and Marine Systems, Inc. The paper presented an insight into the decisions made regarding the ship design, with particular attention given to the main propulsion plant. The first part of the paper provides an insight into the important planning for the ship as follows.

"In late 1967 when Euroliner was first under consideration, a unique situation existed in that a new route and new shore facilities were being considered. This environment provided the unusual opportunity to minimize the potential problems associated with the marine portion of the transportation system. It also allowed minimizing the impact of its potential weaknesses on the total system. It was felt that in-port turn-around time and the ship's ability to maintain a tight schedule were crucial to the desired operation. In addition, ship size and speed were of great significance and the old concept 'steel is cheap—build the ship larger if more cargo capability is needed' just did not satisfy the concept under consideration.

"Quite extensive studies were undertaken by John J. McMullen Associates under the guidance of **Howard M. Pack** and **Joseph Kahn** of Seatrain Lines who had been seriously investigating gas turbines for many years.

**J.G. Holburn** (right), co-author, who flew in from Scotland for this meeting, is presented with a certificate of membership by **Robert G. Mende,** national secretary of The Society of Naval Architects and Marine Engineers.

"Excursions and sensitivity analyses were conducted to amplify some of the basic studies. For example, maintenance and fuel costs normally receive a great deal of attention by any ship operator. Sensitivity analyses of these two items, in relation to the total economics of the transportation system, were most revealing. Maintenance costs were so low in relative magnitude that their consideration was removed from the major decision arena. On the other hand, the time required for repairs or maintenance became quite significant. Similarly, fuel costs were found to be important but only in relation to the desired objective. Analyses revealed that higher fuel costs should not be an over-riding consideration if, by acceptance of higher fuel costs, the overall system would function more efficiently and reliably.

"The primary conclusions reached were:

1. A containership was required that could maintain a 25-knot schedule, ensuring weekly regularity for the total system.
2. All planning should provide the ship with a 12-hour in-port turn-around capability including repair of casualties to and normal maintenance of the main propulsion plant.
3. Automation should be employed as much as was technically and economically practical — both for operating economics and ease of changing crews, which the arduous schedule would require.
4. The hull should be designed for maximum cargo capacity within the constraints imposed by pier space, efficient cargo handling, operating flexibility and the desired ports.
5. The aviation-type gas turbine for main propulsion offered the greatest potential in achieving the desired objectives."

During the meeting **Robert G. Mende,** secretary of The Society of Naval Architects and Marine Engineers, presented Mr. **Holburn,** one of the authors, with his certificate of membership in the Society.

### The Authors

Mr. **Carpenter** is a graduate of the U.S. Naval Academy. He retired from the Navy in 1965, after spending the major portion of his naval career at sea in destroyers and submarines. He joined the turbo-power and marine department of Pratt & Whitney Aircraft in 1965 as a marine marketing engineer. Shortly thereafter, he was promoted to manager of commercial marine marketing, a position he currently holds with Turbo-Power and Marine Systems, Inc., United Aircraft's recently formed subsidiary. He is a member of The Society of Naval Architects and Marine Engineers, The Society of Naval Engineers and The Institute of Marine Engineers.

Mr. **Holburn** received his education in Scotland. He began his marine career with John Brown & Company (Clyde Bank, Ltd.) in 1938. This was followed by 12 years' at-sea experience with numerous companies, always in an engineering capacity. In 1954, he became associated with MacGibbons College of Marine Engineering as a lecturer and later college principal. From 1965 until the present, he has been with J. & J. Denholm (Ship Management) Ltd. His responsibilities have included all training of Denholm's crews, supervision of new construction and consultant to many owners, as well as numerous other management functions. Author of technical papers and college text books, Mr. **Holburn** is a member of The Institute of Marine Engineers and The Society of Naval Architects and Marine Engineers.

Mr. **O'Neil** attended the naval architecture and marine engineering programs of the U.S. Merchant Marine Academy and Massachusetts Institute of Technology. He has served as an officer on both U.S. merchant and naval vessels. Since leaving the Boston Naval Shipyard in 1962, he has been with United Aircraft's Pratt & Whitney Aircraft Division in several capacities, including that firm's cognizant supervisor and project manager for various marine propulsion engines and systems, including Euroliner. Mr. **O'Neil** is currently project engineer, marine engineering for Turbo-Power and Marine Systems, Inc. He is a member of The Society of Naval Architects and Marine Engineers and The American Society of Mechanical Engineers.

## Moore-McCormack Elects Robert O'Brien Exec. Vice President

**Robert E. O'Brien**

The board of directors of Moore-McCormack Lines, Incorporated has elected **Robert E. O'Brien** executive vice president, it was announced by **James R. Barker,** chairman and chief executive officer of Moore-McCormack Lines. **James T. Crowley** was also named a vice president and **Jack M. Smith** an assistant vice president.

Mr. **O'Brien** had served as senior vice president since 1968. He had been a vice president, sales and held important positions in operations and traffic. He will continue to serve on the board of directors of both Moore-McCormack Lines, Incorporated, and its parent, Moore and McCormack Co., Inc.

Mr. **Crowley** is returning to the company after a year's leave of absence, during which time he was Director, Office of Market Development, Federal Maritime Administration, Washington, D.C. He will direct the overall marketing services of Moore-McCormack Lines, including sales, trade development, advertising and public relations.

Mr. **Smith,** who has been regional director, Midwest, will now be responsible for sales and agency matters in the Midwest and South Atlantic areas served by the company.

## Wilmington Shipping Appoints Ruffin

Wilmington Shipping Co., Wilmington, N.C., has announced that **Peter B. Ruffin Jr.** has been named as assistant vice president of the company and of its subsidiaries, Southern Overseas Corp., East Carolina Ship Agencies, Inc., and Morehead City Shipping Co., Morehead City, N.C.

## Hubeva Marine Plastics Names New Distributor

**W. George Huntington,** president, Hubeva Marine Plastics, Inc., of New York, sole distributors of Cordobond, announces the appointment of Philadelphia Ship Maintenance Co. Inc., **Joel H. Van Diepen,** president, 18 North Front Street, distributors of Cordobond for the Port of Philadelphia.

## Annual SNAME Meeting To Be Held Nov. 11-12 At New York Hilton

**Daniel D. Strohmeier,** president of The Society of Naval Architects and Marine Engineers, has announced that the 79th Annual Meeting of the Society will be held at The New York Hilton in New York City on November 11 and 12, 1971.

The annual meeting of the Council will be held on Wednesday, November 10.

The president will give his annual address on Thursday, November 11, at 3:30 p.m.

Simultaneous technical sessions will be held during the two days at which 12 papers will be presented covering a wide range of subjects of vital interest to all affiliated with the marine industry.

The annual business session will be held immediately following the president's address on Thursday, November 11.

The annual banquet, for members only, will be held in the Grand Ballroom of The New York Hilton on Thursday evening, November 11, with president **Daniel D. Strohmeier** presiding.

A ladies' champagne brunch and a program of entertainment will be held in the Sutton Ballroom at The New York Hilton on Friday, November 12, starting at 10:30 a.m.

The Society's annual dinner dance, in the Grand Ballroom of The New York Hilton, on Friday evening, November 12, will conclude the 1971 Annual Meeting.

SNAME's 9,500-plus members represent a broad range of interest in the worldwide marine field.



## Mobil Shipping Elects Townshend VP-Operations

**Curtis Townshend**

**Curtis S. Townshend** has been elected vice president-operations of Mobil Shipping and Transportation Company, an international marine subsidiary of Mobil Oil Corporation.

Mr. **Townshend** was born in Orange, N.J. In 1953, he received a B.S. degree in naval architecture and marine engineering from Webb Institute. Mr. **Townshend** joined Mobil in 1957 as a technical assistant in the marine transportation department in New York. In 1965, he went to Beaumont, Texas, as manager of Gulf-East Coast operations and returned to New York in 1969 as manager of U.S. operations.

## Thomas C. Wilson, Inc. Issues Catalog On Boiler Tube Expander

Thomas C. Wilson, Inc., Long Island City, N.Y., has announced availability of a new catalog covering their complete line of boiler tube expanders. Detailed in the 44-page catalog are series of expanders for tubes from 1-inch to 4½-inch O.D. for boiler, boiler assemblies, including downcomer, riser and superheater support tubes and nipples; superheaters, air heaters and economizers; and tubes for water wall headers, water drums and steam drums. Special purpose tools for thin tube sheets, far end expanding, sectional headers and nipples, long reach and progressive step rolling and expanders meeting military specifications are detailed.

Also included in the catalog is a section on lubrication, care and maintenance of tube expanders, as well as guidelines for proper tube expanding. Helpful tables covering wall thickness, diameters, O.D. and I.D. of welded and seamless steel pipe and boiler and condenser tube sizes are included.

Copies of Catalog B-72 titled "Boiler Expanders" may be obtained from Thomas C. Wilson, Inc., 21-11 44th Avenue, Long Island City, N.Y. 11101.

## No. California Section Discusses GE Paper On Gas Turbines

Pictured during the meeting at the Engineers Club in San Francisco are left to right: **William Swan,** General Electric, member of the executive committee of the Northern California Section; **A. O. White,** author, and **James A. Stasek,** Kings Point Machinery, public relations chairman.

The Northern California Section of The Society of Naval Architects and Marine Engineers dinner meeting on September 9 featured a paper entitled "The Position of the Heavy-Duty Gas Turbine in the Marine Field," by **A.O. White,** manager, marine projects, Gas Turbine International Department, General Electric Co., Schenectady, N.Y.

The paper defined "industrial" turbines as being those intended for continuous full-power operation with long life and low maintenance, as opposed to aircraft, etc. applications that only require full power during take-offs or for a limited period of time. It traced the development of these heavy-duty units from the first locomotive operations through current marine applications for "LNG" and general cargo carriers.

The problems of gas path cleaning and reversing were discussed with a "reversible" turbine being considered the ultimate probability.

Current applications for the gas turbine were suggested as those in which automation and space have a premium. Participating in the discussion were **Ken Kasschau,** Westinghouse; Mr. **Rudge,** Magnus Chemical; **James Sweeney,** Mare Island Naval Shipyard; and **Robert Speare,** consultant.

## New Book Published On Law Of Tug, Tow And Pilotage

A new book entitled "Law of Tug, Tow and Pilotage," covering the entire spectrum of this area of admiralty law, has been published by Cornell Maritime Press, Inc. Written by **Alex L. Parks,** a member of the law firm of White, Sutherland, Brownstein and Parks of Portland, Ore., the book is the first complete text on the law of tug and tow in 44 years.

"Law of Tug, Tow and Pilotage" is directed to the needs of towboat, barge and shipping company executives, pilots and pilot associations, insurance brokers and adjusters, and most important, to practicing maritime attorneys.

The 672-page work contains 12 chapters dealing with historical developments, admiralty principles applying to tug and tow, general principles specifically applicable to towing, duty of tug generally, duty of tow generally, collision and limitation of liability, governmental regulations, marine insurance, maritime liens, charters, pilotage and salvage. Whenever possible, case citations have been given by reference, first to American maritime cases and second, to the Federal Reporter system of the appropriate state reporter system.

The foreword of the new publication was written by **Braxton B. Carr,** president of The American Waterways Operators, Inc. Mr. **Carr** states: "Bucknill's 'Law of Tug and Tow,' London, 1927, now out of print, was the last definitive volume written on the subject. In the intervening years we have seen many developments in the field, and regulation of the towing and barge business has become more and more pervasive. It is altogether fitting therefore to have up-to-date text on the subject which can be utilized conveniently by attorneys, insurance personnel and towboat executives. We believe this volume by Mr. **Parks** does precisely that."

Copies of the new book are available from Cornell Maritime Press, Inc., Cambridge, Md. 21613 at $20 each.

# National Marine Service and Goulds Pumps

**join to bring you the best in service and pumps.**

National Marine Service, Inc. of St. Louis now stocks the complete line of Goulds Autoprime® pump parts and components, including bowl assemblies that can be fitted to any deep well barge pump.

Marine Service now becomes the most complete marine pump service organization anywhere on the Mississippi Inland Waterways, offering:

- Round-the-clock service, seven days a week.
- Central location with excellent air, rail, truck and water transportation for fast service.
- Experienced technical advice.
- Skilled, experienced pump mechanics and machinists to service Autoprimes and deep well barge pumps.
- Complete machine shop and tooling facilities for pump repairs, including metalizing shafts.
- Complete facilities to gas free barges for pump removal or repair.
- Crane barges and tug service to remove or replace pumps.

The Goulds Autoprime pumps unload and strip product tankers and tank barges faster than any pumps developed. When operating through a suction manifold system, they discharge air or vapors quickly and automatically, and prime without auxiliary equipment. Stripping is complete to the last small amount, with no back flooding or special attention required.

The Autoprime has a fabricated steel discharge head, heavy-duty flanged discharge column, over-sized 416 stainless steel lineshaft, balanced impellers, and a maximum 5-foot bearing span for vibration-free operation.

National Marine Service capabilities complements Goulds Pumps products and service for the marine industry. Goulds' network of sales offices include:

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Call or write for Goulds Autoprime Pump Bulletin 3A.6.

Goulds Pumps, Seneca Falls, New York 13148

**GOULDS PUMPS, INC.**
Vertical Pump Division

## J.J. Henry Co., Inc. Receives Icebreaker Design Contract From Lockheed Shipbuilding

Lockheed Shipbuilding and Construction Company, Seattle, Wash., has awarded a contract to J.J. Henry Co., Inc., to develop design and working plans for the world's most powerful icebreaker. All work on the project will be performed at the Moorestown, N.J., office of the naval architectural firm.

The new Coast Guard designed icebreaker will be powered by a combination of diesel and gas turbine engines. With an effective 60,000 shaft horsepower, it will have one and one-half the power of the Soviet Union's Lenin, presently the most powerful icebreaker afloat.

The 400-foot, 12,000-ton vessel is expected to be in use by the U.S. Coast Guard by 1974 and will be the first addition to the nation's icebreaking fleet since 1954.

One of the largest firms of naval architects in the world, J.J. Henry Co. has designed many different types of commercial and military ships with both nuclear and fossil fueled propulsion systems. The Moorestown office is in the final stages of completion of design requirements for two new submarine rescue ships (ASR) and an oceanographic research ship, T-AGOR. The firm has pioneered in the design of liquefied methane (LNG) tankers and containerships.

## Atlantic Container Line Names Two District Sales Managers

Robert B. Hayes

John Devine

**Robert B. Hayes** and **John Devine** have been appointed district sales managers for Atlantic Container Line, Ltd., it was announced by **Edmund J. Camuti,** vice president, marketing and sales.

Mr. **Hayes** will be responsible for the development of export and import cargo movements via ACL from and to the Maryland, Delaware, southern Pennsylvania and Washington, D.C., areas. Mr. **Devine** will have the same responsibilities for ACL services in the New England area.

Mr. **Hayes** has held positions as marketing manager, special commodities, marketing manager, Government services (Atlantic region), and general operations manager of Port Seatrain for the Seatrain Lines; and, with Sea-Land Service, was marketing manager, Government services, for the Republic of South Vietnam.

He is a member of the Foreign Commerce Club of New York, and the National Transportation Association.

Mr. **Devine** was formerly a sales representative in Connecticut for ACL. He has held positions as New York sales manager for Inter-Freight and was a sales representative and assistant traffic manager for American Export Isbrandtsen Lines.

He is a member of the New Britain Traffic Association, Bridgeport Traffic Association, and the New York Chamber of Commerce.

## Three Partners Purchase St. Augustine, Fla. Shipyard

New owners of St. Augustine Trawlers, Inc., shown left to right, are: **Jerry D. Thompson,** executive vice president and general manager; **V.J. O'Neal,** president, and **Joseph T. Thompson,** secretary-treasurer.

**Jerry D. Thompson, V.J. O'Neal** and **Joseph T. Thompson** have announced their purchase of St. Augustine Boat Builders, St. Augustine, Fla., and have changed the name of the yard to St. Augustine Trawlers, Inc.

The new owners plan to continue to build stock design wood shrimp trawlers 62 feet by 18 feet, 68 feet by 18½ feet, 72 feet by 18½ feet, and 73 feet by 20 feet. With the purchase of this yard was the acquisition of a 100-ton railway for haulouts and complete welding, machine, carpenter and rigging shops. St. Augustine Trawlers, Inc. now offers underwater and dockside repairs and marine supplies.

**V.J. O'Neal** and **Joseph T. Thompson** are associated with Thompson-O'Neal Shrimp Company in Key West, Fla., as the owners-operators of shrimp trawlers and wholesale shrimp and fish distributors.

**Jerry D. Thompson** was associated for over nine years as vice president of sales and purchasing with Desco Marine, Inc., formerly Diesel Engine Sales, Inc. of St. Augustine.

## Colt Industries Introduces Portable Floating Pump For Fast Skimming Of Oil Spills

Oil spills can now be skimmed off quickly and pumped into a tank truck or retaining basin by a new Fairbanks Morse portable floating pump.

The skimming attachment for the Fairbanks Morse Figure 5430FP Floating Pump can be adjusted to specific depth for most efficient operation, according to Colt Industries Industrial Pump Operation.

Designed for a wide variety of emergency and constant-use applications, the new pump floats on the surface of seawater, lakes, streams or man-made excavations, pits, holding basins and sumps. Buoyancy is provided by a float ring of experience-proved polyethylene filled with 100 percent urethane foam which is resistant to water, sun, hydrocarbons and most chemicals.

Light in weight in relation to capacities, the floating pump can be placed in service in minutes by one or two men. Without the skimming attachment, the pump drains basins completely and may be used for dewatering, irrigation, transfer of fluids, including loading of tank trucks, cars and vessels, waste water removal, and water supply.

Available in five models of varying sizes and capacities, the Fairbanks Morse Floating Pump is equipped with a choice of gasoline, electric or air motors. For more information, contact Colt Industries Industrial Pump Operation, 3601 Kansas Avenue, Kansas City, Kan. 66110.

## MacGregor & Co. Ltd. Names R.P. Holubowicz Chairman, H. Kummerman President

MacGregor & Co. (Naval Architects) Limited, of Whitley Bay and London, has announced that in order to meet the changing climate of the British shipbuilding industry, they have strengthened their board as follows:

**H. Kummerman,** formerly chairman, is now president; **R.P. Holubowicz,** executive vice president of International MacGregor Limited, joins the British company board as chairman; **A.J. Wheway,** formerly of Ionian Bank, has been appointed financial director; **A.E. Brierley** joins the company from the Price Waterhouse organization as secretary and chief accountant, and **H. Robson,** who recently joined the company from the Swan Hunter Group, is technical director.

The following board memberships remain unchanged: **D.A. Lawrence** continues as managing director; **G.P. Ritchie** remains in an advisory capacity on the financial side; **J. Johnston** as commercial director; **G.E. Dodds** as sales director, and **F.N. Garside** as production director.

MacGregor & Co. (Naval Architects) Ltd., is a member company of the International MacGregor Organization, leading suppliers of cargo access equipment for the world's merchant fleets.

## Eastern Region Intermodal Specialists Named By MarAd

William Chambers

Jack Beuschel

The appointments of **William Chambers** and **Jack Beuschel** to the staff of the Office of Ports and Intermodal Systems as intermodal specialists in the Eastern Region of the Maritime Administration, U.S. Department of Commerce, was announced by **Thomas A. King,** Eastern Region director.

Mr. **Chambers** has held various management positions in the maritime industry and comes to the Maritime Administration with a background as a port and marine consultant to Government and industry. He is a graduate of the Pennsylvania Maritime Academy and holds a degree from the Massachusetts Institute of Technology, as well as a master's license.

Prior to joining the Maritime Administration, Mr. **Beuschel** was associated with Inter-Freight International, a division of American Export Industries, in their New York sales and marketing organization, and Moore-McCormack Lines as manager, container operations for Europe. He is a graduate of the United States Merchant Marine Academy and served as a deck officer with MSTS immediately following graduation.

Both of these gentlemen will be responsible for the development and promotion of integrated transportation systems, including containerization, LASH, palletization, bulk transport and port facilities relative to U.S.-flag carriers.

## Grafton Debris Collector Doing Cleanup Job In Chicago


The Gratfon debris collector works with a 50-foot by 20-foot barge cleaning the lake front in the Greater Chicago area.

Grafton Boat Co., Inc., builder of "cleanup vessels" for the nation's waterfront cities, reports that the new debris collection vessel furnished to the Metropolitan Sanitary District of Greater Chicago is now well into its first season of operation.

Delivered to Chicago in January, the "Debris Control No. 1" was specifically engineered and built to meet the needs of the Sanitary District in combating the growing water pollution problem facing America's cities. Working in conjunction with a 50-foot x 20-foot barge, the 36-foot twin-screw vessel is equipped to handle cleanup chores along the many miles of river and lake front within the Greater Chicago area.

Primary element of the debris control system engineered by Grafton for this application is a 36-foot by 14-foot diesel-propelled vessel which is equipped with a Hiab hydraulic articulated crane on its bow. The crane has a variety of attachments, including a clamshell bucket, log grapple and large debris basket. In operation, several open-top containers are carried on the deck of the barge. The barge is anchored or moored at a convenient location, and the debris collecting vessel maneuvers to pick up floating or bank-side debris. The bucket loads of debris are then placed in the containers on the barge deck and, when all containers are filled, the debris collector vessel tows the barge to a convenient location, where the containers are removed from the barge by a crane and placed on trucks for removal to a disposal site.

The debris control vessel is heavily constructed of ¼-inch steel plate, and is arranged for one-man operation. All controls for the loader, as well as vessel steering and engine controls, are conveniently positioned on a pilothouse console. The hydraulic pump for the Hiab loader is driven by a front power takeoff on the starboard main engine. Engines are Cummins Model NH-250M marine diesels rated at 200 hp at 1,800 rpm. They are connected to Twin Disk model MG-509 reverse-reduction gears of 2.95:1 reduction ratio. Three-inch propeller shafts turn the 34-inch diameter by 34-inch pitch 4-blade Federal propellers. Both engines and the 10-kw Kohler diesel generator set are equipped with keel cooling for trouble-free operation in cold winter weather. The cabin just forward of the engine room is equipped with living and messing spaces for the crew.

The debris collector vessel is designed and engineered to function effectively as a towing vessel as well. To this end, it is equipped with a conventional towboat steering system, which includes both steering and flanking rudders for the utmost in maneuverability of both light boat and the boat/barge combination. In trials prior to delivery, the vessel pushed a loaded 1,400-ton jumbo river barge at a speed of over 6.5 mph.

For more specific information, contact either **Edward D. Fry,** president, or **Timothy Graul,** naval architect, vice president, engineering and sales. The yard is located at Grafton, Ill. 62037.

## MarAd Drops Requirement For Mortgagee Insurance

In a move to streamline the Federal ship mortgage insurance program, the Maritime Administration has dropped the requirement that unsubsidized shipowner-participants carry mortgagee insurance on covered vessels.

The elimination, which will save operators about $250,000 annually, was announced by Assistant Secretary of Commerce for Maritime Affairs **A.E. Gibson,** who heads the agency.

Mr. **Gibson** pointed out that in the 10 years this type of insurance has been required, there have been no instances in which it was needed.

"In 1961, when the mortgagee-insurance requirement was instituted," he explained, "about 90 percent of the vessels covered by Federal mortgage insurance were owned by operators with only the single ship as their major asset.

"Today, however," he added, "the situation is reversed, with about the same percentage of participating vessels being units of company fleets, whose owners have sufficient assets to cover any obligations not met under their ordinary marine policies."

The ending of this requirement was one of the steps recommended by Dr. **Alan P. Kirman** in his Maritime Administration sponsored study of the marine insurance industry that was performed last year, Mr. **Gibson** noted.

Under Title XI of the Merchant Marine Act of 1936, as amended, the Maritime Administration is authorized to insure the principal and interest on commercially placed mortgages and loans used to finance new merchant vessel construction and reconstruction.

Mr. **Gibson** noted that eliminating this requirement will add to the attractiveness of the Title XI program, for which a wide variety of vessels designed for the inland, domestic, and foreign trades are eligible.


## Washington Chain & Supply Appoints Obert And Pearson

R. Patrick Obert

Roger H. Pearson

**Harry Schwartz,** president of Washington Chain & Supply Company, 2935 Utah Avenue So., Seattle, Wash., recently announced the appointment of **R. Patrick Obert** as manager, and **Roger H. Pearson** as marketing manager of Washington Chain's new manufacturing and national marketing division, MARQUIP.

MARQUIP will manufacture and distribute proprietary marine products on an international basis. Prior to this time, Washington Chain & Supply's marine marketing efforts have been primarily in the Pacific Northwest and Alaska.

Mr. **Obert** and Mr. **Pearson** will retain their respective positions as assistant manager and marketing manager of Washington Chain while directing the growth and development of MARQUIP.

Mr. **Obert** attended the University of Washington and Seattle University's School of Engineering. He completed his military obligation with the U.S. Navy aboard the aircraft carrier USS Ticonderoga (CVA 14). Prior to joining Washington Chain in 1967, he served 12 years with U.S. Electric Motors, four of them as manager of the firm's Portland office.

Mr. **Pearson** attended Colorado College in Colorado Springs, where he was affiliated with Kappa Sigma. He later earned a B.A. degree in business administration and marketing from Seattle University. He served with the U.S. Army Medical Service in the Far East.

Prior to joining Washington Chain & Supply, Mr. **Pearson** served 11 years in industrial sales and marketing media in Chicago and San Francisco. He is a member of the American Marketing Association.

**NEW JERSEY GOVERNOR HONORED:** Shown receiving The Rudder Club's Golden Quill Award at its Port Industries Night Dinner, which was recently held in the Grand Ballroom of the Statler Hilton Hotel, New York, N.Y., is the Honorable **William T. Cahill,** Governor, state of New Jersey. The Rudder Club, which is one of the largest maritime organizations, has made the presentation to Governor **Cahill** for his untiring efforts in promoting foreign commerce through the ports of New York and/or New Jersey. Shown from left to right: **Berndt M. Palmer,** president of Lee & Palmer and executive vice chairman; **Thomas J. Giardino,** traffic manager of Marchessini Lines and dais chairman; the Honorable **William T. Cahill; John J. Farrell Jr.,** vice president of International Terminal Operating Corporation and general chairman, and **James L. Bailey,** traffic manager of Wedemann & Godknecht and commodore of the club.

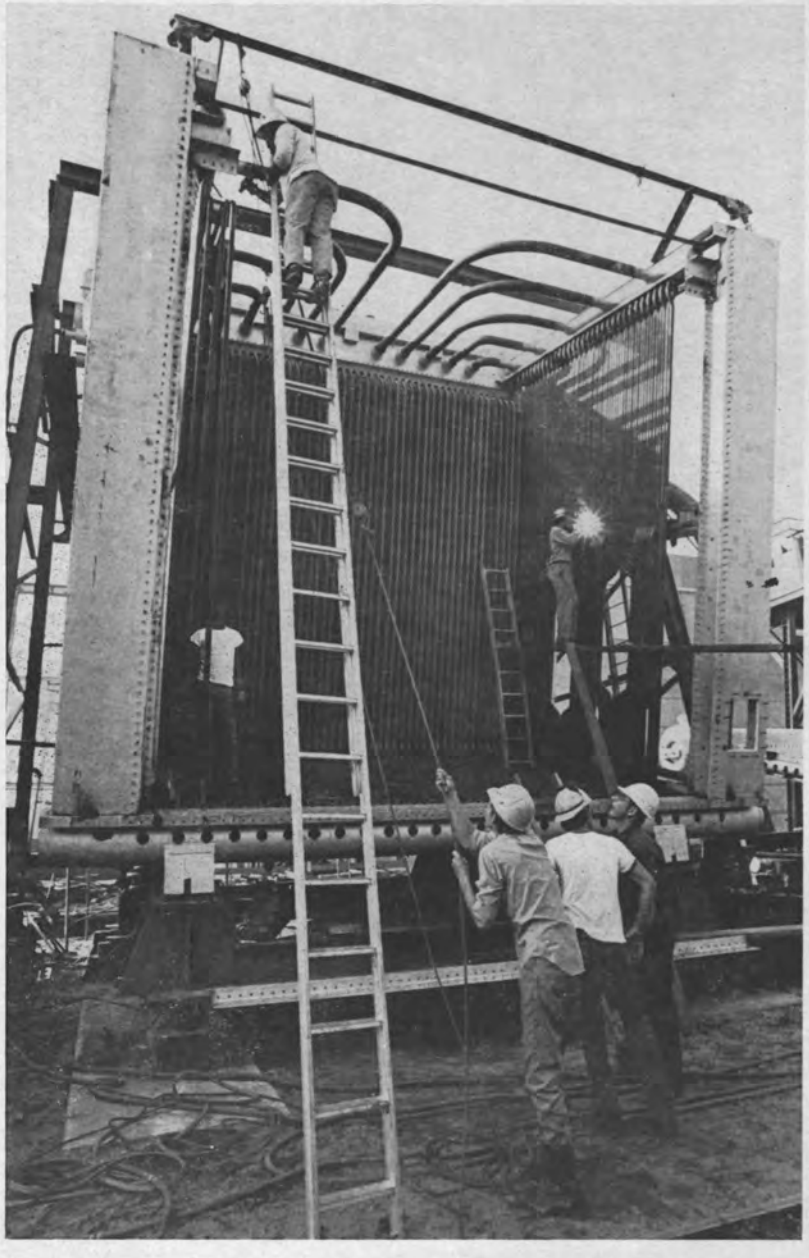
# C-E boilers can be delivered assembled.

Many shipbuilders now specify delivery of assembled boilers. They profit from these advantages:

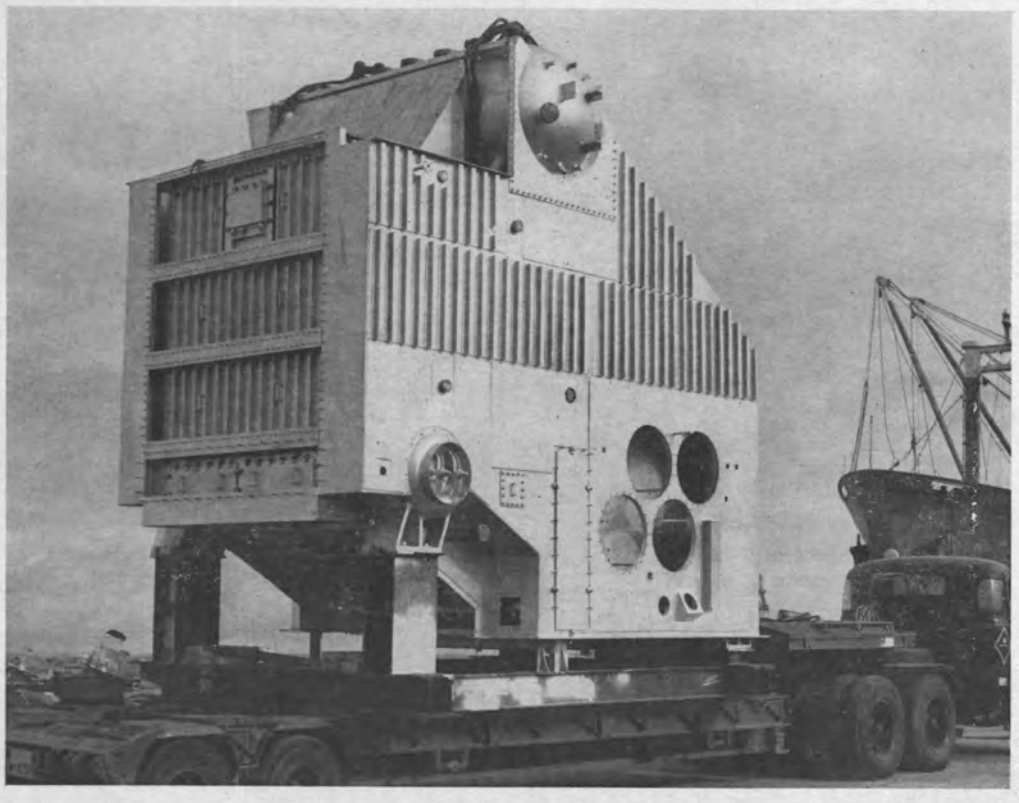
- Boilers ready for installation aboard ship.
- Reduced storage space.
- Reduced materials handling.
- Single source responsibility for workmanship and materials.

To discover how C-E assembled boilers can help you save time and money, contact C-E Marine Division, Combustion Engineering, Inc., Windsor, Connecticut 06095.

**MARINE DIVISION**
COMBUSTION ENGINEERING, INC.



*Left:* **V2M-8** boiler being assembled for delivery to the Seatrain Shipbuilding Corp., Brooklyn, New York for installation in one of its 230,000 dwt tankers—the largest ships built in the USA.
*Below:* One of ten **V2M-VS** assembled boilers enroute to a Spanish shipyard.
*Right:* **V2M-9** boilers, like this one, are being delivered and installed in ships under construction in Scandinavia.



## Anixter Publishes Full-Color Brochure On Wiring Systems

Six pages of full-color illustrations and accompanying text describe the capabilities of Anixter Wiring Systems, Inc., Aurora, Ill., in the fabrication of all types of electrical wire and cable products and assemblies.

The output of Anixter Wiring Systems is classified in five product groups: wiring harnesses, cable assemblies, power cords and cord sets, lead wires, and molded plastic and rubber parts. Illustrations show each type of product and the production equipment used in their fabrication.

The facilities of Anixter Wiring Systems occupy nearly 200,000 square feet in four plants, three in Aurora and one in Tipton, Ind. General offices are located at 325 South Union Street, Aurora. The parent company, Anixter Bros., Inc., has its international headquarters in Skokie, Ill.



## IHI Delivers World's Largest Tanker


The top of the radar mast of the Nisseki Maru is as high as a 22-story building, and she can carry enough oil on a single voyage to fill 180 Olympic swimming pools.

The 372,400-dwt Nisseki Maru, the world's largest tanker, was recently delivered to the Tokyo Tanker Co., the tanker division of the Nippon Oil Group, by the Kure Shipyard of IHI (Ishikawajima-Harima Heavy Industries Co., Ltd.), Japan.

The gigantic ship was constructed at the No. Two 400,000-dwt capacity building dock at IHI's installation at Kure. The ship is approximately 1,139 feet long, 1/6 as much again as that of the Eiffel Tower. The top of the radar mast is as high as a 22-story building. Sixty-three tennis courts could be laid out on the area of the upper deck. The ship can carry approximately 118,800,000 gallons of oil on a single voyage, an amount that would fill 180 Olympic swimming pools. The vessel is about 179 feet wide and 115 feet deep. The 40,000-shp turbine develops a service speed of 14.5 knots.

The Nisseki Maru will be assigned to the Persian Gulf-Japan route and carry a total of approximately 1,056,000,000 gallons of crude oil in nine voyages yearly to the Nippon Oil Group's Kiire central terminal station (CTS) in southern Kyushu.

The ship is a fantastic engineering achievement, but it will not be able to boast of being the biggest tanker in the world for long. IHI has two 477,000-dwt tankers on order from Globtik Tankers Ltd. of London. Work starts on the first of these in February 1972, also at the Kure Shipyard.

Features of the Nisseki Maru are:

**Inert gas system**

The inert gas system prevents the vessel's tanks exploding. The system blows inert gas into the ship's oil tanks, full or empty, reducing the oxygen density of the air inside the tanks to keep them safe from explosion. The exhaust gas of the vessel's boiler is used as inert gas after it has been cooled and cleaned by seawater, because the gas is too hot and contains some sulfur when it comes straight from the boiler exhaust.

**Fixed-type tank cleaning device**

In addition to 14 cargo oil tanks and one ballast tank (seawater tank), the vessel is furnished with two slop tanks for separating oil from water. Fixed-type automatic cleaning equipment has been adopted for the tanks of the ship. After cleaning, the slop is collected into the slop tanks and separated into oil and water. The clean water alone is discharged out of the vessel, and the oil is kept in the tanks until it is unloaded with the cargo crude oil in port.

**Slow speed meter**

As the vessel is a large tanker of 372,400 tons, a slow speed meter is provided to measure with the utmost precision the vessel's slightest movements in all directions, whether they are caused by wind or waves during the vessel's siding, anchoring, leaving, or passing through a narrow water passage, in order to prevent the vessel from grounding or colliding against the dock.

**Anti-collision device**

New mammoth ships are equipped with two radar units. This vessel is furnished with an anti-collision device attached to one radar to automatically warn the crew of any approaching vessel or obstacles. This device proves effective on dark nights, in stormy weather, in fog, or in rain.

**Centralized control system**

The vessel's main engine, boiler, and most of its auxiliary equipment are centrally monitored from the engine control room, and the main stand-by equipment is switched over automatically to function at any time the regular equipment malfunctions. The boiler water level is monitored by TV to prevent any boiler explosion that might occur if the water content is insufficient.

# "When that storm hit, I thought I'd lost my tow for sure –any other rope would have parted."

When the McAllister Towing Company first decided to use new blue-tinted Super 707 nylon rope, they didn't know what was in store for them. Captain Frank Bradley was to make a routine trip hauling two heavily laden mud dumpers. Out at sea, a sudden storm caught the captain and his tow. The load put on the Super 707 rope was so great that the heavy-duty-steel thimble was bent. Yet the line held. And everybody and everything got back safely.

The large lines of Super 707 nylon now available are the strongest ever made per unit of weight. In a recent test, the breaking strength of a 3-inch-diameter rope of Super 707 exceeded the Military Spec (MIL-R-17343-D) for nylon by *twenty tons*—although it contained less nylon than permitted by that spec.

And what that means to you is a tougher, more reliable rope. A longer-lasting rope—with greater resistance to abrasion.

So get Super 707 nylon rope. It's the tough one—tinted blue so you'll know it. For more information, write: Du Pont Company, Room 31H1, Wilmington, Delaware 19898.

DU PONT
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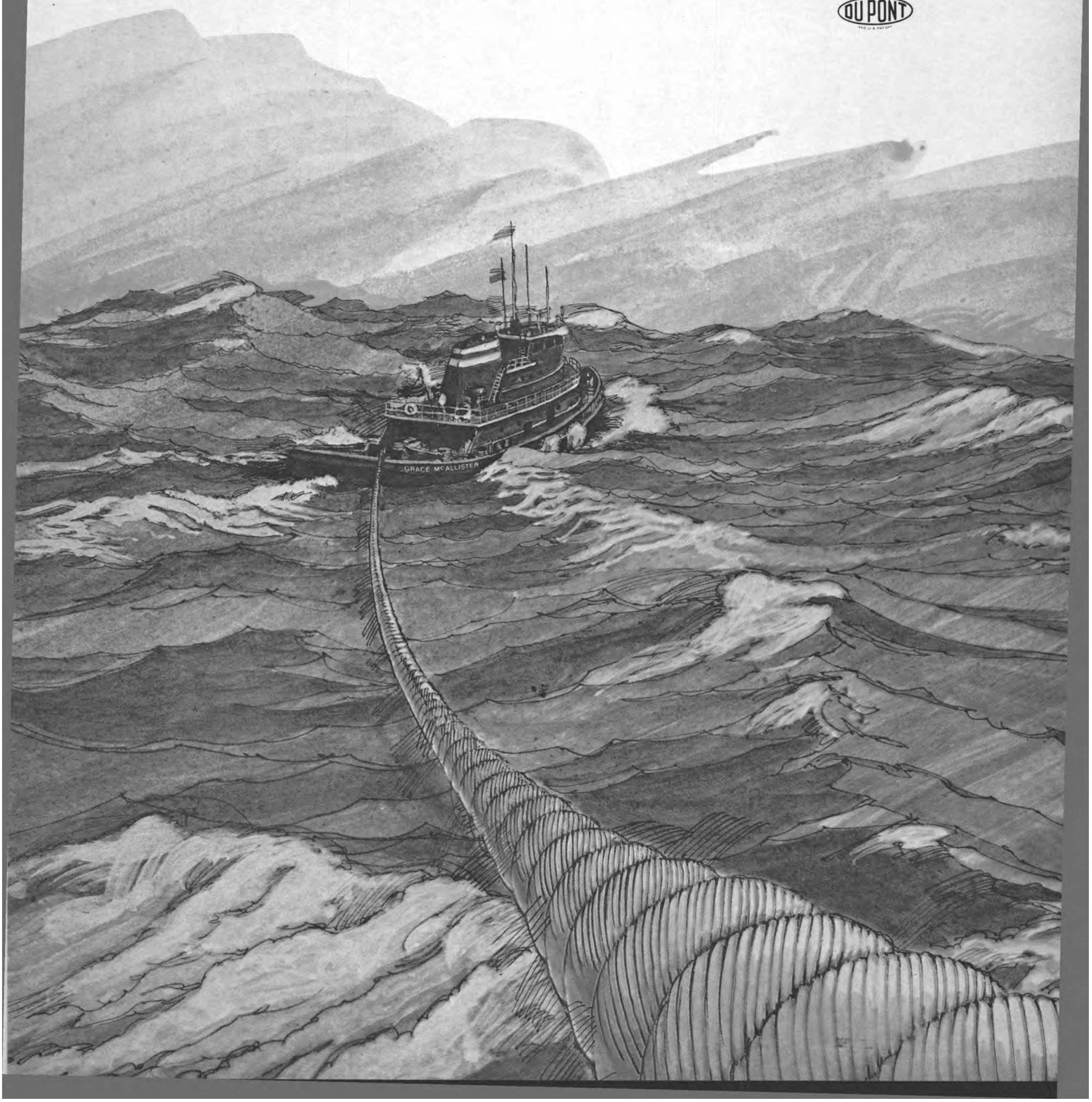


## ABS Elects Fifteen Maritime Executives To Bureau Membership

At a recent meeting of the board of managers of the American Bureau of Shipping held in New York, the following persons prominent in ship design, construction and operation, as well as marine underwriting were elected to membership in the international ship classification society:

**G. Gordon Brown,** vice president, Crum & Forster Insurance Companies, Morristown, N.J.; **Theodore J. Brush,** president, Fraser Shipyards, Inc., Superior, Wis.; **C.D. Chow,** chairman, board of directors, China Union Lines, Ltd., Taipei, Taiwan; **Manuel Garcia Gil de Bernabe,** director of marine construction, Astilleros Espanoles, S.A., Madrid, Spain; **Emmett A. Humble,** general manager, marine department, Humble Oil & Refining Company, Houston, Texas; **Toshio Kohmoto,** president, Sanko Kisen K.K., Tokyo, Japan; Dr. **Glauco Lolli Ghetti,** president, Carbonavi Soc. di Navigazione, Genoa, Italy; **Irving G. Morgan,** director of marine transportation, PPG Industries, Pittsburgh, Pa.; **Kenneth D. Morland,** vice president, American Bureau of Shipping; **Shuichi Okada,** president, Japan Line, Ltd., Tokyo, Japan; **Kay Sugahara,** president, Fairfield Maxwell, Ltd., New York, N.Y.; Vice Adm. **C.C. Tsao,** chairman, board of directors, China Merchants Steam Navigation Co., Ltd., Taipei, Taiwan; **Antonio Vasco Hose de Mello,** managing director, Lisnave-Estaleiros Navais de Lisboa, Lisbon, Portugal; Dr. **Masao Yoshiki,** chief director, Japan Society for Promotion of Science, Tokyo, Japan, and **Arthur Zuehlke,** president, Bay Shipbuilding Corp., Sturgeon Bay, Wis.



## Federal Barge Lines Elects Beiswinger VP And Controller

Gilbert Beiswinger

**Peter Fanchi Jr.,** president of Federal Barge Lines, Inc., has announced the election of **Gilbert B. Beiswinger** as vice president and controller. Mr. **Beiswinger** has been with Federal Barge since 1955. He previously served as controller of the company. He will be responsible for all finance and accounting for Federal Barge Lines, Inc. and Gulf Canal Lines, Inc. and their subsidiary companies.

Federal Barge is a subsidiary of Pott Industries Inc. and is engaged in water transportation along the Mississippi, Illinois, Arkansas and Missouri rivers, as well as the Gulf Intracoastal Canal. The company services 17 states along more than 6,000 miles of water routes. Their general office is located in St. Louis, Mo., with regional offices in New York, Chicago, New Orleans and Houston.

## Skagit Appoints Gulf Coast Dealer

CONMACO, Inc. of Belle Chasse, La., has been named a dealer for the marine products line of the Skagit Corporation, a subsidiary of The Bendix Corporation. In making the announcement, **David G. McIntyre,** Skagit president, said CONMACO will handle Skagit's product line of towing winches, anchor handling winches, as well as the new material handling vehicles, including the "Loadrunner" series.

CONMACO will provide sales and service for Skagit products in the Gulf Coast states. Skagit factory representative **Richard Hardin** will continue to service the Houston area.

Skagit Corporation, with 75 years of experience in manufacturing heavy equipment for the forest and marine industries, is located in Sedro-Woolley, Wash.

## IPS Names Three In Marine Operations

IPS, Independent Petroleum Supply Company, has announced that **J.J. Ferrara** has been transferred to the Independent Indonesia American Petroleum Company (HAPCO) as their manager of supply and transportation.

**A.J. Luminoso** will head up marine activities and in particular, tanker chartering, and **B.E. Kahler** will head up tanker operation. Both gentlemen will report to **E.E. Cunningham Jr.**, who is in charge of operations, including marketing, for IPS.

## Babcock & Wilcox Appoints J.R. Ross To I & M Department

**J.R. Ross** has been named manager of applications engineering in the industrial and marine department of The Babcock & Wilcox Company, Barberton, Ohio. He replaces **A.W. Jackson,** who was named general manager and vice president of the industrial and marine department.

Mr. **Ross** will be responsible for marketing to institutions and to the chemical, steel, pulp and paper, marine and general industries. He will handle the sale of marine boilers, Basic Oxygen Furnace hoods, package boilers, wet gas clean-up systems and pulverized coal injection systems.

Mr. **Ross** joined B&W in New York City as an estimator in 1940, after receiving a B.S. degree in industrial engineering from Pratt Institute. He later served as a contract supervisor and assistant project manager. In 1964, he was named manager of service parts sales.

## Olympic Steamship And Norton, Lilly Announce Agreement

**G.R. Seefeldt,** president, Olympic Steamship Co., Inc. of Seattle, Wash., and **John Griffith,** chairman of the board, Norton Lilly & Co., Inc. of New York, N.Y., have announced an agreement between the companies relating to their West Coast operations. Under the agreement, Olympic, a Seattle-based company with over 30 years' activity on the Pacific Coast, have closed its California offices as of October 1. Norton, Lilly, a New York company with 130 years of continuous operations in the maritime field, will reopen offices in San Francisco and Los Angeles at Olympic's present locations—at 425 California Street in San Francisco, and One Wilshire Boulevard in Los Angeles—and the two companies will act as sub-agents for each other in California and the Pacific Northwest.

Under this agreement, Olympic will continue as Norton, Lilly's agent for the Shipping Corporation of India in the U.S. Pacific Northwest, while in California the line will be handled by Norton, Lilly as of October 1. Olympic's other activities at Seattle and Portland will continue without interruption.

**William F. Horton,** presently vice president for California of Olympic, will head Norton, Lilly's new organization as vice president, West Coast. Mr. **Horton** is president of the Foreign Shipowners Association of the Pacific Coast.

**Ralph Kramer** and **Ernest Schenk** will continue as district managers for Los Angeles and San Francisco, respectively, in Norton, Lilly.

## Chotin Transportation Appoints F.R. Keegan

Capt. **Scott Chotin,** president of Chotin Transportation, Inc., has announced the appointment of **Francis R. Keegan** as vice president of traffic. Chotin Transportation is a New Orleans, La., based barge line which operates 13 towboats and 200 tank and dry cargo barges on the inland waterway system.

Mr. **Keegan** joined Chotin on August 16, 1971, leaving a similar position with B&M Towing Company of Houston, where he served for nine years. Mr. **Keegan** has over 25 years of experience in the water transportation industry. He started in 1945 with National Marine Service, Inc. and served in various positions until 1960. In 1960, he became traffic manager of Missouri River Barge Line at Kansas City and was appointed vice president of B&M Towing Company in 1962.

## Webb Institute To Hold Annual Alumni Banquet In New York Nov. 10

The Webb Institute of Naval Architecture Alumni Association will hold its annual banquet on Wednesday, November 10, at the Summit Hotel, East 51st Street at Lexington Avenue, New York City.

A reception will be held in the Embassy Room D beginning at 5:30 p.m. Dinner will be served at 7 p.m. in the adjoining Embassy Room A. **Robert Mende,** president of the association, will introduce the program for the evening. Among the highlights will be a presentation of the sixth W. Selkirk Owen Award and a brief talk by the president of Webb, Rear Adm. **William A. Brockett,** USN (ret.).

The presence of the wives of alumni again this year is expected to add immeasurably to the success of the banquet. All members of the Webb Family are cordially invited to attend.

## Marine Club, N.O. Elects Calhoun Pres.


**Jack Calhoun,** newly elected president of the Marine Club of New Orleans, is pictured above during the election ceremonies.

**Jack Calhoun,** senior surveyor, American Bureau of Shipping, has been elected president of the Marine Club of New Orleans.

During the recent annual election, **Ernie Leingang** of Elm Supply Co., Inc., was named vice president, **Eddie Larmann** of Ship's Electric Service, treasurer, and **Daniel Trawick** of Avondale Shipyards, Incorporated, secretary.

The following were elected to the board of governors: **Alfred (Mickey) Johnson** of Bailey Corporation; **Godfrey Smallwood** of Avondale Shipyards, Inc.; **Harvey McNeely,** Marine Surveyor; **Childs Dunbar** of Hunt Shipyards; **Sal Chimento** of RCA Service Company, and **Sewell Williams** of Algiers Iron Works & Drydock Company, Incorporated.

Mr. **Calhoun** stated that the club installed new officers on October 2, with ceremonies at the Bayou Barriere Country Club, Belle Chasse.

Mr. **Calhoun** also serves as chairman of the Technical Advisory Committee of the American Welding Society, New Orleans section.

## New Company Formed By Kerr And Stevenson

Kerr Steamship Company, Inc. and T.J. Stevenson & Company, Inc. have announced that certain agency interests were transferred effective October 1, 1971. A new company, Stevenson-Kerr Company, Inc., has been formed and will be responsible for the agency representation of Compania Peruana de Vapores, Det Dansk - Franske Dampskibsselskab and Marine & Marketing International Corporation. The headquarters for the new company will be located at 29 Broadway, New York, N.Y., and the Gulf headquarters will be located at 506 Caroline Street, Houston, Texas. In addition to these two primary locations, Stevenson-Kerr Company will have a network of offices in all principal cities throughout the United States, Canada and Mexico.

Kerr Steamship Company will retain its present agency interests and other functions. T.J. Stevenson & Company will retain all of its shipping and non-shipping interests other than those noted as agencies of the new company.

Compania Peruana de Vapores (Peruvian State Line) offers regular service from East Coast, Gulf and Pacific Coast ports of the United States and ports in Eastern and Western Canada to the West Coast of South America. Dafra Lines offer regular service from U.S. Gulf and South Atlantic ports to West Africa, and Marine & Marketing International Corporation (M.M.I.) operates an American-flag ro/ro and container service from Miami to Puerto Rico.

## Shipbuilders Council Supports U.S. Ships For LNG Importation

In connection with increasing prospects for utilization of foreign source liquefied natural gas (LNG) to satisfy the nation's energy deficiencies, the board of directors of the Shipbuilders Council of America at its recent quarterly meeting unanimously agreed on advocacy and support of the following goals:

1. A declaration of national policy favoring the importation of LNG, where necessary, in American-built vessels.

2. A show of evidence of the industry's capability to produce LNG carriers in increasing numbers to meet expanding requirements.

3. A series of public statements demonstrating that the technology of LNG transportation and the state of the art of shipbuilding minimize ecological risks.

4. A pronouncement of Administration intentions to make construction subsidy funds and Title XI Mortgage Insurance Guarantees, plus other provisions of the Merchant Marine Act of 1970, available for LNG carriers.

5. A continuing effort to ensure that the provisions of the Jones Act are applicable to LNG barges and vessels for noncontiguous, intercoastal, coastwise or interstate services.

6. A series of presentations, as interveners, before the Federal Power Commission by the Maritime Administration and any other interested parties on behalf of continued utilization of American-built vessels for the importation of LNG in those cases where water transport is involved.

Regarding points one and six above, the Council's board took a positive stand favoring importation of all LNG by American-built ships and cited the changing nature of the balance of payments problem as justification.



## Newport Ship Yard Awarded Army Contract

Newport Ship Yard, Inc., Newport, R.I., has been awarded a contract by the U.S. Army Mobility Equipment Research and Development Center at Fort Belvoir, Va. The contract, valued at approximately $25,000, calls for the design, fabrication, and testing of a 26-foot bridge erection boat. The vessel is a prototype craft to be of welded aluminum, diesel powered, and designed for shallow draft mobility. Construction will be such that the vessel can be carried on a trailer over rough terrain.

The contract is the first of its type for Newport Ship Yard in that the firm will be responsible for the original design concept, complete manufacture, and testing. Design activity will be coordinated by staff members of J.J. Henry Co., Inc., naval architects of Moorestown, N.J. Delivery of the boat is scheduled for early 1972, following sea trials at Newport. It will be built in the yard's new 7,200-square-foot fabrication center.

In a joint statement, president **Neil C. Peirson** and vice president **Michael E. Collins** said that this contract award represents a continuing growth of the firm into additional areas of marine industrial activity, and that it is a significant step in expanding capabilities of the Newport Ship Yard.

## New York Navigation Opens Houston Office

New York Navigation Company Inc., which specializes in serving the oil industry, has opened an office at 3200 Travis Street in Houston, Texas. The office is headed by **Robert L. Easton,** vice president.

New York Navigation Company is a major contractor for overseas shipping of oil rigs, extra heavy lift cargoes, pipelines and refineries, both for import and export, for the oil, engineering and construction trades.

In opening the Houston office, New York Navigation Company stated it felt Houston gave the most central location in view of the increasing concentration of traffic personnel for the oil related industries in the Southwestern area of the United States, especially for the Louisiana-Texas Gulf Coast shippers.

New York Navigation Company, with headquarters in New York City, also has offices in London, Rotterdam, Hamburg, and Madrid. Biehl & Co. will serve as steamship agents for the firm in the Gulf Coast area.

## New Seatrain Express Service From Europe To U.S. Pacific Coast

Another giant step forward in Seatrain's expansion program began with the announcement of express service from Europe to the United States Pacific Coast. The announcement was made simultaneously by **Arthur C. Novacek,** president of Seatrain Lines Container Division in Europe and **Frank Troxel,** president of Seatrain Lines California.

Mr. **Novacek** said the service began with the sailing of the new 220-container Lord Of The Isle from Southampton, Bremerhaven and Rotterdam. "Combined with the Spindrift Isle and Fiery Cross Isle, Seatrain will be able to offer 22-knot express service from the most requested ports of Europe to the rapidly expanding Pacific Coast markets," Mr. **Novacek** said. "This new service is another example of the forward looking posture adopted by Seatrain which, in a very short time, has made it one of the largest container lines in the world," he added.

In making the announcement on the West Coast, Mr. **Troxel** said: "Seatrain believes in filling a need where one exists in ocean transportation. While expanding our North Atlantic service, many shippers requested a direct route to and from the West Coast . . . Seatrain is fulfilling that need with these new ships and backing it up with the most effective marketing organization on the West Coast and in Europe."

The service will operate to and from both Los Angeles and Oakland.

Mr. **Novacek** pointed out that "in less than two years of operations on the North Atlantic, Seatrain has been acknowledged as the innovator and leader in containerized shipping. To help maintain that leadership, we are instituting this new service as a direct result of customers' requests . . . Seatrain believes strongly in giving customers the service they need, when they need it."



## Bently Nevada Names Alberigi As Consultant For Marine Industry

Walter P. Alberigi

**Charles P. Reid,** vice president of marketing, Bently Nevada Corporation, has announced the appointment of **Walter P. Alberigi** as the firm's marine industry consultant.

Mr. **Alberigi** has been retained to establish and supervise market planning in the company's marine sales department. His past experience includes 30 years in the marine industry, primarily as a marine engineer. Mr. **Alberigi** is well known to shipbuilders and owners alike through 28 years with Grace Line, Inc., as chief engineer and assistant superintendent of maintenance and repair. He recently held the position of Foreign Ship Repair Officer for the U.S. Maritime Administration.

Mr. **Alberigi** is a commander, USNR (ret.), and a member of The Society of Naval Architects and Marine Engineers, the Society of Marine Port Engineers (Port of New York), and the American Society of Naval Engineers. He holds a chief engineer's license in the U.S. Coast Guard and a first class engineer's license in the ports of Baltimore, Md. and Washington, D.C.

Bently Nevada Corporation manufactures proximity measuring instruments for monitoring and measuring shaft dynamic motion, vibration and position in rotating equipment such as turbines, engines, pumps, etc. Bently Nevada has offices throughout the United States, Europe and the Far East. Mr. **Alberigi** will maintain an office in the main plant at Minden, Nev.

**Don Mechling, Vice President**
**A.L. Mechling Barge Lines, Inc.**

"We bought a HYDRODYNE towboat because of its efficiency, handling ability, and thrust! It's the greatest, most vibration free towboat I've ever been on. There are no towboats in this horsepower range that can compare with the M/V Daniel Webster's performance, as a line haul towboat, over the past three years". (Mechling has purchased three St. Louis Ship Hydrodynes).

**Earl Rose, Chairman**
**Rose Barge Lines, Inc.**

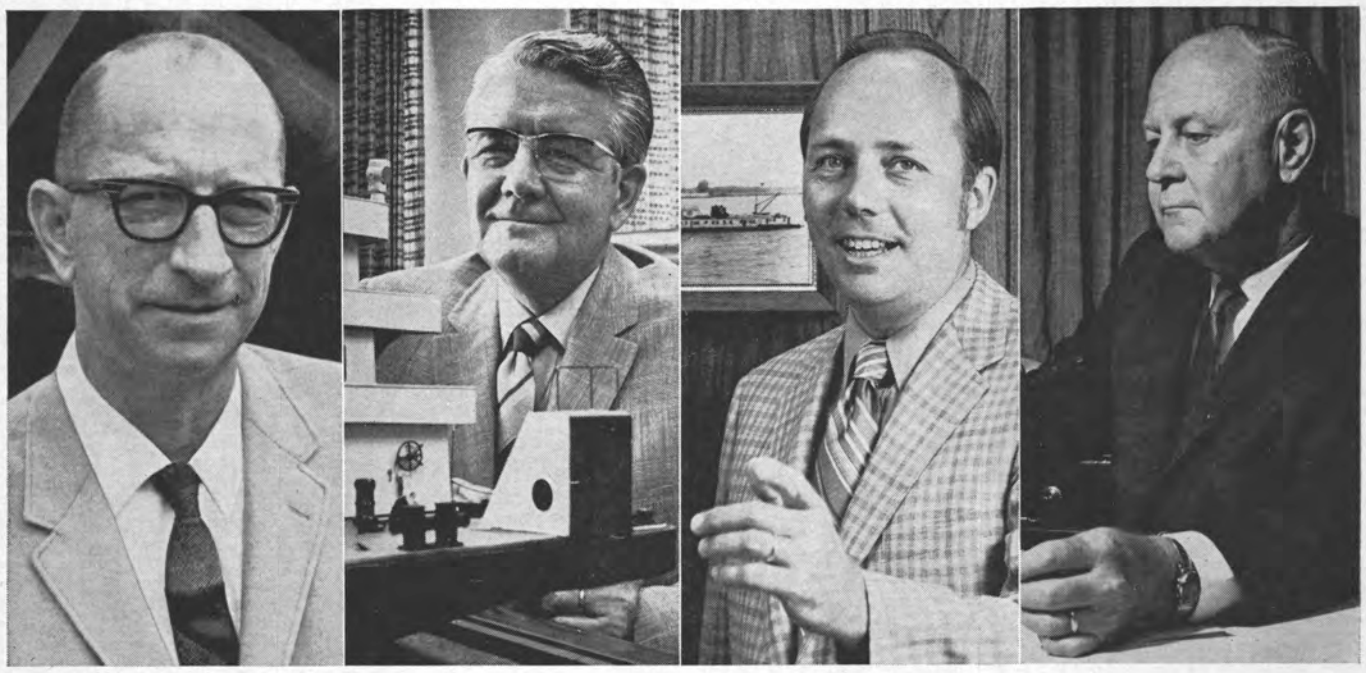
"Our two HYDRODYNE towboats are the best workhorses on the river. In our opinion, they'll outpush any other two 5000 h.p. towboats by 20% or more. We are *convinced* that beauty of both design and appointments, *and* maximum operating efficiency do go together". (Mr. Rose made this statement after his barge line had thoroughly tested the M/V American Beauty and M/V Crimson Glory).

**Ray Eckstein, President**
**Wisconsin Barge Line, Inc.**

"You make money with PUSH, and our 3 HYDRODYNE towboats give up to 20% more push, with terrific steering ability. The M/V Rose Tranchita, was built by St. Louis Ship from the same blueprints drawn for our M/V Kathryn Eckstein and M/V Penny of Cassville. We didn't change a thing". (Wisconsin Barge has purchased a total of four Hydrodynes).

**Walter F. Hagestad, Exec.V.P.**
**Canal Barge Co.**

Canal Barge Co. owns two St. Louis Ship HYDRODYNES. The M/V Joseph M. Jones, one of the first Hydrodynes, began setting records of all kinds immediately after delivery. On the strength of these and succeeding records, St. Louis Ship designed and built the M/V Elaine Jones, which except for increased horsepower, is a sister ship of the pacesetting Joseph M. Jones.



# unanimous hydrodyne

Leading barge line executives, responsible for the efficiency of their extensive operations, know HYDRODYNE. Let us show you how our exclusive Hydrodyne concept provides greater thrust, as well as handling and steering ability superior to any other towboat. St. Louis Ship towboats are widely known for quality, performance and low maintenance costs. We'd like to design *your* next towboat to work harder and increase your profit.
Call us at (314) 638-4000

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

**228,825-DWT TANKER:** Hitachi Zosen's Sakai Shipyard recently delivered the 228,825-dwt tanker World Baroness to Liberian Shield Transports Inc. This is the third vessel of the 230,000-ton type series. The first vessel of this series, Eiko Maru, was completed in April 1971, and the second, Sanko Lake, was completed in June 1971. The new tanker, measuring approximately 1,001 feet by 167 feet by 85 feet, is powered by a steam turbine with a maximum output of 33,000 hp producing a speed of 16.2 knots. The main turbine and boilers are controlled from the wheelhouse, and the engine control room and watching of principal auxiliary machinery is centralized. The tank arrangement and cargo system is designed for the carriage of different cargoes of crude oil.



## Joint Industry-Labor Group Opens Efforts To Promote Use Of U.S.-Flag Shipping


The National Maritime Council's Executive Committee, shown left to right, are (seated): **A.E. Gibson,** Assistant Secretary of Commerce for Maritime Affairs; **Paul F. Richardson,** president of Sea-Land Service, Inc., and Chairman of the NMC's Board of Governors; **Thomas W. Gleason,** president of International Longshoremen's Assn., and **Paul Hall,** president of Seafarers International Union. Standing, left to right, are: **Robert E. Benedict,** president of American Mail Line, Ltd., **Edwin M. Hood,** president of Shipbuilders Council of America; **Thomas J. Smith,** president of Farrell Lines, Inc.; **J.W. Clark,** president of Delta Steamship Lines, Inc.; **Jesse Calhoon,** president of National Marine Engineers Beneficial Assn.; **Page Groton,** assistant to president, International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers & Helpers, and **Mel Barisic,** vice president of National Maritime Union. Executive Committee Chairman **James Barker,** president of Moore-McCormack Lines, Inc., is not pictured.

The traditionally fragmented American maritime industry, in an unprecedented display of unity, has put aside its factional differences and is embarking on a concerted drive to increase shipper patronage of the American merchant marine. Meeting in Washington, D.C., recently, leading officials of a broad spectrum of major shipping lines, shipyards, seafaring and shipbuilding labor unions completed the organization of a National Maritime Council which will undertake a nationwide program to promote greater use of American-flag ships.

During the first business meeting, **Paul F. Richardson,** president of Sea-Land Service, Inc., was elected chairman of a 33-member Board of Governors. Additionally, a 12-member Executive Committee, headed by **James R. Barker,** president of Moore-McCormack Lines, Inc., was elected, and **Edwin M. Hood,** president of the Shipbuilders Council of America was named treasurer.

The impetus for the formation of the NMC was provided by the Assistant Secretary of Commerce for Maritime Affairs **Andrew E. Gibson,** who heads the Maritime Administration, the Federal agency responsible for the promotion of the American merchant marine. Mr. **Gibson,** who was the chief architect of President **Nixon's** maritime program, embodied in the Merchant Marine Act of 1970, has long stressed that the maritime industry must work together to attract shipper support of the merchant marine.

Mr. **Gibson,** who will serve on the Executive Committee of the NMC, told the industry members that the Maritime Administration's Office of Market Development will be available to compile and analyze this nation's foreign trade data to identify the leading shippers and quantify the types of cargoes they generate.

In addition to nationwide promotional activities, the NMC has formed Regional Action Groups to make direct contact with shippers to acquaint them with American-flag services. The following were named chairmen of the Regional Groups: Eastern Region, **James R. Barker,** president, Moore-McCormack Lines, Inc.; Central Region, Capt. **J.W. Clark,** president, Delta Steamship Lines, Inc.; Western Region, **Robert E. Benedict,** president, American Mail Line, Ltd.

Noting that less than 6 percent of the United States' waterborne import-export trade moved in American-flag ships last year, Mr. **Richardson** said that the low level of shipper patronage not only aggravates the nation's already critical balance of payments problems but also is impeding the implementation of President **Nixon's** maritime program to revitalize the merchant marine. He explained that far greater shipper support is needed to enable American-flag lines to line up the investment capital needed to undertake the expanded ship construction programs called for in the President's program.

According to the shipping executive, there appears to be widespread ignorance on the part of American shippers that the United States has the largest and most modern fleet of highly efficient containerships and barge-carrying ships in the world today. Such ships, he stressed, not only offer superior service, but also offer rates competitive to those charged by foreign-flag lines. "We have to get this point across to the American shippers, and try to instill in them the spirit of nationalism that all other major maritime nations display in favoring their ships for the transport of their cargoes," he added.

# The Texaco worldwide capability. What's it worth when you're about to sign?

How do you take the measure of a back-up capability that stretches to 485 world ports?

How do you weigh the uniform quality of lubricant and fuel performance that a Texaco single-source contract assures?

Or the lifelong dedication of over one hundred career professionals that stands behind each contract?

What's "on-time" dependability that one-source responsibility imparts to tight turn-around schedules mean?

Actually, there *is* no way you can put a price on such things.

But then again, it's this priceless capability that makes all the difference in the world.

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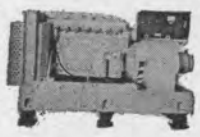
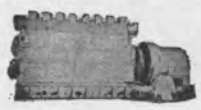
## DIESEL GENERATOR SETS

1 

**G.M. 6-71 DIESEL GENERATOR SET**

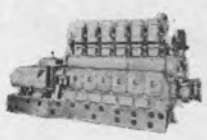
60 KW—440/3/60—1200 RPM—with switchgear.

2 

**350 KW 120/240 VDC DIESEL GENERATOR SET**

Ingersoll-Rand heavy duty type S engine—8 cyl.—505 HP—10½ x 12. GENERATOR: G.E. 350 K.W. 120/240—600 RPM—switchgear. Good condition—as removed from Grace Line ships.

**250 KW DIESEL GENERATOR SET**

3 

ENGINE: Enterprise 12 x 15 DSG-6—6 cyl.—450 RPM crank No. 50J. GENERATOR: Westinghouse 250 KW—120/240 DC—1040 amps—450 RPM. Typical serial No. 3S-10P-913. Complete with switch gear.

**$12,500.**

4 

**UNUSED 500 KW 120/240 VDC BALDWIN/ALLIS CHALMERS DIESEL GENERATOR SET**

ENGINE: Baldwin-DeLaverne 725 HP—12⅜"x15½"—8 cyl.—500 RPM—air starting. Dry weight 54050 lbs. GENERATOR: Allis-Chalmers 500 KW—120/240 VDC—500 RPM—550 RPM overspeed. 60°C rise—class B insulation—3-wire—25% unbalance—2083 amps—stab. shunt—open—drip-proof—self-ventilated—8-poles.

5 

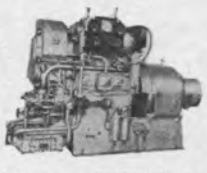
**UNUSED 100KW SUPERIOR DIESEL GENERATOR SET**

GENERATOR: 120/240 VDC—417 amps—stab. shunt—1200 RPM. DIESEL: Superior GBD-8—8 cyl.—5½x7.

6 

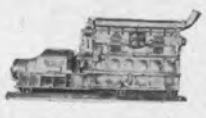
**UNUSED 10 KW SUPERIOR DIESEL GENERATOR SET**

GENERATOR: Delco 10 KW—120 VDC—83.3 amps—1200 RPM. ENGINE: Superior diesel—2 cyl.—4½x5¾—15 HP—heat exchanger cooled.

7 

**100 KW G.M. 3-268A DIESEL GENERATOR SET**

Like new. ENGINE: G.M. 3-268A—3 cylinder—6½" x 7" bore and stroke. GENERATOR: General Electric—100 KW—440 volts—3 phase—60 cycle.

8 

**250 KW COOPER BESSEMER DIESEL GENERATOR SET**

250 KW Cooper Bessemer constant duty diesel generator set. ENGINE: Cooper Bessemer FS-6—6 cylinder—8¾" x 11" bore and stroke—900 RPM—3968 cubic inches. GENERATOR: General Electric 250 KW—312 K.V.A.—type ATI—frame 975Y—450 volts—3 phase—60 cycle—80% P.F. continuous. EXCITER: 4.5 KW—120 volts. With switch gear.

## TURBO GENERATOR SETS

9 

**WESTINGHOUSE 440/3/60 200 KW UNIT**

GENERATOR: Westinghouse 200 KW—250 KVA—450/3/60—1200 RPM—80% PF—with 40 KW—120 VDC on same shaft. GEAR: 9989/1200 RPM—double helical. TURBINE: Westinghouse—540 PSI—superheat 322°F. Test 930 PSI 800°TT. Also operates 615 PSI—850°TT.

10 

**WESTINGHOUSE 60 KW 120 VDC M-20-EH**

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

11 

**300 KW WORTHINGTON-MOORE CROCKER-WHEELER UNITS**

AP2 ExMedina Victory units. Worthington-Moore turbine—440 lbs—740°TT—28½" vac.—type S4—5-stage—6097 RPM—serial 7547 & 7548. GEAR: 14x7—6097/1200. GENERATOR: Crocker-Wheeler 300 KW 120/240 DC—1250 amps—type 102-H—compound—973643—999759—armature flange 8¼"—bolt circle 7"—12 holes. Also new armature in stock (weighs 1840 lbs). Also have 2 units—generator 102 HP—300—KW120/240—stab. shunt—1200 RPM.

12 

**VICTORY 300 KW WESTINGHOUSE TURBO GENERATOR SET**

440# — 740°F — 5930 RPM — 2A-9794-15-16-17 — coupling non-recessed on steam end of pinion—5¾". GENERATOR: Westinghouse 300 KW—120/240 DC—1250 amps—1200 RPM—C.B. 208.4.

**G.E. 600 KW GEARED TURBO GENERATOR SETS**

13 

G.E. 600 KW geared turbo generator sets—525 lbs—825°F. **TURBINE:** Type FN3-FN-20—6-stage—882 HP—600 KW—525/565 lbs. G—superheat 355/371°F—exhaust pressure 1" abs. Test steam chest 850# G. 10033 RPM—6390 lbs steam flow per hour. **REDUCTION GEAR:** Single helix—single reduction—10033/1200. **GENERATOR:** G.E.—600 KW—450/3/60—1200 RPM—type ATI—0.8 PF—961 amps continuous—2 hours 25% overload—(750 KW) 1200 amps—5 minutes (900 KW) 1400 amps. Totally enclosed—water cooled—amb. temp. reg. 50°C. **EXCITER:** 7.5 KW—120 VDC—direct connected. Complete with rheostat type voltage regulator & motor operated generator field rheostat.

**FURNISHED WITH ABS OR LLOYD'S CERTIFICATE**

14 **WESTINGHOUSE**

**MAIN GENERATOR LEVER OPERATED CONTROL CUBICLES**

**— COMPLETE —**

15 

**1000 KW G.E. TURBO GENERATOR—READY TO GO—WITH A.B.S.**

TURBINE: Type FSN—eight stage—9268 RPM—525 lbs—825°TT or 590 PSI & 0° superheat. Turbine serial No. 53729. GEAR: Serial 54804—9268/3600. GENERATOR: Serial 5596572—1000 KW—450 volt 3-phase 60 cycle—3600 RPM—0.8 PF—type ATB—2-pole—complete with air cooler. EXCITER: EDF—10.2 KW—120 volts—4-pole—3600 RPM—direct conected. UNIT JUST COMPLETELY OVERHAULED & IN EXCELLENT CONDITION—READY TO INSTALL.

## TURBINE ROTORS

### MAIN PROPULSION

16 

**19 STAGE WESTINGHOUSE H.P. ROTOR FOR AP2 VICTORY**

Reconditioned — balanced—with ABS. Serial 4A-2079—type B—19 stage reaction blades. Excellent — just out of shop. 13" Flange diameter with 14 bolts.

17 ***SPECIAL!***

**COMPLETE TURBINE OR ROTORS**

**8500 HP G.E. C-3 Victory—Sun C-4's**

L.P.—Serial 77943 H.P. Serial 77942
G.E.I. 16263

18 **NEW L.P. BLADE RINGS**

**for large 8500 H.P. Victory**

Joshua Hendy Westinghouse

**NEW 8500 H.P. G.E. TURBINES**

19 **Large Victory or C-3**

H.P. #72271 L.P. 72272

10 BOXES SPARE PARTS, TOOLS & FITTINGS. WITH MANEUVERING VALVES.

**ALSO AVAILABLE**

**U.S.M.C.**

20 **RECONDITIONED SET**

**H.P. & L.P.**

With 13 boxes spare parts. H.P. 77994—L.P. 77987—with maneuvering valves.

21 **3500 H.P. G.E. — C-3 OR VICTORY**

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

22 **6000 H.P. G.E. — NORTH CAROLINA C-2**

H.P.—8-stage—serial 78040
L.P.—7-stage—serial 78043
G.E.I. 16262

23 **VICTORY SHIP AP2 H.P. & L.P. TURBINES NEW — UNUSED — 6000 HP SETS**

G.E.—H.P. & L.P.—with throttle valve
Westinghouse—L.P.—with throttle valve
Allis-Chalmers—H.P. & L.P.—with throtle valve

### AUX. GEN. ROTORS

**250 KW & 300 KW ALLIS-CHALMERS ROTORS**

24 

Typical serial No. 3067—will interchange with most 250 KW & 300 KW Allis-Chalmers as installed on Victory's and Moore C2-C3 vessels.

25 **300 KW 5965 RPM JOSHUA HENDY**

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

## T-2 ROTORS, STATORS COOLERS, ETC.

**26** ELLIOTT 10-STAGE MAIN PROPULSION TURBINE ROTOR

#28702—Ex-Texas Trader—will interchange with large G.E. 1st Row—1 1/8" to shroud—1 3/16" O.A.H. 2nd Row—1 7/16" to shroud—1 9/16" O.A.H.

**27** UNUSED G.E. MAIN GENERATOR AIR COOLER

## PUMPS

**28**

VICTORY AP2 MAIN CIRCULATOR

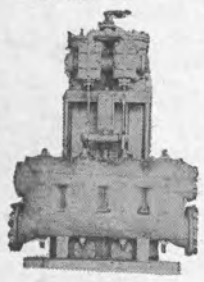
Ingersoll-Rand — 18 VCM—20" x 18"—10,500—10 lbs. MOTOR: 75 HP—Allis Chalmers—230 VDC—670 RPM. Spare unused armature. Motor frame F.B.V.—162.

**29**

UNUSED 10x9x12 VERTICAL SIMPLEX FUEL OIL TRANSFER PUMPS

Furnished on some T-2 Tankers. 160 GPM Bunker C—viscosity 70 to 700 SSF 122°F @ 100 lbs. discharge pressure. WP steam 150 lbs.—exhaust 10 lbs. 1¼" steam inlet—1½" exhaust. 4" Pump suction—3½" discharge.

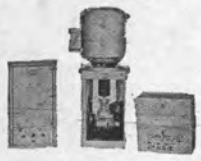
**30**



WORTHINGTON 16"x14"x18" VERTICAL DUPLEX STRIPPING PUMP

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

**31**



NEW BLACKMER FUEL OIL TRANSFER PUMP

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

**32**

UNUSED BLACKMER VERTICAL ROTARY PUMP

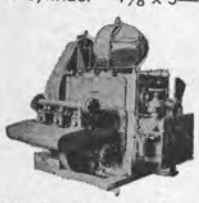
4"—100 GPM—100 PSI—15 HP — 440/3/60 — gear head.

**33**

R-2418 WATEROUS CARGO PUMP

Bronze—14"—top discharge—capacity 2500 GPM—20 PSI. Bilge service—oil service—2400 GPM—75 PSI. Reduction gear. ENGINE: Cummins JN-130M—6 cylinder—4⅛ x 5—130 HP—air starting.

**34**



UNUSED BOILER FEED PUMP

Worthington Triplex—36.5 GPM—590 PSI—variable stroke—2¾ x 5—$P_2$—$S_2$—$R_2$ vessels. 40 HP—230 VDC—1800/2400 RPM.

**35**

UNUSED WARREN BRONZE PUMP

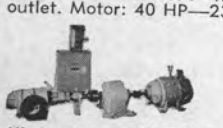
1175 GPM—11.1 lbs.—8" x 8". MOTOR: Reliance 10 HP—115 VDC—850—RPM—76 amps.

**36**

NEW WORTHINGTON VERTICAL SUBMERSIBLE BILGE PUMP

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

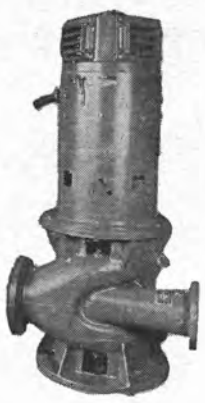
**37**



EXCELSIOR MOLASSES PUMP—SIZE 5½"

6" Suction and discharge—210 GPM—45 PSI—125 RPM. MOTOR: 10 HP—230 VDC—Frame 67—with gear.

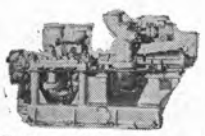
**38**



NEW—UNUSED BRONZE VERTICAL LST BALLAST PUMP

1500 GPM—56' head or 25 lbs. — 8" suction — 6" discharge. MOTOR: Century 30 HP—230 VDC—110 amps—1750 RPM — 40°T rise — stab. shunt—BB drip proof —controls available.

**39**



UNUSED SIZE 4 BUFFALO FEED PUMPS

Terry Turbine—BM—273 HP—550 RPM—exhaust 15 lbs—590 PSI—superheat 0°—425 GPM Buffalo Pump—discharge pressure 750 lbs—5" x 4"—built for USN DD destroyers.

## WINCHES AND WINDLASSES

**40**

VICTORY UNIT WINCHES

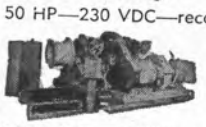
50 HP—230 VDC—U-1, U-2, U-4, U-5—reconditioned.

**41**

MODEL U-6 DOUBLE DRUM WINCHES WITH GYPSIES

50 HP—230 VDC—reconditioned.

**42**



HYDE NO. 7 WINDLASS

1¾" Chain—Wildcat centers 3'3"—Handles 3000 lb anchors. MOTOR: 8.7/35 HP—440/3/60—1800/450 RPM.

**43**

NEW—UNUSED LINK BELT WINDLASS

1⅝" and 7000 lb. anchors. 56" Centers—50 HP—230 VDC—spares.

**44**

IDEAL WINDLASS—UNUSED

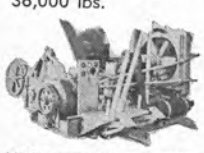
1-5/16" Chain—36" Centers—15 HP—115 VDC—1750 RPM—6000 lb. line pull.

**45**

UNUSED 70 HP McKIERNAN-TERRY WINDLASSES

2¾" Chain and two 10640 lb anchor & 30 fathoms chain @ 30 FPM. 70 HP—230 volts—shunt DC motors—233 amps—550 RPM—55°C rise. Wildcat centers 47½". Base 9'5" wide x 11' long. Weight 36,000 lbs.

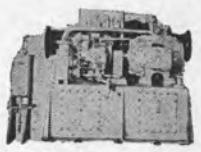
**46**



LCT-6 JAEGER GASOLINE DRIVEN WINCH

With torque converter & free declutchable drum, 31,000 lbs @ 6 FPM or 3000 lbs & 350 FPM. DRUM: 20"x23¾"x37½". GYPSY: 15"x13". Twin Disc torque converter—6 cyl. Hercules gas engine model WXLC-3. Total weight approx. 4500 lbs—serial 81843.

**47**



4 SINGLE DRUM ELECTRIC HYDRAULIC WINCHES

From Navy Research Ship Liberty AGTR-5. Like new. Mfg. by Lakeshore Engineering Co. Gypsy heads can be operated separately from drum. 7400 lbs @ 220 FPM; 624 ft. of ¾" rope in 5 layers. Total weight of winch, motor & pump 7221 lbs. OAW 84¼"; OAL 88"; OAH 58". With remote control stands.

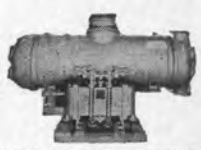
## MISCELLANEOUS

**48**

VICTORY AP2—WESTINGHOUSE MAIN PROPULSION GEAR

6000 SHP—Serial 4A—1620—Medina Victory.

**49**



UNUSED 1135 SQ. FT. C.H. WHEELER CONDENSER

20" Ex. inlet—⅝" Cu-Ni tubes—with or without air ejector.

**50**

1 PAIR OF 300 HP UNION DIESEL ENGINES

Port and starboard—model 06—1300 HP at 350 RPM—4 cycle—direct reversible—11 x 15—overhauled 1966—in good condition. Just in from Navy.

**51**

MODEL O-2-D M&T RECONDITIONED UNITS

Hydraulic starting steering, raising & lowering tailfin. Navy reconditioned 1965—fully checked out by us. Will demonstrate running. Wt. about 9500 lbs. PROPELLOR: 48"x24"—3 blade.

**52**

HYDE 30" DOCK CAPSTAN

10" x 10"—reversible—W.P. 125 lbs—2½" steam—3" exhaust.

**53**

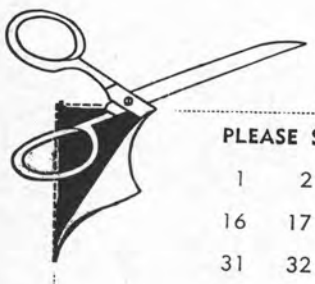
DOUBLE INPUT—SINGLE OUTPUT DIESEL REDUCTION GEARS

Farrell-Birmingham — 3200 SHP. Reduction gear: 1.81:1—handles two 1600 HP diesels @ 720 RPM. With hydraulic couplings & Fawick clutch. Port and starboard.

**54**

INGERSOLL-RAND MODEL 40 AIR COMPRESSOR

Two stage—135 CFM—7" x 6¼" x 5"—110 lbs—870 RPM—inner cooler. MOTOR: Allis-Chalmers 40 HP—230 VDC—145 amps—1750 RPM—Model EB 121.



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| 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | | | | | | |

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# T-2 TANKER MAIN & AUXILIARY EQUIPMENT

## *From 2 Vessels Reconditioned by U.S. Gov't*

## ALL MATERIAL IN FIRST CLASS CONDITION WITH A.B.S.

**MAIN PROPULSION ROTOR — G.E.**

Large Schenectady — serial 77418—reconditioned Bethlehem Steel 1970—all stages magnafluxed.

**2 COMPLETE G.E. TURBINES**

#61818 and #61834—large Lynn—all stages magnafluxed.

**WILL INTERCHANGE WITH ELLIOTT MAIN TURBINE**

- 2 COMPLETE SETS MAIN DIAPHRAGMS..
- 2 COMPLETE SETS LABYRINTH PACKING
- THRUST BEARINGS
- COMPLETE GOVERNOR ASSEMBLIES
- OPERATING CYLINDERS
- CONTROL VALVES
- SHAFT BEARINGS

**ALSO**

**THROTTLE VALVE ASSEMBLY**

**G.E. REVOLVING FIELDS**

Rewound 1968—main propulsion—by G.E. Seattle. Re-checked June 1971 by G.E. Service Shop—A.B.S.

**WESTINGHOUSE REVOLVING FIELD**

With A.B.S.—ex-Ohio Sun.

**MAIN G.E. STATOR**

With A.B.S. — reconditioned 1970.

**WESTINGHOUSE MAIN GENERATOR STATOR**

Reconditioned Westinghouse — #39519P915 — Thermoplastic winding.

**NEW—UNUSED G.E. MAIN GENERATOR COOLER**

Also Westinghouse—reconditioned to A.B.S.

**G.E. AUXILIARY TURBINE ROTOR**

For 525 KW G.E. Turbine DORV-325M—5645 RPM.

**COMPLETE T2 TANKER TURBO GENERATORS**

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 D.C.

**NEW STYLE AMPLIDYNE**

5LY148A—Type A.M.—Frame 605.

**75 KW—55 KW EXCITER ARMATURES**

Also stators & pedestal bearings—400 KW aux. generator revolving fields.

**T2 AUXILIARY GENERATOR S-162 REDUCTION GEARS—PINION & BULL GEAR—BEARINGS**

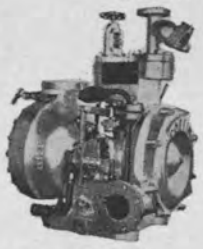
**AUXILIARY GENERATOR THROTTLE VALVE**

**WESTINGHOUSE MAIN CARGO PUMP MOTORS**

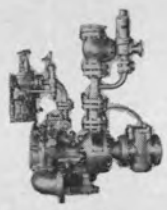
1 Unit—frame 874—125 HP—440/3/60—168 amps 590 RPM. 2 Units—frame 876C—125 HP—type CS—440/3/60—159 amps—585 RPM.

**G.E. MAIN CIRCULATING PUMP MOTORS—125 HP**

**COFFIN FEED PUMPS**



Type C-G 2-A



Type F

**WESTINGHOUSE MAIN PROPULSION TURBINE**

Profile (unshrouded)—serial 2-A-9361-21.

**COMPLETE G.E. THROTTLE VALVE**

With governor—for above turbine.

**2 WESTINGHOUSE AUX. 538 KW TURBO GENS**

Turbines—gears—400 KW generators—(110 KW—32.5 KW—5 KW excitation).

**WILL SELL ROTORS—GEARS—EXCITERS SEPARATELY.**

**ALSO AVAILABLE — EXCITERS**

(110 KW—28 KW—5 KW) or (110 KW—32.5 KW—5 KW)

**SWITCHGEAR FOR ABOVE**

also available.

**WEST. MAIN PROPULS'N MOTOR COOLER**

**T2 ANCHOR WINDLASSES**

1 American Hoist & Derrick—12x14 for 2 5/16" chain.
1 American Engineering Co.—12x14 for 2 5/16" chain.

**T2 WARPING WINCH**

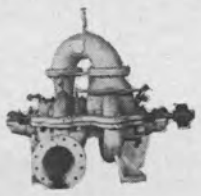
Poop—9x12—AH&D.

**T2 DECK WARPING & HOSE HANDLING WINCH**

8¼ x 10—Hunt Tool Co.

**MAIN CIRCULATING PUMPS**

Ingersoll-Rand—24 V.C.M.



**INGERSOLL-RAND CARGO PUMPS**

200 GPM—100 PSI—Model 6 GT—10" suction—8" discharge.

**BRONZE T2 TANKER STRIPPING PUMPS**

14x14x12—700 GPM @ 100 lbs. **ALSO EX-MISSION 14x14x12 WILSON-SNYDER IN STOCK.**



**T2 TANKER FIRE & BILGE PUMP**

Bronze — 10x7x10—vertical duplex. Steam pressure 150 lbs gauge—exhaust pressure 10 lbs gauge — discharge pressure 100 lbs gauge—300 GPM.

**MAIN INJECTION VALVES**

**WRITE FOR INFORMATION ABOUT THE FOLLOWING EQUIPMENT & ANYTHING YOU MAY NEED:**
T2 Tailshafts—Mission T2—SAE—2 Tailshafts—T2 Propellors—Mission Propellors—T2 Rudders — Mission Rudders — Large 14½" Rudder Stocks — Auxiliary Steering Rams — Butterworth Heaters—Butterworth Pumps—Bilge Pumps—Auxiliary Circulators—Auxiliary Condensate Pumps—Main Condensate Pumps.



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## Puerto Rico Shipping Group Names Cabassa

Hiram D. Cabassa

**Hiram D. Cabassa,** a well-known Puerto Rican industrialist and 1970 president of the Puerto Rico Manufacturers' Association, has been appointed chairman of the Puerto Rico Ocean Service Association (PROSA), it was announced in San Juan.

**R.D. Carter,** chairman of PROSA's executive committee, in introducing Mr. **Cabassa** to newsmen attending a press conference at the Caribe Hilton, said: "Mr. **Cabassa** is so well known in Puerto Rico he does not need an elaborate introduction. We, the ocean carriers, are delighted to have a man of his esteem take over the helm of PROSA. We look forward to his strong leadership with new ideas and are confident PROSA will thereby become a vital contributory force to benefit the entire community's economic progress."

PROSA line members in the $4 billion Puerto Rican trade include Sea-Land, Seatrain, Transamerican Trailer Transport, and Gulf-Puerto Rico Lines.

Commenting on his new association as chairman of PROSA, Mr. **Cabassa** said: "I want to make it absolutely clear at the outset that at all times my paramount objective will be to achieve established goals for all Puerto Rico."

Mr. **Cabassa** announced that he will be a full-time chairman and is already moving PROSA's headquarters from Washington, D.C., to the new Banco Economias' Building in Hato Rey. "PROSA will be Puerto Ricanized," he said, "and this is a major step in that direction."

Mr. **Cabassa** said PROSA could be a "tremendous force" in helping the commonwealth attain its economic goals, explaining: "In the U.S. I am sure we can help Fomento promote more industry to Puerto Rico by participating in its industrial seminars in key U.S. cities and in San Juan by counseling the commonwealth government on maritime matters. I also would like to work with the Puerto Rican colleges and universities to encourage more students to get into the transportation and foreign trade fields since shipping is of such vital importance to Puerto Rico."

The new PROSA chairman also stated as a goal, a public-speaking program to enunciate to the Puerto Rican people the importance of ocean transportation to the island commonwealth and at the same time to foster a strong spirit of cooperation between ocean carriers and island shippers.

"I want to get the message across to our citizens and to our Government officials that Puerto Rico and the ocean carriers are not natural enemies as sometimes depicted, but rather natural allies," Mr. **Cabassa** said.

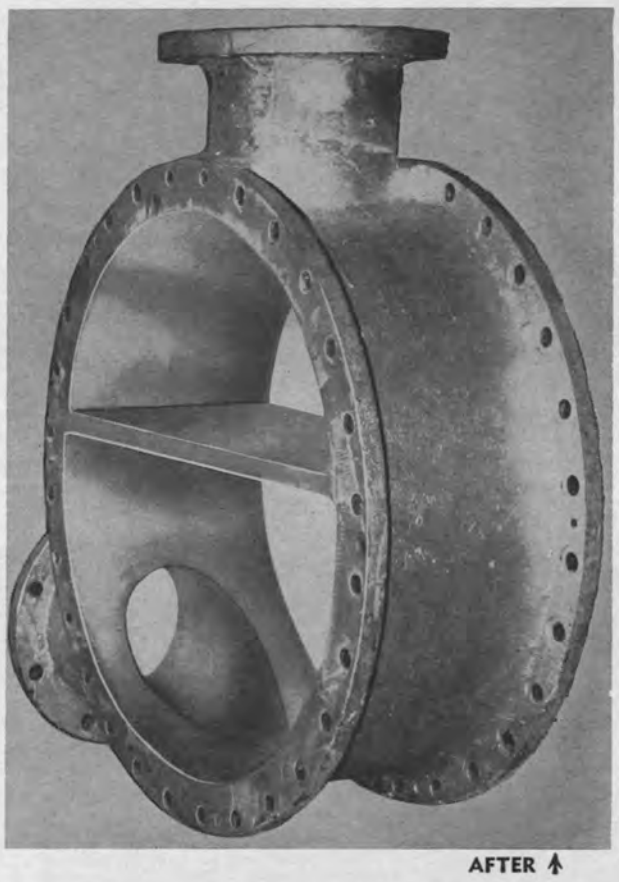
"We need each other. Puerto Rico needs the best ocean transportation available because of her distance from mainland raw materials, markets and foodstuffs, and the carriers obviously need Puerto Rico."

Mr. **Cabassa,** age 56, has been extremely active in his business career, particularly in the realm of civic and Government service. He was appointed president of the National Alliance of Businessmen of Puerto Rico by President **Nixon** in 1969, and recently Governor **Luis Ferre** appointed the new PROSA chairman to the Commonwealth Commission to study the impact of a maritime strike which threatens the island. He also serves as a member of numerous other commonwealth commissions.

Over the past decade, Puerto Rico's trade has virtually tripled from $1.5 billion to over $4 billion. Ocean carriers have kept pace with volume by adding more lift-on vessels and new type roll-on ships and as a result, the number of containers arriving in San Juan every year has increased from 12,000 to 180,000, while containership arrivals have increased 15 fold.

# Thousands of Repair Jobs have been completed quickly and economically with


BEFORE



AFTER

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## Strong-Back Materials

First proven under the most difficult conditions by the Navy, the Cordobond Strong-Back Method offers a fast and easy method of repair both aboard ship and ashore. Applied quickly by ship or maintenance personnel, Cordobond Strong-Back products are used extensively for repairing and lining:

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| **Water Boxes** | **Ventilators** |
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| **Pipes** | **Sea Valves and Chests** |
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| **Cooler Heads** | **Shell Plating Etc.** |
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The Cordobond Strong-Back Components, when used according to directions, will repair anything from a pin hole to a complete break with a patch of great strength that clings tenaciously and lastingly.

## MARINE REPAIR KITS

**STANDARD KIT For Ocean Going Vessels JUNIOR KIT For Harbor Craft**

**CORDOBOND REPAIR KITS CONTAIN ALL THE COMPONENTS AND ACCESSORIES FOR MAKING EMERGENCY REPAIRS AT SEA**

Packed in sturdy Navy type refillable metal containers.

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Over 5000 ocean going vessels carry our standard repair kits. Cordobond is not affected by water, oil, gasoline, etc. It does not corrode. It eliminates costly gas freeing. Cordobond is self curing, no applied heat necessary.

**CORDOBOND STRONG-BACK PRODUCTS**

**Standard Resin Leveling Compound Strong-Back Putty Strong-Back Sealer Steel Putty**

# Hubeva Marine Plastics, Inc.

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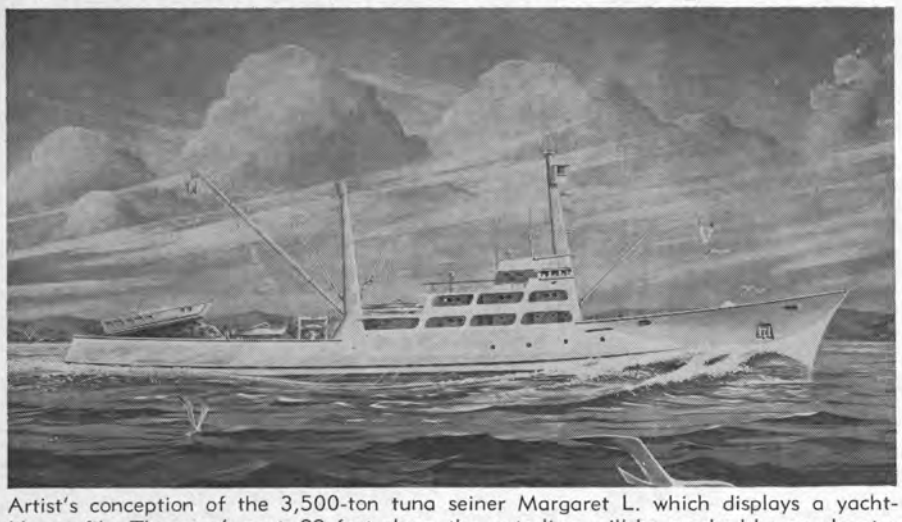
Van Lessen & Punt GMBH

## Rados-Designed 2,000-Ton Capacity Seiner To Be Constructed For Tuna Fleet By Peterson



Artist's conception of the 3,500-ton tuna seiner Margaret L. which displays a yacht-like profile. The crow's nest, 92 feet above the waterline, will be reached by an elevator installed in the hollow mainmast rising from the bridge structure.

The world's largest super seiner, the Margaret L., displacing 3,500 tons and with a load capacity of 2,000 tons, has been designed by Rados Western Corporation of San Pedro, Calif., and will be built for a California group by Peterson Builders, Inc., of Sturgeon Bay, Wis.

The yacht-like vessel, capable of fishing for tuna anywhere in the world, will have a cruising range of about 4,000 miles at a fully-loaded speed of 17 knots. Of all-steel construction, the hull length is 262 feet with a waterline of 240 feet at design draft of nearly 19 feet.

To help assure continuation of fishing operations despite difficult weather conditions at sea, a special stabilizer system designed by Flume Stabilization Systems, Inc., will be installed. The system was first incorporated in previous Rados Western vessel designs.

**Robert Rados,** president of Rados Western, a wholly owned subsidiary of Western Gear Corporation, Lynwood, Calif., said main propulsion machinery of the Margaret L. includes two Colt Industries Fairbanks Morse diesel engines, each developing 3,000 bhp at 750 rpm, coupled to two 125-inch diameter propellers through Western Gear 360 PCMR seamaster reverse reduction gear assemblies.

Two Caterpillar 400-kw main generator sets and one Caterpillar 250-kw standby set will provide electrical power for the extensive array of shipboard equipment. Messing, berthing and galley accommodations, planned for long sea cruises, are provided for a complement of 18 crewmen.

The crow's nest, 92 feet above the waterline, will be reached by an elevator installed in the hollow mainmast rising from the bridge structure.

Extensive refrigeration equipment will be provided by the Vilter Manufacturing Corporation; the huge seine winch and other deck machinery will be provided by the Marine Construction Company; and the radar installation will be Sperry Rand Corporation equipment.

The Margaret L., home porting in Puerto Rico, will stream a one-mile-long purse seine to fill its 20 brine wells with a capacity of 86,000 cubic feet. At the recently quoted price of $420 a ton for yellow-fin tuna, a full load catch would be valued at about $840,000.

The new seiner, owned by Andrew J. Lococo and Associates, of Hawthorne, Calif., and bearing the name of Mr. **Lococo's** wife, is engineered to meet demands for fast unloading and turnaround schedules by equipment which permits simultaneous discharge of frozen fish from port and starboard wells to the upper deck, both forward and aft, using a heavy brine solution with increased "flow and pressure" systems. From the deck, the catch is routed overboard on chutes to cannery shore facilities.

Expected to be completed in October 1972, the Margaret L. will join sister vessels of the far-roving San Pedro tuna fleet, many of which now fish along the West African coast and off-load at canneries in Puerto Rico. Big seiners of the fleet which have been designed and engineered by Rados Western and built by the San Diego Marine Construction Company include the Quo Vadis, Jacquelina A., Sea Quest, City of Lisbon, Antonia C., Mary S., Francis Ann, and Adventurous.

## Pickands, Mather Signs First Construction Pact In New MarAd Program

The Maritime Administration has disclosed that Pickands, Mather & Co. has become the first operator to sign an interim capital construction fund agreement with MarAd under the new program to rebuild the merchant marine.

The agreement, which will ultimately be replaced by a permanent one once the Treasury completes its regulations, will enable the Great Lakes bulk carrier operator to set aside funds tax free for new ship construction.

That privilege has just been opened to nonsubsidized liner operators by the administration's new long-range maritime promotional program.

## Limongelli To Head Duluth Port Authority's New Office In N.Y.C.

The Seaway Port Authority of Duluth, Minn., has announced the opening of an Eastern trade office in New York City. Port director **C. Thomas Burke** also announced the appointment of **Eugene B. Limongelli** of New York as the Port Authority's Eastern trade manager. Mr. **Burke** said Mr. **Limongelli's** chief responsibilities will involve cargo solicitation for the port and close contact with port and industrial development prospects.

A native of New York, Mr. **Limongelli** has been active in world trade for the past 15 years. He has been engaged in operations and sales for various major steamship companies, including Dart Containerline, U.S. Navigation, and Funch Edye & Co. He is presently vice president of sales for East West Shipping Agencies. Mr. **Limongelli** holds a degree from the School of World Trade, New York, and is a member of the New York Traffic Club, the Produce Exchange Club, and the National Defense Transportation Association.

The Eastern trade office will be headquartered at 17 Battery Place, New York, N.Y.



## GE Names Plumley To Head Gas Turbine Strategic Planning

**Donald R. Plumley**

**Donald R. Plumley** has been appointed manager of the strategic planning operation of the General Electric Company's Gas Turbine Business Operations, **Whitman Ridgway,** deputy division general manager, has announced. The appointment completes Mr. **Ridgway's** staff for the operations.

Mr. **Plumley** will be responsible for the successful development of strategic plans and programs for the operations. This will include the establishment of objectives, goals, strategies, policies, and contingent plans for the business. He will also be responsible for market research and analysis, product planning, and facilities planning for GTBO.

A native of Olean, N.Y., Mr. **Plumley** joined GE on the engineering test program in 1952, after graduating from Clarkson College with a B.S. degree in mechanical engineering. Since that time, he has held a variety of engineering and marketing positions for the then gas turbine department in Schenectady and in 1961, became communications satellite sales engineer for the General Electric's Spacecraft Department in Valley Forge, Pa. Mr. **Plumley** returned to Schenectady in 1964, when he was named manager of product planning and market development for the gas turbine department.

The Gas Turbine Business Operations builds gas turbine power plants at facilities in Schenectady, N.Y., and in Greenville, S.C.

## Furness, Withy & Co. Acquires Interest In Interocean Steamship

**Erik Krag,** founder and chairman of Interocean Steamship Corporation, San Francisco, Calif., and **Philip K. Gorick,** chairman of Furness, Withy & Co., Ltd., U.S.A., have announced the acquisition of a minority shareholding in Interocean Steamship Corporation by Furness, Withy & Co., Ltd., London.

The company will continue to operate from its present office at 310 Sansome Street, San Francisco, with the same management and staff headed by **Jorgen With-Seidelin,** president, but the name henceforth will be Furness Interocean Corporation.

# All it takes is one piston to prove the extreme standardization of any Alco engine.

One piston, above, could be the complete spare piston inventory for our whole marine engine line. The reason: every Alco engine in current production is built with the same 9x10.5 bore and stroke.

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Despite this extreme standardization, you have a wide range of sizes to choose. From a Straight-6 with 675 bhp @ 720 rpm to a V-18 with 3500 bhp @ 1000 rpm.

Low in weight, high in power, the Alco marine engine is more nearly the universal marine engine than any other.

Our representatives would like to give you complete information on our marine diesel line. Or write Alco Engines Division, White Industrial Power, Inc., Auburn, New York 13021.

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Division of White Motor Corporation

## ARCTEC Receives Contract For Icebreaking Model Tests Of Great Lakes Bulk Carriers

The Maritime Administration, U.S. Department of Commerce, has awarded a research contract to ARCTEC, Incorporated of Columbia, Md., for the physical modeling of icebreaking by Great Lakes bulk carriers. The program is directed toward the development of advanced concepts for facilitating the movement of large bulk carriers through the more severe "bottleneck" portions of the Great Lakes due to ice and snow barrier conditions. These bottleneck areas include White Fish Bay, Saint Mary's River, Detroit River/Lake St. Clair, and Buffalo Harbor.

The proposed program will be conducted in two phases. Phase I will be composed of the development of realistic models of the actual ice conditions prevailing in the bottleneck areas, and the examination of the behavior of a model of an existing bulk carrier in these ice conditions. Phase II will consist of duplicating these ice conditions to determine the effectiveness of various devices to improve the performance of bulk carriers.

The first phase will involve the development of realistic models of "mush ice," ice fields under pressure and clogged channels. Subsequently, unimproved models of bulk carriers will be towed through these fields. Variations in model length, velocity, depth of snow cover, depth of mush ice, hull surface roughness, ratio of ship draft, plus ice depth to water depth, broken channel width, effect of wind-induced side forces on resistance, refreezing of the channel, channel width, and ship draft will all be considered. These tests will provide the characterization of the performance of bulk carriers in these media. Phase I of the program is scheduled for completion by next month.

Phase II will consist of separate studies of the effectiveness of various devices in improving the performance of the ore carrier in these media. Advanced concepts to be studied will include, but not be restricted to, bow propulsion units, water-jet systems, and air-bubbling systems. This phase of the study is scheduled for completion by April 1972.

## Nippon Kokan Launches 150,000-Dwt OBO Carrier


The 150,000-dwt combination OBO Romantic above dwarfs two tugs during launching at Tsu Shipyard of Nippon Kokan. The vessel is powered by a Mitsubishi turbine main engine and will have service speed of 16.25 knots.

One of the largest ore/bulk/oil (OBO) carriers on record, the 150,000-dwt Romantic, has been launched by the Tsu Yard of Nippon Kokan (NKK), Japan's only integrated shipbuilder-steelmaker-fabricator. **Hiroo Ikematsu,** NKK's New York shipbuilding department manager, said the carrier is being built for Moonstone Shipping Co., S.A. of Liberia and is scheduled for delivery in December 1971.

NKK's Tsu Yard launched a sister ship for Moonflower Shipping, also of Liberia, in June, and the vessel will be delivered this month. Triple cargo versatility of these ships will enable the owner to substantially reduce ballast voyages.

The Romantic features several design and equipment advances for improving operational efficiency. These include slight slant of inner hull bottom toward the center for facilitating loading crude oil, and remote control systems for hatch cleaning, opening and closing. Equipment for taking on ballast will be able to pump water into both the topside and bottom tanks. Conventionally, separate pumping systems are utilized for topside and bottom tanks.

The triple purpose capability and resulting increase in operational economy and efficiency of OBO vessels are making this type ship very popular, Mr. **Ikematsu** said.

The world's first OBO carrier, San Juan Trader, 64,000 dwt, was built at NKK's Tsurumi Shipyard in April 1966 and delivered to San Juan Carriers, Ltd. of Liberia, a division of Marcona Corp., San Francisco. Since that time, NKK has built five vessels of this type.

Main particulars of the new OBO Romantic are: length overall, 997.38 feet; breadth molded, 150.92 feet, and depth molded, 80.36 feet.

The vessel is powered by a Mitsubishi turbine with an output of 27,000 shp at 85 rpm delivering a service speed of 16.25 knots.

## Overseas Enterprises, Inc. Opens New Orleans Office

**Magnus Olsen,** president of Overseas Enterprises, Inc., has announced the opening of a new office in New Orleans, La. **Peder Toft** has been appointed managing director, Gulf Area, and will head the new office which is located in the International Trade Mart.

Overseas Enterprises, Inc. also act as agents for The Portuguese Line-CNCA, Great Lakes Transcaribbean Line, DS-Tankers, Deutsche Africa Line, India Steamship Co., D.G. "Neptun," and Sea Containers, which is an independent container leasing firm specializing in chassis, containers, refrigerated containers, tanks, feeder containerships, and container cranes.

## Tonnage Classed Continues At Record-Level For ABS

The number of ships being classed by the American Bureau of Shipping has remained at the record levels set last year, it was announced at the bureau's semiannual meeting of the board of managers, recently held in New York.

**Robert T. Young,** chairman and president, said that for the first six months of this year, the bureau classed 634 vessels of 6,110,619 deadweight tons, a number slightly higher than the record figure for the first half of 1970. "It would appear at this stage," reported Mr. **Young,** "that the number and tonnage of vessels classed in 1971 will be very close to the record-setting figures of the previous year."

Extensive research programs were announced by the ABS president. The most comprehensive project involves the new Sea-Land SL-7 high-speed container vessels building in Holland. Full-scale measurements are to be made of this vessel at sea. Also, a 17-foot structural model of the vessel is to be tested and a comprehensive computer analyses of both the ship's structure and model's structure are to be made. The findings of these three investigations of the latest containerships will then be correlated.

Another ABS research development is directed to the low-temperature gas carriers, in particular the latest concepts of containment structures for transporting liquefied natural gas at sea. Initially, this research will involve studies of ship motions, including model studies.

Mr. **Young** announced that other areas of investigation by this international classification society are measurements of the loads encountered by forward ends of large ocean-going tankers and bulk carriers, and studies of stress measurements on ship propellers.

## Ward Appointed VP-Finance— Melia Named Terminal Manager For Atlantic Container Line

John Joseph Ward

James P. Melia

**O.I.M. Porton,** president of Atlantic Container Line, Ltd., has announced the appointment of **John Joseph Ward** to the position of vice president-finance. His responsibilities will include accounting, data processing and personnel.

Mr. **Ward** was formerly treasurer of Horn & Hardart Baking Co. and before that, was assistant tax manager of Scott Paper Co., both located in Philadelphia, Pa. Mr. **Ward** holds a B.S. degree in accounting from La Salle College of Philadelphia.

Also announced was the appointment of **James P. Melia** as manager of the Atlantic Container Line's Elizabeth (N.J.) Terminal. Mr. **Melia's** appointment was announced by **A.L. Aberson,** vice president-traffic and operations.

Mr. **Melia** was formerly terminal superintendent at the Elizabeth Terminal and before that, terminal superintendent for ACL's Channel Service. Prior to joining ACL, Mr. **Melia** was with Grace Line for eight years, rising to the position of container yard superintendent.

## Frank Jeffrey Forms Maritime Electrical Firm In St. Louis

**Frank Jeffrey,** who was formerly with Maritime Overseas Corporation as electrical supervisor and more recently with George G. Sharp & Company, has formed Frank Jeffrey and Associates.

The principal services being offered are maintenance guidance systems for electrical and automated equipment on shipboard. The system will allow a central office to direct shipboard electrical and control system maintenance on a monthly basis, and to analyze the feedback data so that needless failure of equipment can be prevented, thus reducing maintenance cost, lost time and often demurrage. It is felt that as shipboard electrical equipment is becoming more and more complex, there is a need for such a system and also for specialized electrical consulting by people who are familiar with modern electrical practice and who have a variety of experience at their disposal, both domestic and foreign.

Other services being offered are new building inspection, repair supervision, plan approval, equipment inspection at plant, contract services and sea trial representation.

Mr. **Jeffrey** is a member of The Society of Naval Architects and Marine Engineers, Institute of Electrical and Electronics Engineers, Instrument Society of America, and Associate Institute of Marine Engineers (British).

**Frank Jeffrey**

The offices are located in St. Louis, Mo., to allow prompt and economical consulting to East, West, and Gulf Coast ports and also the Great Rivers and Lakes regions.

Further information on the services offered can be obtained from Frank Jeffrey & Associates, 520 Queen Ann, Hazelwood, St. Louis, Mo. 63042.

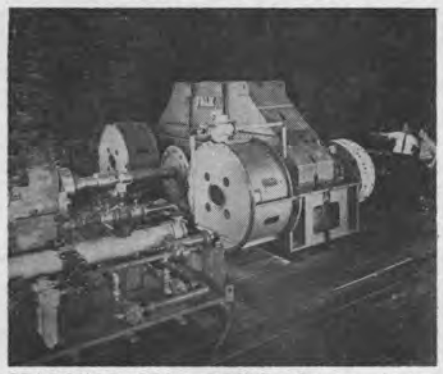
## Navy Award To GE To Conduct Study Of Deep Dive Equipment

General Electric has received a $102,000 contract from the United States Navy to conduct a four-month "contract definition study" of a new Aquanaut Equipment System (AES).

The study will be conducted by the Ocean Systems Programs Department of GE's Re-entry and Environmental Systems Division in Philadelphia, Pa., for the Naval Ship Research and Development Laboratory, Panama City, Fla.

The study is a preliminary step to design and development programs. AES is part of a continuing program aimed at developing saturation diving equipment and related systems to improve the Navy's ability to live and work on the ocean floor at great depths for prolonged periods of time.

Development of the integrated deep-diver system will involve breathing apparatus, heater, environmental protection (helmet and suit), communications, topside monitors and propulsion aids.



**SEAGOING GEAR DRIVE:** Shown during tests at The Falk Corporation, subsidiary of Sundstrand Corp., Milwaukee, Wis., this gear drive is one of a series designed to propel the most powerful diesel-propelled ships yet built in the U.S. Clutch-connected to two reversible diesel engines, this gear unit will transmit 15,000 horsepower to the ship's 21-foot, four-blade propeller, driving the ship to a maximum speed of 16.5 knots in all but the most severe weather.

## Marine Moisture Guarantees Equipment For Five-Year Period

Marine Moisture Control Co., Inc., 449 Sheridan Boulevard, Inwood, N.Y. 11696, has announced that they will guarantee their equipment against all defects in material and workmanship for a five-year period, on a prorated basis. Marine Moisture Control designers and engineers stated that this new guarantee is part of MMC's continuing program to expand its services to the maritime industry.

The equipment covered by this guarantee includes: deck covers (including Centalock and C-L Covers), gear case dehydrators, hydraulic valve systems, lube oil clarifier-coalescers, ultrasonic oil-water interface alarm systems, ultrasonic overflow and bilge alarm systems, draft indicators and ullaging systems. This is the first time in the marine equipment field that a manufacturer of marine products has announced such a long-term all inclusive guarantee. The only exceptions to this guarantee are "O" rings and non-cleanable filters and liners. All guaranteed parts must be returned to MMC for inspection and prorata credits will be issued for all defective parts.

## RAdm. E.J. O'Donnell Maritime College Pres. Will Retire Next Year

Announcement has been made by the college council of the State University of New York Maritime College of the retirement of Rear Adm. **Edward J. O'Donnell,** USN (ret.), as president, at the end of this academic year, at which time he will have reached the statutory time for retirement.

Admiral **O'Donnell** came to the Fort Schuyler, Bronx campus at the beginning of the 1967-68 academic year, having retired from the Navy following two and one-half years of service as Superintendent of the service's Postgraduate School at Monterey, Calif.

A successor to Admiral **O'Donnell** will be recommended to the State University board of trustees by the Maritime College council, whose acting chairman is **William E. Ryan.** The search for his successor will be conducted by a committee of the council in consultation with a faculty committee, with coordination being provided by the Office of the State University Provost.

Admiral **O'Donnell's** administration of the Maritime College has been marked by innovation and growth in the institution's physical plant and its curriculum offerings. The general improvement of the college's 60-acre physical plant included the construction of new buildings—a two-story student activities building, a seven-story dormitory complex and a three-story extension of the dining hall. Educationally, the college faculty broadened its curriculum, adding such concentrations as electrical engineering, mathematics, and naval architecture, as well as a graduate program. Such innovations are designed to preserve the present objectives of the college, while also extending them beyond a seagoing career for every graduate.

Founded in 1874 by the City of New York as the New York Nautical School, the Maritime College is the oldest school of its kind in the United States. As a unit of the State University since 1948, it is also the most enterprising and diversified of its kind. The student body generally approximates 725 young men, but is expected to go into higher figures when the new dormitory complex is completed. The college offers such specializations as marine engineering, naval architecture, electrical engineering, mathematics, marine nuclear science, marine transportation science, and meteorology and oceanography. A fully accredited institution, it confers bachelor of engineering or bachelor of science degrees for successful completion of undergraduate work in the various fields. A graduate of the Maritime College also receives a Federal license as a third mate or third assistant engineer in the American merchant marine and is ordinarily commissioned as an ensign in the Naval Reserve (inactive).

## Rice Barton Corp. Appoints Osborne

Ronald S. Osborne

**Ronald S. Osborne** has joined Rice Barton Corporation, Worcester, Mass., a leading design and manufacturing organization serving the marine, paper and textile industries, as assistant to the president, it was announced by **Winship B. Moody Sr.**, president and chief executive officer. In his new position as assistant to the president, Mr. **Osborne** will be responsible for the purchase and sales programs for used and rebuilt equipment being currently organized under RB International, a wholly owned subsidiary of Rice Barton Corporation.

Mr. **Osborne** comes to Rice Barton from the Farrel Company, where he served as sales representative to paper mills in the mid-Atlantic states. Prior to this, he was associated with other paper machinery and equipment manufacturers in various sales capacities. Mr. **Osborne** is a graduate of Syracuse University.

## Contract To AAI For Automation Of Cargo And Ballast Control

AAI Corporation, Baltimore, Md., will design and supply the hydraulics control system for the Centralized Cargo Control and Ballast Systems of two 70,000-deadweight-ton tankers, in accordance with a contract received from Bethlehem Steel—Sparrows Point.

The equipment to be supplied by AAI includes all hardware for hydraulic operation of 104 cargo valves, central control console, valve position indicators and liquid level gaging system.



## AESA-Built 80,000-DWT Soledad Maria Successfully Completes Official Trials

The Soledad Maria, an 80,000-dwt bulk carrier built by Astilleros Espanoles S.A., is shown in the Bay of Cadiz during the official sea trials. The ship was designed with the maximum dimensions for transiting the Panama Canal.

The Sestao (Spain) shipyard of Astilleros Espanoles S.A. (AESA) recently announced the successful completion of official trials of the 80,000-dwt bulk carrier Soledad Maria. The ship, built with the maximum dimensions allowable for transit of the Panama Canal, was ordered by Naviera Letasa S.A. of Bilbao, Spain.

The Soledad Maria has an overall length of 833 feet 4½ inches, a length between perpendiculars of 797 feet 3½ inches, a molded breadth of 105 feet 5½ inches, a molded depth of 64 feet 7½ inches, a maximum draft of 47 feet 3 inches, and a grain capacity of 3,546,890 cubic feet in its nine holds. The full-load displacement of the ship is 96,400 tons. It has a gross tonnage of 42,500 tons.

The propulsion machinery consists of one AESA-Burmeister & Wain, Model 7K84EF, 17,500-bhp (at 114 rpm) diesel engine, designed to burn heavy fuels. The engine was built at AESA's Bilbao plant. The propeller was made by NAVALIPS of Cadiz, another company which is a partner in AESA. This powerplant gave the ship a trial speed of 16.5 knots.

Electric power is provided by three N.S.W./Stork, 920-hp diesel engines driving Alconza, 750-kva, a.c. generators. These diesel engines were built at the San Carlos (Cadiz) plant of AESA.

A special feature of the ship is the tunnel under the cargo holds which forms part of the double bottom. All the piping and valves for the ballast system, bilge system and fuel system are located in this tunnel. There is ample space and good lighting in the tunnel so that the crew can service these systems. There is also an elevator from the engine room to the bridge which makes six stops.

The bulk carrier has the capability of handling its own cargo with two electro-hydraulic bridge cranes of 25-tons capacity each. These cranes travel on rails located on either side of the hatches and are designed to work with electro-hydraulic buckets. The cranes also are used to handle the one-piece, 3,800-square-foot pontoon hatch covers, each weighing 35 tons. The cranes can stack the covers on top of each other.

The Soledad Maria's ballast system, besides being connected to the double-bottom and wing tanks, is connected to the No. 6 cargo hold which has a capacity of 554,600 cubic feet. The system includes three 6,600-gpm ballast pumps, driven by 65-hp electric motors. The ballast system is centrally controlled.

The deck machinery consists of two combination anchor windlasses and constant-tension winches and six 15-ton constant-tension winches located one forward, two on the main deck amidships and three aft. The steering gear is the electro-hydraulic type with two electric-driven pumps.

The quarters and other accommodations are air conditioned, using two separate units.

Astilleros Espanoles S.A. is justly proud of the Soledad Maria as it represents one more in a long line of fine ships built by the firm.

**INSLEY DREDGE TENDER:** N.E. Insley, Inc., Crisfield, Md., recently delivered a new 35-foot dredge tender powered by a CAT D-330TA with a Twin Disc 3:1 hydraulic gear. The vessel, shown above, was built and delivered to Lance J. Eller, Inc. of Tasley, Va., for use with the 14-inch portable dredge. Designed for use for both pushing and towing, the vessel has full headroom in her engine room, as well as a seat which converts to a berth during long tows. The vessel swings a 34-inch by 40-inch four-blade wheel and draws approximately three feet when fully loaded. The hull design has proved to be very maneuverable and easily handled under all conditions. **N. Edward Insley,** president of N. E. Insley, Inc., also reports that a 40-foot tender for undisclosed interests is nearing completion and that these vessels will be offered as stock boats in the future.

## Ben Nutter Elected President Of ICHCA

**Ben E. Nutter,** executive director of the Port of Oakland, has been elected president of the U.S. national committee of the International Cargo Handling Coordination Association.

Mr. **Nutter,** who is responsible for the overall operations of the port's vast marine terminal and container facilities, Oakland International Airport, a 300-acre industrial park and additional industrial and commercial properties, holds a number of positions of leadership in his professional field.

Other officers elected by ICHCA, in addition to Mr. **Nutter,** were: executive vice president, **Eric Rath,** president of the Rath Co., LaJolla, Calif.; treasurer, **R.F. Matthes,** senior assistant vice president, Stolt-Nielsen Chartering, Inc., Greenwich, Conn.; secretary, **Herman D. Tabak,** Transmodal Consultants, New York; regional vice presidents—**A. Lyle King,** director, Marine Terminals, Port of New York Authority; **Abraham A. Diamond,** Singer and Lippman, Chicago, and **Edward S. Reed,** executive port director and general manager, Port of New Orleans.

New directors of the organization include **H.L. Brockel,** formerly director, Port of Milwaukee; **R.J. Pfeiffer,** senior vice president, operations, Matson Navigation Company; **A.T. de Smedt,** president, Prudential-Grace Lines; and **R.P. Holubowicz,** executive vice president, International MacGregor, Ltd.

The International Cargo Handling Coordination Association (ICHCA) is a technical organization devoted to the improvement of cargo handling techniques by coordinating and promoting technical studies and worldwide exchange of information on all phases of cargo handling. The group sponsors symposia and technical meetings, distributes periodic literature, and publishes a monthly journal.

A two-day technical conference has been scheduled for April 20-21, 1972, at Oakland, Calif.

ICHCA, which was founded in 1952, has 1,800 members in 70 countries.

## Hellenic Shipyards And Grandi Motori Plan Diesel Engine Plant

An agreement in principle was signed by Hellenic Shipyards of Scaramanga, Greece, and Grandi Motori Trieste, Italy, for the establishment at Scaramanga of a diesel engine plant and an iron foundry.

The diesel engines (for marine and land applications) to be produced at Scaramanga will be of original Fiat design, now Grandi Motori Trieste. Initial production of the diesel engines will be 200,000 horsepower per year and that of the foundry, which will comply with the requirements of the diesel engines plant and other customers, will be 5,000 tons.

The technological processes and the machine tools of the diesel engine plant will be the same as those of Grandi Motori Trieste.

## Burmeister & Wain Reorganized Yard Awarded Bulk Carrier

Burmeister & Wain's Shipyard, Copenhagen, recently concluded the first contract since its reorganization wherein the yard became independent of the engine works. The shipyard is operating under the new name of Aktieselskabet, Burmeister & Wain's Skibsbyggeri.

The contract is for a 51,000-ton bulk carrier to be delivered to the British shipowners, Anchor Line Ltd., Glasgow, (The Walter Runciman Group). This ship will be the 14th in this series to be built by the shipyard.

According to Burmeister & Wain, the economic position of the shipyard has been strengthened by an increase in the productivity, and much effort is being expended to further increase output. The capital which derived from the sale of the shares in the motor factory has, besides solving the liquidity problem of the company, also contributed to the improvement of the results.

With this new contract, the shipyard will be occupied until the beginning of 1974 and is still in a favorable position regarding time and delivery. Bulk carriers of the above mentioned type and of the Panamax type may be delivered as early as during the first half of 1974, and extensive efforts are being carried out to procure additional contracts.

This is the third contract Burmeister & Wain's Shipyard has received from British owners.

## Port Of Philadelphia Maritime Society Elects Anderson President

**Gustave G.W. Anderson,** president of General Marine Refrigeration Corp., heads the 500-member Port of Philadelphia Maritime Society, following the recent annual reorganization meeting at the Downtown Club in Philadelphia.

Mr. **Anderson** succeeds **Frazier Reichner,** vice president of Johnson & Higgins, insurance, as president of the organization. Attorney **Francis A. Scanlan,** partner in the law firm of Kelly, Deasey and Scanlan, was named vice president.

Reelected for additional terms were **Harry J. Fisher,** secretary, and **William A. Harrison,** treasurer.

Four members elected to the board of governors were **Henry Corry,** district manager of U.S. Lines; **Edward J. Desher,** Philadelphia manager of Moore-McCormack Lines; **Charles Lynch,** chief of marine operations for Atlantic Richfield, and **Samuel H. Schellenger,** member of the Pilots Association of the Bay and River Delaware.

## BJ Marine Products Dock Fenders Feature Controlled Buckling

A new line of dock fenders featuring "controlled" buckling action to provide a heavy-duty protective cushion has been announced by BJ Marine Products, Los Angeles, Calif., according to **John J. McGrath,** general manager of this Borg-Warner subsidiary.

Designed for use with movable pilings, the new fenders absorb energy of fully-laden ships or barges by buckling under load instead of compressing. The result is a fender with maximum energy absorbing characteristics and low reaction to loads applied.

Constructed of Neolastic™, a special rubber compound, the new fenders offer high resiliency and superior resistance to wear and abrasion. They also feature a unique end-plate design (patent applied for), which provides control of the amount and direction of buckling.

This exclusive end-plate design allows both a chemical and mechanical bond to the rubber. Tests deflecting the fenders far beyond normal service conditions (as much as 70 percent deflection) have failed to rupture the bond between the rubber and metal plates.

For more information on BJ buckling dock fenders, contact BJ Marine Products, P.O. Box 2709 Terminal Annex, Los Angeles, Calif. 90051, or Box 888, Keokuk, Iowa.

## Port Of Long Beach Offers Harbor Handbook

A new publication, "Harbor Handbook . . . A Digest of Facilities and Services," has just been produced by the Port of Long Beach, Calif., and is available to members of the maritime industry upon request.

The 40-page handbook contains maps, photographs and a description of all the physical facilities available to shippers. Also described are water depths—at up to 62 feet, the deepest in the Pacific—as well as exact dimensions of the 68 berths, transit sheds, warehouses and specialized terminals within the 8.6-square-mile Long Beach Harbor district.

A special section lists ships services, such as bunkering, warehousing, consolidating, stevedoring, cranes, repairs, towage, pilotage and anchorage. A listing of the 45 steamship lines serving Long Beach on a regularly scheduled basis and current traffic data concludes the digest.

Copies of the Harbor Handbook may be obtained from the Trade Development Division, Port of Long Beach, P.O. Box 570, Long Beach, Calif. 90801.

## Mobile Pulley & Machine Works Names Hairston VP

**Albert Savage Jr.,** president of Mobile Pulley and Machine Works, Mobile, Ala., has announced the appointment of **Hannon Hairston** to the position of vice president. Mr. **Hairston,** formerly chief engineer for the company, will coordinate sales and engineering activities. **Ronald Rose,** formerly assistant chief engineer, will assume the position of chief engineer.

Mobile Pulley and Machine Works, a Division of Lehigh Valley Industries, Inc., is a major international supplier of dredging equipment and high-grade iron and steel-machined castings.

## F.W. O'Green To Head Litton's Defense And Marine Product Groups

**Fred W. O'Green,** executive vice president of Litton Industries, has been named to head the newly combined $700 million a year Defense and Marine Product groups, according to an announcement by **Roy L. Ash,** president of Litton.

The announcement said that in addition to his responsibilities for the company's Defense and Electronic Components groups, Mr. **O'Green** will become the group executive responsible for all of Litton's marine activities, which presently include U.S. Navy contracts with a potential value of more than three billion dollars. Litton's Marine group activities had been the responsibility of **Harry J. Gray,** who has resigned to become president of United Aircraft Corporation.

The newly combined Defense and Marine group includes 15 divisions, with 30 manufacturing plants employing 29,000 people in 17 countries. Under Mr. **O'Green,** the Defense and Marine group will provide a coordinated and concentrated focus of company efforts in the fields of navigation and control systems, communications and electronic data systems, and marine engineering and production.

Mr. **O'Green** joined Litton in 1962 as general manager of Guidance and Control Systems Division. He became president of that division in 1964 and a year later was elected a corporate vice president. In 1966, he assumed responsibility for Litton's defense and space systems activities and was elected executive vice president the following year and elected to the board of directors in 1968. In that year, Mr. **O'Green** assumed added responsibility for electronic components.

Litton Industries, headquartered in Beverly Hills, Calif., is a major multinational corporation specializing in products, systems and services for business, defense, marine, industrial and professional markets.

## $8-Million Contract To Allis-Chalmers

The Naval Nuclear Components Division of the Allis-Chalmers Corp., York, Pa., reported that it has been awarded a contract in excess of $8 million by the Westinghouse Electric Corp., Pittsburgh, Pa.

The contract covers fabrication of nuclear components. Life of the contract will cover a period of five years.

## San Diego SNAME Honors Past Chairmen —Hears Paper On Gas Turbine Engine Systems


Pictured during the San Diego Section meeting, from left to right: **G.A. Uberti,** vice-chairman of the San Diego Section; **D.R. Rodger,** secretary-treasurer; **D.A. O'Neil,** speaker; **T.S. Hand Jr.,** Section chairman; four past chairmen—**C.S. Sinclair, J. Angles, G.N. Carpenter** and **P.G. Trapani.**

The San Diego Section of The Society of Naval Architects and Marine Engineers held the first regular monthly meeting of the 1971-72 season at the Kona Kai Inn on Shelter Island, September 15, 1971.

The past chairmen, **Pete Trapani, G. Carpenter, J. Angles** and **C. Sinclair,** who have guided the San Diego Section of SNAME through five successful years, were honored by **T.S. Hand Jr.,** the present Section chairman.

Following dinner, a paper entitled "Aircraft Derivative Gas Turbine Engine Systems" was presented by **David A. O'Neil** of Turbo Power and Marine Systems, United Aircraft Corporation.

The paper discusses the reasons for the trend toward aircraft derivative marine gas turbine propulsion engines in the 10,000 to 35,000-shp range for specific applications. A chronology of this type of engine's entrance into the marine propulsion field was presented with a review of some of the lessons learned along the way. The automation of gas turbine ships, machinery arrangements and design considerations were discussed for both simple and combined cycle propulsion plants. The excellent presentation of the paper by Mr. **O'Neil** was well appreciated by the attending members and guests.


**NEW YORK PORT ENGINEERS:** The first monthly meeting of the 1971-72 season was held by The Society of Marine Port Engineers, New York, N.Y., Inc., on September 15, 1971, at the Commuters Cafe, New York City. Cocktails and dinner preceded the meeting. **Lee Clark,** accounts supervisor, Texaco International, Marine Sales, sponsored the meeting, during which **A.O. White** of General Electric Company presented the paper "Heavy Duty Marine Gas Turbines—Operation and Maintenance." Shown above at the meeting, from left to right: **Edward English,** chairman, entertainment committee; **Percy C. Overman,** assistant secretary of the Society; **A.O. White,** General Electric Co., guest speaker; **R.F. Hamlet,** General Electric Co., assisting the speaker; **Joseph Thelgie,** chairman, board of directors of the Society; **John C. Fox,** president of the Society, and **Lee H. Clark,** Texaco, Inc., paper sponsor.

## Babcock & Wilcox Begins Expansion Of Paris, Texas Works

Babcock & Wilcox has begun construction on a $1-million expansion of its Paris, Texas Works that is expected to boost its capacity by 34 percent and to increase its efficiency in fabricating sections of generating equipment.

Two existing bays of the section shop will be extended 250 feet to provide an additional 40,000 square feet of floor space for production of components for steam generating equipment. Two electrical substations will be installed—one to replace an existing substation and another to handle the growing electrical load.

An additional $400,000 will be spent to purchase new equipment for the expanded facility, including a $200,000 double-end tube mill that will be used to prepare sections for welding. Principal products manufactured in Paris are components for stationary and marine steam generating equipment.

The Babcock & Wilcox Construction Company will handle the construction, which is expected to be completed in about a year.

Matson's container ship, the S.S. Pacific Trader



## Esso Places Order For Tanker In Japan

An affiliate of Standard Oil Company (New Jersey) has signed a contract with Nippon Kokan Kabushiki Kaisha for construction of a 255,000-dwt tanker in Japan, it was recently announced.

The agreement between the shipbuilder and Esso Tankers Inc., calls for delivery in 1974. The ship will be built at the NKK Yards at Tsu, Japan, for service as an international oil carrier.

The approximate characteristics of the tanker are: length, 1,109 feet; breadth, 170 feet; draft, 69 feet; operating speed, 15.4 knots, and power (steam turbine), 31,000 shaft horsepower.

## Enjay Chemical Co. Names Boston Agent

Enjay Chemical Company has announced the recent appointment of Nautilus Ship Supply Corporation as agent for Marine Coatings and Cleaners in the Boston area.

**Stanley Denstad,** head of the firm, stated that the complete line of Rust Ban paint and marine cleaners will be stocked in their warehouse at 332 Congress Street, Boston, Mass.

## Marine Contractor Donates Material And Labor To Paint 1885 Square-Rigger Wavertree

Mr. **Tollefsen** is shown above standing on Pier 16 under the bow of the 1885 square-rigger Wavertree, which is being repainted by him.

Several weeks ago the Seamen's Bank for Savings donated a full page ad in The New York Times to the South Street Seaport Museum which began: "Can an Ocean Wanderer Find Happiness in New York Today?"

The ad found its first answer when **George R. Tollefsen** of Tollefsen Bros. Contracting Corp., donated paint and labor to completely paint the hull of the "ocean wanderer" Wavertree, flagship of the six historic ships on display at the South Street Seaport Museum.

"We know others will follow suit," said **Peter Stanford,** Seaport Museum president, when he thanked Mr. **Tollefsen** for "his marvelous contribution. We need steel for a new mainmast. We need new decking, we need so much—above all, we need money to make this dream come true," Mr. **Stanford** added.

In making this gift, Mr. **Tollefsen** said he was happy to be a part of the restoration of such a "noble ship as Wavertree." A former president of The Propeller Club, Mr. **Tollefsen,** in addition to his contracting business, is a commissioner of the State Insurance Fund.

## Lockheed Receives Contract To Design Environmental Buoy

A weather and ocean-watching data buoy will be designed by Lockheed Missiles & Space Co., Inc., Sunnyvale, Calif., for the Commerce Department's National Oceanic and Atmospheric Administration (NOAA).

The San Francisco Bay Area based aerospace firm announced it has received a $270,000 contract to design an oceanographic and meteorological data buoy and to develop costs and plans for fabrication and production of the ocean weather monitor. The competitive program, now in the early design phase, may ultimately require the production of hundreds of buoys to be stationed around the United States and other areas of the world.

**Martin H. Rosenblum,** Lockheed project manager, said such a network of weather data buoys would prove an enormous benefit to any enterprise which is affected by the weather. "Weather ships and shore stations do a tremendous job, but they're restricted by time," he said. "Buoys can be on station 24 hours a day, 365 days a year, obtaining data in all the oceans."

By February 1, 1972, Lockheed will submit plans and designs developed during the current five-month contract to NOAA in a competitive bid for the production of prototype buoys. NOAA is expected to select the winner of the protoype phase in May 1972.

Called a Limited Capability Buoy because it takes a limited number of measurements with relatively simple sensors and electronics, the buoy will measure wind speed and direction, air pressure and temperature, and water temperature to depths of 600 feet.

During its test phase, planned for the Gulf of Mexico in late 1972 and early 1973, the buoy will transmit its data on a high frequency band to a shore station in Miami. The buoys also will transmit data to satellites on the UHF band for relay to shore stations.

Mr. **Rosenblum** said first use of the Limited Capability Buoy will probably be in the Atlantic Tropical Experiment of the Global Atmospheric Research Program (GARP). "GARP is an international cooperative research program which will involve many nations, including Russia," he explained.

The Limited Capability Buoy design contract is the second buoy award Lockheed has won from NOAA within the last two months. In June, the California firm received an award to build a new buoy with an unusual boat-shaped hull to be evaluated for its potential as a High Capability Buoy platform.

"The difference between the high and limited capability buoys is in the number of sensors, the measurements taken, and the sophistication of the electronics," Mr. **Rosenblum** explained. He added that the High Capability Buoy is intended to have a longer lifetime and to provide more detailed data with less maintenance, but because of its more difficult role, it will require more time to develop and put into operation.

## LeTourneau Constructing First U.S.-Built Semisubmersible Rig To Be Classed By Lloyd's

"Pentagone 82," a new semisubmersible drill rig designed by Societe de Forages en Mer Neptune, is the first to be built to Lloyd's Register class in the United States. She will be built by LeTourneau at a new location at Brownsville, Texas, and will be operated by Aquitaine Company of Canada for operations in the Hudson Bay, following appraisal of the plans by Lloyd's Register.

Like her sister rig Pentagone 81, completed to Lloyd's Register class in 1969, Pentagone 82 will consist of a platform mounted on five vertical columns connected to five floats. In plain view, these are arranged in the form of a pentagon, braced and stiffened by horizontal and oblique tubes of high tensile steel.

The main points of difference in the new drill rig are that in Pentagone 82, the shape of the floats has been modified to produce more buoyancy, the aft part of the rig (open in Pentagone 81) has been closed with horizontal and oblique bracings, and slight modifications have been made to the deck. In addition, more than 5,000 hp are allocated during tow to propulsion units which are fitted to three legs to improve towing capability and assist maneuverability.

The completed structure will weigh 9,130 metric tons, and the approximate dimensions are: length, 325 feet; width, 338 feet, and height, 317 feet.

Lloyd's Register carries out verification of the structural analysis of each drill rig intended for classification on an individual basis.


**41 ACRES OF PAINT:** Shown above prior to her christening at the Lindo Division of Odense Steel Shipyard, Ltd., Odense, Denmark, is the new turbine tanker Rasmine Maersk. The 32,450-shp tanker, built for the A.P. Moller Shipping Companies, has an overall length of 1,140 feet, a breadth of 170 feet and a depth of 93 feet 3 inches. Together with her sister, the Regina Maersk, commissioned July 1971, the new tanker, with her deadweight of about 285,000 tons, will be the biggest ever built in a European yard, and also the biggest of the A.P. Moller Shipping Companies (the Maersk fleet) and of the Danish merchant fleet. To meet the increasing production and expansion of the Lindo facilities, a painting hall aside from the original one erected in 1967 has been extended for the 200,000-ton vessels recently delivered to Shell and A.P. Moller. The area painted on a ship of the Rasmine Maersk size is equal to the size of a medium-size farm of approximately 41 acres. Considering that prior to painting, at some places in five to six layers, the steel has to be shot-blasted and rust-brushed, one can get an idea of the extent of this procedure alone. If the paint was not applied, corrosion attacks would remove about 400 tons of steel annually. The Rasmine Maersk will go to the Persian Gulf on her maiden voyage.

## Michigan Naval Architects To Hold Annual Reunion In New York City Nov. 10

The Annual Dinner of the Naval Architecture and Marine Engineering Alumni of The University of Michigan will be held in New York City on Wednesday, November 10, 1971, at The Brass Rail, 43rd Street and Fifth Avenue.

The central theme of this year's program will be yacht racing and a most interesting talk will be presented by **James A. McCurdy,** the prominent yacht designer. A vivid film of the 1970 America's Cup Races will also be shown.

The reception will start at 6 p.m. It is noted that this dinner will take place during the annual meeting of The Society of Naval Architects and Marine Engineers on the night before this Society's annual banquet.

Those interested in obtaining tickets for the dinner should contact **Lester Rosenblatt,** M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013. All Michigan alumni, family and friends are welcome.

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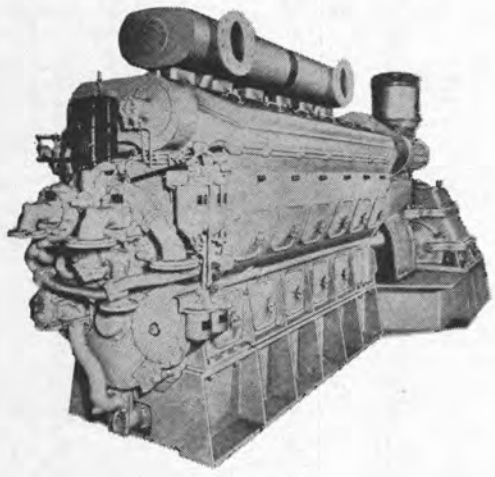
# Marine Equipment VALUES 3 BIG PAGES PACKED FULL!

## MARINE DIESEL ENGINES



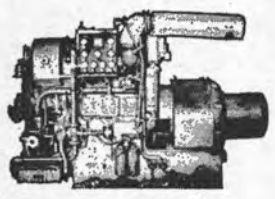
### 6—GENERAL MOTORS DIESEL ENGINES

Model 12-567A, 900 HP, 744 RPM, 3 port, 3 starboard, each complete with Falk Reverse Reduction Gear, 2.48:1 ratio.

### 3—COOPER-BESSEMER DIESEL ENGINES

Model LS-8-DR, 1300 HP, 277 RPM, direct reversing, turbo charged.

## MARINE DIESEL GENERATORS

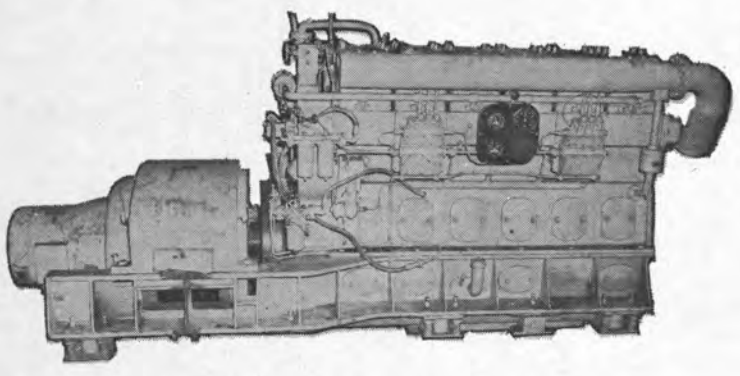


2—DE LAVERGNE, Marine, 560 HP, 514 RPM, Serials #2180 and #2181, with Electric Machinery Generators, 375 KW, 450/3/60.

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

1—GENERAL MOTORS, Model 3-268A, Marine, 150 HP, 1200 RPM, 3 cylinder, with Westinghouse Generators, 100 KW, 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.

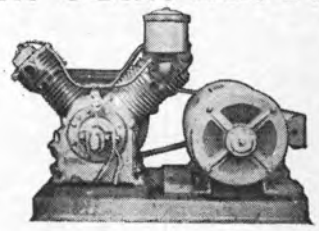


### 4—COOPER-BESSEMER, Marine

Model FSN6, 6 cylinders, 375 HP, 900 RPM, with General Electric Generators, 250 KW, 440/3/60.

For TURBINE GENERATORS, See Following Page

## AIR COMPRESSORS



2—GARDNER-DENVER, 150 CFM, 125 PSI, Class WB, Size 7x5¾x5, with Diehl Motors, 45 HP, 230 Volts DC, 870 RPM, 167 Amperes.

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

2—INGERSOLL-RAND, Size 4x1½x3½, 10 CFM, 60 PSI, with Diehl Motor, 7½ HP, 120 Volts DC.

2—WESTINGHOUSE Air Brake Steam, Size 11 x 11 x 12, approximately 60 CFM at 100 PSI.

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

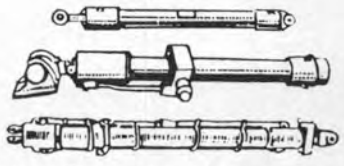
1—WORTHINGTON, 20 CFH, 3000 PSI, 4 stage, 585 RPM, with Worthington Steam Turbine, 47 HP, 5502 RPM.

## HEAT EXCHANGERS

3—ROSS Lube Oil Coolers, size 1005.5.

2—ROSS Fresh Water Coolers, size 1206.

## HYDRAULIC CYLINDERS



| Bore | Overall Stroke | Rod Diameter | retracted length | Action |
|---|---|---|---|---|
| 10" | 12" | 3.75" | 45½" | double |
| 10" | 26" | 3.75" | 58½" | single |
| 2" | 8" | 1½" | 20" | double |
| 2.5" | 15" | 1.12" | 25½" | double |
| 3" | 8" | 1.37" | 15½" | double |
| 6" | 8' | 4" | 144" | double |
| 13" | 9'7" | 5½" | 14' | double |

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SPERRY MARK 14, Model 1 Gyro Compasses, used, good, complete with Master Compass, with Binnacle, Amplifier panel, control panel, carbon pile voltage regulator, motor generator set, alarm panel, and repeaters with mounts.

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Rebuilt Guaranteed LaDel, STURTEVANT etc.

In 440 AC, in 115 DC, and in 230 DC, and i nsizes 1 HP through 20 HP. Completely reconditioned.

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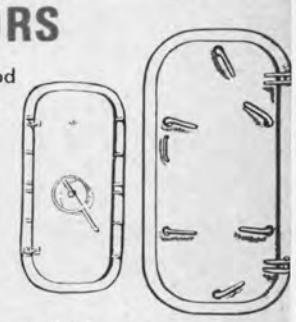
| Size A1 | Size A5 | Size A12 |
| Size A2 | Size A6 | Size A16 |

## Steel Watertight DOORS

Used, Good Condition, Trimmed Frames.



Many sizes available, priced reasonable. Some Typical Prices shown below. Please Inquire for other sizes.

26"x48"-4 Dogs-**$60.00 ea.**
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26"x66"-6 Dogs, 8 Dogs-**$100.00 ea.**
26"x66"-Q.A. Type-**$175.00 ea.**

## REDUCTION GEARS

DE LAVAL Reduction Gear from S/S Texas a C3M ship, Type Double Reduction, 8500 HP size, HP Pinion 5015 RPM, LP Pinion 3461 RPM, low speed gear, 85 RPM.

WESTINGHOUSE Reduction Gear from S/S Montrose, an AP3 ship, size 8500 HP, Gear RPM 85, HP Pinion 5238 RPM, LP Pinion 4422 RPM.

FARREL-BIRMINGHAM, as orig. used on two 1375 HP electric motors in submarine, 2 pinions, single output gear, pinion RPM 1302, Gear RPM 280; ratio 4.65:1.

WESTINGHOUSE, as orig. used on two 1362 HP electric motors in submarine, 2 pinions, single gear.

FALK Reduction Gears—Port & Starboard, Interchangeable with T-3 Tanker Gears, Falk No. 148-300. Also interchangeable with Falk Gears on AO51 Class Tankers (14 ships). Also on AO97 to AO100 Tankers.

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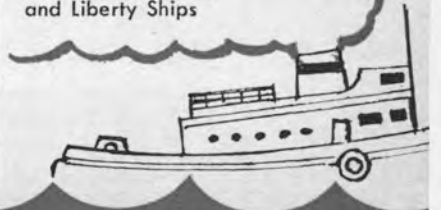
From C3M Vessel
From C3-S1-A3 Vessel,
C2-S-B1 Vessel (Moore Built,
AP2 & AP3 Victory
and Liberty Ships



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Model CWP-3, Vertical 24" Planetary Capstan Windlasses, Single Wildcat — using 1¼" Anchor Chain, Single Gypsy with 20 HP motor, 230 volts DC, complete with Contactor Panel, Master Switch, and Resistors.

3—HESSE-ERSTED VERTICAL, Single Wildcat—for 1⅜" Anchor Chain, single gypsy, with 35 HP General Electric Motor, 230 Volts DC, complete with Controller equipment.

HYDE, VERTICAL, Single Wildcat, for 1⅛" Anchor Chain, single gypsy, with 20/5 HP Motor, 440/3/60.

## ANCHOR WINDLASSES

1—LIDGERWOOD horizontal Anchor Windlass, double wildcat—for 2 1/16" Chain, double gypsy, with 50 motors, 230 volts, DC, complete with controls.

1—HORIZONTAL, of German Mfg., double wildcat—for use with 3" anchor chain, double gypsy with 230 VDC motor, complete with electrical control equipment.

AMERICAN ENGINEERING, horizontal, double 2⅛" Chain, 65 HP, 230 DC, complete.

4—AMERICAN HOIST AND DERRICK COMPANY, horizontal, double wildcat—for 2¼" chain double gypsy, 70 HP, 230 Volts DC, with electric controls.

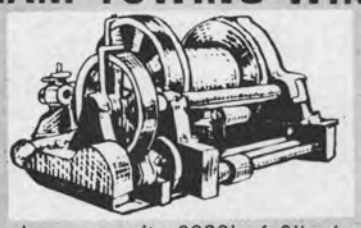
3—HESSE-ERSTED, horizontal, double wildcat, 2⅛" chain, 60 HP, 230 DC.

1—HYDE HORIZONTAL ANCHOR WINDLASS double wildcat—for use with 2⅛" Anchor Chain, and with General Motors Electric Motor, 60 HP, 230 volts DC, 560/1700 RPM, Type CDM 18831 AE. Complete with Contractor Panel, Resistors, and Master Switch.

## ANCHOR WINCHES

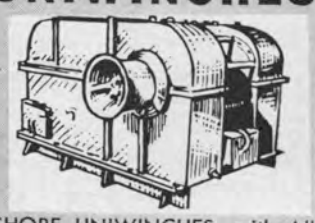
2—JAEGER, single drum—capacity approximately 900' of 1½" wire rope, double gypsy, with 35 HP Motors, 230 Volts DC, complete with electricals.

## STEAM TOWING WINCH



Single drum, capacity 2000' of 2" wire rope, cylinder size 9" bore by 10" stroke.

## UNIWINCHES



LAKESHORE UNIWINCHES, with Allis-Chalmers Motors, 50 HP, 230 Volts DC, complete with Control Equipment.

Single speed, double drum, 7450 # at 220 FPM.

Single speed, single drum, 7450 # at 220 FPM.

Two speed, single drum, 7450 # at 220 FPM, 14400 # at 105 FPM.

## CARGO HOISTER BLOCKS

5 ton rated, Steel, as removed from surplus ships. Manufactured by: Young, Draper, etc., 12" & 14" sizes.

**$34.50 ea.**

39.50 each with pull test certificates

## 3 — L.S.T. TYPE VESSELS

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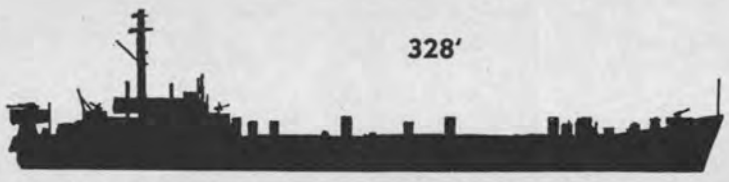


Steel Hull, 328' length overall, 50' extreme beam, maximum draft 14', light displacement 1780 tons, full load displacement 3640 tons, twin screw, with two (2) General Motors Diesel Engines, 900 HP, Model 12-567A. WILL SELL VESSELS COMPLETE (AS IS) OR STRIPPED TO HULL.

## FALK REDUCTION GEARS

6—FALK REVERSE REDUCTION GEARS 3 port, 3 starboard, as used with GM 12-567A Engines on L.S.T. Vessels, ratio 2.48:1 ahead, 2.52:1 astern.

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3—ALMON A. JOHNSON Stern Anchor Winches as removed from L.S.T. Vessels, line pull rating 100,000 pounds at 10 FPM in low gear, complete with Contractor Panels, Resistors, and Master Switches.

## OS & D RUBBER HOSE

50—6" size, 20' long sections with flanged ends, in little used, good condition.

**Price:**

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**per section**

12—4" size, ditto the above description.

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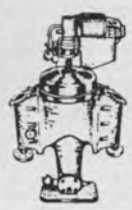
150 GPH—440 AC
—230 DC

350 GPH—230 DC

600 GPH—230 DC



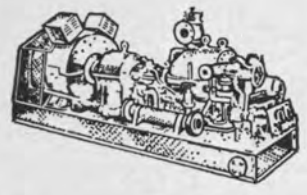
## TURBINE GENERATORS

2—DE LAVAL, 360 HP, 440 PSI, 740°F, with Crocker-Wheeler Generators, 250 KW, 240/120 DC, 1200 RPM.

1—WORTHINGTON, 225 PSI, 397°F, 6510 RPM, with Westinghouse Generator, 150 KW, 120 DC, 1250 Amperes.

6—WESTINGHOUSE, 200 PSI, with Westinghouse Generators, 60 KW, 120 DC.

4—ALLIS-CHALMERS, 440 PSI, 740° F, with Allis-Chalmers Generators, 300 KW, 240/240 DC.



1—GENERAL ELECTRIC, 525 PSI, with G.E. Generator, 250 KW, 440/3/60.

1—GENERAL ELECTRIC, with G.E. Generator, 350 KW, 440/3/60.

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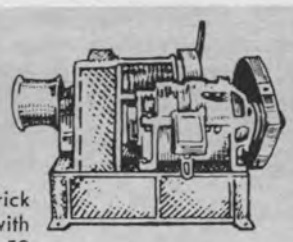

American Hoist and Derrick Company Winches with Westinghouse Motors, 50 HP, 230 Volts DC, complete with Contractor Panels, Master Switches, and Resistors.

**Single Speed, Single Drum**
**Two Speed, Single Drum**

## UNIT WINCHES

**American Hoist and Derrick Company**

U3H—SINGLE DRUM, Single speed (4)
Line Pull: 7450# - 223 FPM, 6360# - 237 FPM, 3720# - 287 FPM.

U6H—DOUBLE DRUM, Single speed (2)
Line Pull: 7450# - 223 FPM, 6360# - 237 FPM, 3720# - 287 FPM.

U5 -SINGLE DRUM, Two speed (2)
High Speed line Pull: 7450# - 224 FPM, 6360# - 238 FPM, 3720# - 288 FPM,
Low Speed Line Pull: 1100# - 114 FPM, 19000# - 96 FPM (third layer of rope).

Motor: Westinghouse, 50 HP, 230 Volts DC, 1900 RPM, Model 288212, 183 Amperes, compound wound, Frame 9 UW, horizontal.

Unit Winches complete with Contactor Panels, Resistors, Master Switches.

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### DC – HORIZONTAL

1—ALLIS-CHALMERS, 40 GPM, 30.2 ft. hd., with Allis-Chalmers Motor, 5 HP, 230 DC, 575/1150/RPM.

1—WORTHINGTON, Size 3UB1, 400 GPM, 280' head, with Westinghouse Motor, 50 HP, 230 DC.

1—WEINMAN, 220 GPM, 60' head, Size 3, Type KB, with Reliance Motor, 5 HP, 230 DC.

2—WORTHINGTON, Size 8L1, 2100 GPM, 138.5 TDM, with Westinghouse Motors, 100 HP, 230 DC.

1—WARREN, Size 8DM11½, 1175 GPM, 11.1 PSI, with Reliance Motor, 10 HP 230 Volts DC.

1—WORTHINGTON, 3½" suction, 3" discharge, 150 GPM, 23.8 PSI, with Diehl Motor, 3.47 HP, 230 DC, 1750/3500 RPM.

3—GOULDS, 250 GPM, 100 PSI, Figure 3380, 4"x3", with 30 HP Motors, 230 DC.

## CENTRIFUGAL PUMPS

### AC – HORIZONTAL

2—WARREN, 60 GPM, 50 PSI, 1.87 HP, 440/3/60, 3500 RPM.

1—WARREN, 17 GPM, 110 PSI, 3½ HP, 440/3/60, 3500 RPM.

1—WARREN, 600 GPM, 50 PSI, 8¼ HP, 440/3/60, 1135 RPM.

1—GARDNER-DENVER, 750 GPM, 360' head, 6" suction, 5" discharge, 3500 RPM, with G.E. Motor, 100 HP, 440/3/60.

1—WARREN, Size 3-SED-8, 150 GPM, 26.2' hd., with Westinghouse Motor, 3.96 HP, 440/3/60.

4—WORTHINGTON, 200 GPM, 100 PSI, 3½" suction, 3" discharge, Size 2UB1, with Wagner Motor, 25 HP, 440/3/60.

1—GARDNER-DENVER, 5" suction, 3" discharge, 350 GPM, 336' head, 50 HP, 440/3/60, 3500 RPM.

1—CARVER, 400 GPM, 100 PSI, 3½" suction, 2½" discharge, 3500 RPM, 35.7 HP, 440/3/60.

2—WORTHINGTON, 875 GPM, 10 PSI, 1160/860 RPM, with Westinghouse Motor, 4.45 HP/7.92 HP, 440/3/60.

3—WORTHINGTON, 6" x 6", 550 GPM, 25' head, 6 HP, 440/3/60, 1750 RPM.

2—BUFFALO, 250 GPM, 100 PSI, Class CCS, Size 4 x 3½", with Westinghouse Motors, 25 HP, 440/3/60.

## CENTRIFUGAL PUMPS

### DC – VERTICAL

1—AURORA, 4" x 3", with G.E. Motor, 25/40 HP, 230 DC, 1310/1750 RPM.

1—INGERSOLL-RAND, Size 8VCM, 8" suction, 8" discharge, with Westinghouse Motor, 15 HP, 230 DC, 850/1210 RPM.

1—INGERSOLL-RAND, 4" suction, 3" discharge, with Westinghouse Motor, 15 HP, 230 DC, 1310/1750 RPM.

1—WARREN, 6" suction, 3" discharge, with G.E. Motor, 5 HP, 440/3/60, 1725 RPM.

1—DAYTON-DOWD, 5" suction, 4" discharge, with Century Motor, 15 HP, 230 DC, 1310/1750 RPM.

2—ALLIS-CHALMERS, 170 GPM, 208' head, Type CF2V, 6" suction, 3½" discharge, 20 HP, 230 DC.

2—ALLIS-CHALMERS, 30 GPM, 208' hd, Type CF2V, 2½" suction, 1½" discharge, 7½ HP, 230 DC.

1—ALLIS-CHALMERS, 12,500 GPM, 10.4 PSI, Type LS-V, Size 20" x 20", 100 HP, 230 DC.

1—ALLIS-CHALMERS, 2520 GPM, 14.4 PSI, Size SE-V, 12" x 12", 30 HP, 230 DC.

2—ALLIS-CHALMERS, 600 GPM, 30 PSI, Type SGV, 5" x 5", 20 HP, 230 DC.

1—ALLIS-CHALMERS, 450 GPM, 120 PSI, 4" x 3", 50 HP, 230 DC.

3—GARDNER-DENVER, 1500 GPM, 56' head, 8" suction, 6" discharge, with 30 HP Motors, 230 DC.

## CENTRIFUGAL PUMPS

### AC – VERTICAL

1—DE LAVAL, 155 GPM, 59.9 PSI, 440/3/60.

1—WARREN, 17 GPM, 55 PSI, with Westinghouse Motor, 4.26 HP, 440/3/60.

1—INGERSOLL-RAND, Size 2VHMA, 65 GPM, 75 PSI, 440/3/60.

1—BUFFALO, Size 6, 875 GPM, 10 PSI, 6.3 HP, 440/3/60.

## ROTARY PUMPS

### DC – VERTICAL

1—WORTHINGTON, Size 4GRVS, with Westinghouse Motor, 15 HP, 230 Volts DC, 1310/1750 RPM.

2—QUIMBY, Size 4D, 225 GPM, 50 PSI, 15 HP, 230 DC, 540/740 RPM.

2—QUIMBY, Size 5, 6 x5, 400 GPM, 48 PSI, 25 HP, 230 DC.

2—QUIMBY, Size 6, 500 GPM, 70 PSI, 40 HP, 230 DC.

1—QUIMBY, Size 2½, 17 GPM, 405 PSI, 7½ HP, 230 DC.

### Rotary, AC – Vertical

2—NORTHERN, Size 7020, 10 GPM, 350 PSI, 200 RPM, 3.65 HP, 440/3/60, 1720 RPM.

## HYDRAULIC PUMPS

1—HELE SHAW, Size JLP12, 1000 PSI, 850 RPM, with Westinghouse Motor, 35 HP, 230 DC.

2—OIL GEAR, Type OH35-11, 1100 PSI, 860 RPM, with Reliance Motors, 40 HP, 230 DC.

## BOILER FEED PUMPS

2—ALDRICH vertical Triplex, 131 GPM, 520 PSI, 3-5/8" x 5", 125 HP, 230 DC.

2—WORTHINGTON vertical Simplex, 120 GPM, 550 PSI, Size 11 x 7 x 24.

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## TURBINE DRIVEN FIRE PUMPS

4—INGERSOLL-RAND, 1200 GPM, 98 PSI, Size 5UV, with Elliott Turbines, 84.3 HP, 3550 RPM, 1 stage, impulse type.

## ROTARY PUMPS

### DC – HORIZONTAL

3—NATIONAL TRANSIT, 50 GPM, 50 PSI, 3 x 2½, with G.E. Motor, 3 HP, 230 DC.

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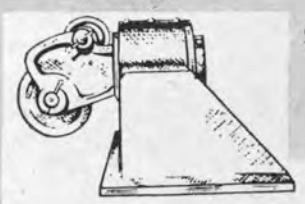
One size fairlead with universal type sheave to accommodate wire rope sizes 1" up to and including 2".

Self Aligning, Swivel Type Head.

Dependable and Ruggedly built to perform consistently year after year with minimum maintenance.



**Standard Design $995 each**

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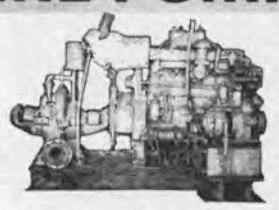
## FIRE PUMPS



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

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LIFTING RATE: 25 tons at 50 Ft. Radius at 50 to 60 FPM.

BOOM: 80' to headblock (with 10' whip)

WHIP: 10 tons at 125 FPM—2 part line

TRACK CENTERS: 20'—Engine: Cummins HBIS 601, 180 HP supercharged, elec. start

MOTORS: Each leg (4 tot.) 7½ HP, 230 DC.

POWER: Diesel electric (DC)

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**TURBO GENERATOR SET**

**Originally built for DD692 class vessel. GEI 17716. TURBINE: DORV-618N—525 lbs/825°—634 lbs/850°—10059 RPM. GEAR: S-193—reduction 8.382:1. A.C. GENERATOR: 400KW—500 KVA—440/3/60—1200 RPM—with direct-connected exciter. All ABS.**

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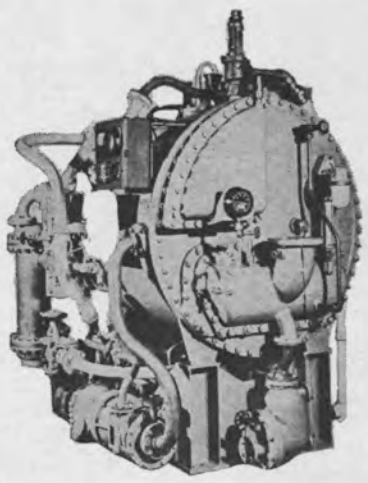

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2 L.P. Bethlehem evaporators—bronze—with all pumps and controls. Automatic feed water control—salinity indicator cells. Always kept in top shape.

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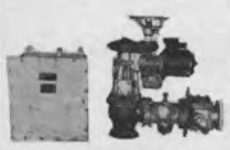

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**20KW TROY ENBERG LIBERTY GEN. SETS** **$695**
115 VDC—167 amps—400 RPM

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# PUMPS

***BOILER FEED - CIRCULATING***
***FIRE - OIL - GENERAL SERVICE, ETC.***

## BOILER FEED PUMP

**$1450.00**

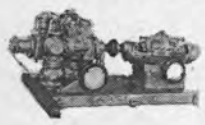
Pacific type JB — normal 150 GPM — 542 lbs — 1242'. Maximum 185 GPM—600 lbs—1418'. Steam turbine 440#—507°TT—3740 RPM. Water rate 35 lbs BHP. Weight complete 3100#—OAL 8' 9⅜"—OAW 2'. Reconditioned ABS — equal to new. Spares available.

## UNUSED CENTRIFUGAL TURBINE DRIVEN BOILER FEED PUMP

**Priced to Sell**

Worthington pump—5" size—type UFD—capacity 460 GPM @ 750#—test 1000#—impellor 9¾" — 4900 RPM — 305 HP—horizontal 3-stage—5" suction—5" discharge. TURBINE: Sturdivant Div.—type 21—size OC-22. Stem 575# normal—max. 615# — ex. pressure 15#—test pressure 923#. Originally built for cruisers—CL class—103,104, 105,106,107 vessels. New — unused.

## NEW TURBINE DRIVEN FIRE & GENERAL SERVICE PUMP



**$1650.00**

Allis-Chalmers 6x5 pump type SKH — 1200 GPM — 125 PSI — 3500 RPM. Coppos turbine type TF-22-2½—3500 RPM. 273#—50° superheat.

## UNUSED FUEL OIL SERVICE PUMP

**$1250.00**

Turbine driven rotary pump with reduction gear. Warren vertical rotary—size 3¼"—65 GPM @ 350 PSI discharge. Powered by Terry horizontal turbine type Y-w—20 HP—575# steam—5065 RPM. Pump speed 1025. Suitable for large tankers, ore carriers. Originally for U.S.N. cruisers. Unused.

## FIRE & GENERAL SERVICE PUMP

**$975.00**

Fairbanks-Morse centrifugal pump—300 GPM @ 275' discharge. 3460 RPM—3" suction—2½" discharge. MOTOR: 30 HP — 220/440/3/60 — 3460 RPM. BASE: OAL 52" — OAW 24". UNIT: OAH 24½". Looks new.

## UNUSED CIRCULATING PUMP

**$877.77**

Allis-Chalmers—close-coupled—bronze—375 GPM—40' head—size 4x3—5 HP motor—115 VDC—40 amps—1750 RPM—compound wound—continuous.

## UNUSED REFRIGERATION CONDENSER CIRCULATOR

**$397.66**

Frederick Iron & Steel Co.—close coupled — bronze—high head—10 GPM—56' @ 3500 RPM—1"x1¼" — test pressure 75#—48" submergance horizontal MOTOR: Barble-Card Electric—1 HP — 440/3/60—1.7 amps—3500 RPM. Spraytite enclosure—continuous duty 50-125 degrees F — with magnetic controller — some spares. Motor is high shock non-magnetic.

## UNUSED HORIZONTAL DISTILLER FRESH WATER PUMP

**$397.66**

Bronze Davidson pump—20 GPM — 51' head—submergance 4 — 3500 RPM. MOTOR: Reliance 1 HP—220/440/3/60—3500 RPM — 162 lbs total weight — 1¼" suction — 1" discharge. OAL 22½"—OAW 9⅞"—OAH 12". Complete with Cutler-Hammer controller.

## NEW BRONZE FRESH WATER PUMP

**$429.66**

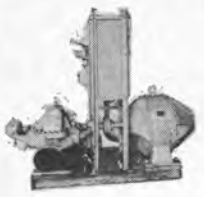
Mfg by Allis-Chalmers. 35 GPM @ 43.3 lbs head. MOTOR: 3 HP—440/3/60—with spare parts and control.

## UNUSED HIGH HEAD CENTRIFUGAL PUMP

**Priced Right**

For butane, fuel oil, hot solvents to 800° max. Ingersoll-Rand HFLA — serial 056-3136 — 600 GPM—580' head—6" inlet—4" outlet. Flange connection—steel base mounted. Westinghouse motor CS—125 HP—440/3/60—3530 RPM — 4200 lbs total weight.

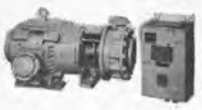
## FIRE PUMP



**$1950.00**

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

## HIGH HEAD DIESEL FRESH WATER SERVICE PUMP



**$475.00**

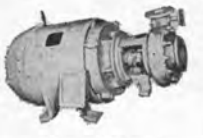
Fairbanks-Morse pump—75 GPM — 56.1 ft head — test 110 lbs. MOTOR: Reliance 3 HP—frame 284 UCZ — 440/3/60 — 1750 RPM—with starter.

## UNUSED BUFFALO PUMPS

**$1495.00**

All bronze — model S.L. — 750 GPM — 50 PSI head — 28 BHP. MOTOR: Continental—30 HP—440/3/60—37 amps—1760RPM. 5" Suction—4" discharge. OAL 4' 8½"—OAW 22"—OAH 30"—weight 1200 lbs.

## A. C. FIRE PUMPS



**$887.00**

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Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231
Kiene Diesel Accessories, Inc., P.O. Box 216, Franklin Park, Ill. 60131
United Filtration Corp., 9600 John St., Santa Fe Springs, Calif. 90670

**DIESEL ENGINES**
Alco Engine Div., White Industrial Power, Inc., 100 Orchard St., Auburn, N.Y. 13021
Bruce GM Diesel, Inc., 180 Route #17 S. at Interstate 80, Lodi, N.J. 07644
Caterpillar Tractor Co., Industrial Div., 100 N.E. Adams St., Peoria, Ill. 61602
Colt Industries Inc., Power Systems Div., Beloit, Wisc. 53511
Electro-Motive Division General Motors, La Grange, Illinois 60525
Fiat, Turin, Italy, U.S.A. 375 Park Ave., New York, N.Y. 10022
Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231
M.A.N. Maschinenfabrik Augsburg-Nurnberg AG, Werk Augsburg, West Germany.
H. O. Penn Machinery Co., 1561 Stewart Ave., Westbury, N.Y. 11590

**DIESEL ENGINE MUFFLERS**
Marine Products & Engrg. Co., 20 Vesey St., New York, N.Y. 10007

**DOORS—Watertight—Bulkhead**
Overbeke-Kain Co., 209 Aurora Rd., Bedford, Ohio 44014
Pioneer Industries, 401 Washington Ave., Carlstadt, N.J. 07072
Walz & Krenzer, Inc., 20 Vesey St., New York, N.Y. 10007

**ELECTRICAL EQUIPMENT**
Arnessen Electric Co., Inc., 335 Bond St., Brooklyn, N.Y.
Galbraith-Pilot Marine Corp., 600 4th Ave., Brooklyn, N.Y. 11215
L. F. Gaubert & Co., 700 So. Broad St., New Orleans, La. 70150
Marine Industrial Products Co., 195 Paterson Ave., Little Falls, N.J. 07424
Merrin Electric, 162 Chambers St., New York, N.Y. 10007
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Pouluhn Electric Mfg. Co. Inc., P.O. Box 12805, Houston, Tex. 77017

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Bethlehem Steel Corp., Shipbuilding, 25 B'way, N.Y., N.Y. 10004
Mechanical Equipment Co., Inc., 861 Carondelet St., New Orleans, La. 70130

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Robvon Backing Ring Co., 675 Garden St., Elizabeth, N.J. 07207

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Dravo Corporation, Neville Island, Pittsburgh 25, Pa.

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Elisha Webb & Son Co., 136 So. Front St., Philadelphia, Pa. 19106

**HEATERS—Ship**
Todd Products, Div. of Todd Shipyards Corp., Brooklyn, N.Y. 11231

**HULL CLEANING & BLASTING**
Key Engineering, 12502 Woodthorpe Lane, Houston, Texas 77024
Trident Marine, 533 East 24th St., Brooklyn, N.Y. 11210
Vacu-Blast Corp., Box 885, Belmont, Calif. 94002

**HYDRAULICS**
Bird Johnson Co., 883 Main St., Walpole, Mass. 02081
Bond Hydraulic Equip. Service, Inc., 117 Monroe St., Hoboken, N.J. 07030
Universal Hydraulics, Div. of Ohio Brass Co., 4500 Beidler Road, Willoughby, Ohio 44094
Vickers, M&O Div., Troy, Mich. 48084

**INSULATION—Marine**
Bailey Carpenter & Insulation Co., Inc.,74SullivanSt.,Bklyn,N.Y.11231

**LININGS**
Ameron Corrosion Control Div., Brea, Calif. 92621
Carboline Co., 328 Hanley Industrial Court, St. Louis, Mo. 63144

**MACHINERY MONITORS**
IRD Mechanalysis, Inc., 6150 Huntley Rd., Columbus, Ohio 43229

**MARINE DRIVES—GEARS**
Philadelphia Gear Corp., Schuylkill Expressway, King of Prussia, Pa. 19406
Western Gear Corp., Industrial Products Div., P.O. Box 126, Belmont, Calif. 94003

**MARINE NAVIGATION EQUIPMENT & AIDS**
American Hydromath Co., 55 Brixton Rd., Garden City, N.Y. 11530
Edo Western Corp., 2645 So. 2nd St., W. Salt Lake City, Utah 84115
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
ITT Decca Marine, Inc., 386 Park Ave. South, New York, N.Y. 10016
ITT Mackay Marine, 133 Terminal Ave., Clark, N.J. 07066
Marquardt Corp., 16555 Saticoy St., Van Nuys, Calif. 91406
National Marine Service, 1750 So. Brentwood Blvd., St. Louis, Mo.
Radiomarine Corp., 20 Bridge Avenue, Red Bank, N.J. 07701
RCA Service Co., A Division of RCA, Marine Communications and Navigation Equipment Service, Bldg. CHIC-225, Camden, N.J. 08101
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.
Star Lifeline, Ltd., 1148 W. 15th St., No. Vancouver, B.C., Canada
Tracor, Inc., 6500 Tracor Lane, Austin, Texas 78721

**MARINE EQUIPMENT**
Adsco Div., 34 Milburn St., Buffalo, N.Y. 14212
Nicolai Joffe Corp., P.O. Box 2445, 445 Littlefield Ave., So. San Francisco, Calif. 94080
Kearfott Marine (Div. of The Singer Co.) 21 West St., New York, N.Y. 10006
Merrin Electric, 162 Chambers St., New York, N.Y. 10007
Metritape, Inc., 77 Commonwealth Ave., West Concord, Mass. 01742
Stow Mfg. Co., 225 Shear St., Binghamton, N.Y. 13902
Vokes Filter Div., (Cardwell Machine Co.), Cardwell and Castlewood Rd., Richmond, Va. 23221

**MARINE FURNITURE**
Bailey Joiner Co., 115 King Street, Brooklyn, N.Y. 11231

**MARINE INSURANCE**
Adams & Porter, Cotton Exchange Bldg., Houston, Texas

**MARINE PROPULSION**
Buehler Corp., 9000 Precision Drive, Indianapolis, Ind. 46236
Combustion Engineering, Inc., Windsor, Connecticut 06095
General Electric Co., Marine Turbine & Gear Dept., Lynn, Mass. 01910
General Electric Co., Gas Turbine Dept., Schenectady, N.Y. 12305
Murray & Tregurtha, Inc., 2 Hancock St., Quincy, Mass. 02171
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523
Western Gear Corp., Precision Products Div., P.O. Box 190, Lynwood, Calif. 90262

**MARINE RADIO COMMUNICATIONS EQUIPMENT**
Collins Radio Co., M/S 407-321, Dallas, Texas 75207
Communication Associates, Inc., 200 McKay Road, Huntington Station, N.Y. 11746
Electro-Nav, Inc., 555 Fifth Ave., New York, N.Y. 10017
Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
ITT Decca Marine, Inc., 386 Park Ave. South, New York, N.Y. 10016
Radiomarine Corp., 20 Bridge Avenue, Red Bank, N.J. 07701
Raytheon Co. Marine Products, 676 Island Pond Rd., Manchester, N.H. 03103
RCA Service Co., A Division of RCA, Marine Communications and Navigation Equipment Service, Bldg. CHIC-225, Camden, N.J. 08101
RF Communications, Inc., 1676 University Ave., Rochester, N.Y. 14610

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Breit Engrg. Inc., 441 Gravier St., New Orleans, La. 70130
Coast Engineering Co., 711 W. 21st St., Norfolk, Va. 23517
Crandall Dry Dock Engrs., Inc., 238 Main St., Cambridge, Mass. 02142
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Sharp DeLong, 29 Broadway, New York, N.Y. 10006
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Christopher J. Foster, 14 Vanderventer Ave., Port Washington, N.Y. 11050
Friede and Goldman, Inc., 225 Baronne St., New Orleans, La. 70112
Gibbs & Cox, Inc., 21 West St., New York, N.Y. 10006
John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110
Morris Guralnick, Associates, Inc., 583 Market St., San Francisco, Calif. 94105
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L. K. Homyer, Box 408, Corona Del Mar, California 92625
Hydronautics, 6338 Lindmar Dr., P.O. Box 1068, Goleta, Calif. 93017
C. T. Ilariucci & Associates, Tourism Pier #3, San Juan, Porto Rico 00902
James S. Krogen, 1460 Brickwell Ave., Miami, Fla. 33131
Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460
Robert H. Macy, P.O. Box 758, Pascagoula, Miss. 39567
Marine Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114
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Marine Design Associates, P.O. Box 2674, Palm Beach, Florida
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Ocean-Oil International Engrg. Corp., P.O. Box 6173, New Orleans, La. 70114
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Humble Oil & Refining Co., Humble Building, Houston, Texas 77002
Mobil Oil Corp., 26 Broadway, New York, N.Y. 10004
Refineria Panama, S. A., 277 Park Ave., New York, N.Y. 10017
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Texaco, Inc., 135 E. 42nd St., New York, N.Y. 10017

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Ameron Corrosion Control Div., Brea, Calif. 92621
Carboline Co., 328 Hanley Industrial Court, St. Louis, Mo. 63144
Devoe & Raynolds Co., Inc., Subsidiary Celanese Coatings Co., 414 Wilson Ave., Newark, N.J. 07105
Enjay Chemical Co., 60 West 49th St., New York, N.Y. 10020
Farboil Company, 90 West St., New York, N.Y. 10006
International Paint Co., 21 West St., New York, N.Y. 10006
Mobil Chemical Company, Metuchen, N.J. 08840
Patterson-Sargent, P.O. Box 494, New Brunswick, N. J.
Woolsey Marine Industries Inc., 201 E. 42nd St., New York, N.Y. 10017

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Independent Petroleum Supply Co., 1345 Ave. of Americas, New York, N.Y. 10019
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Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Texaco, Inc., 135 E. 42nd St., New York, N.Y. 10017
The West Indies Oil Co., Ltd., St. John's, Antigua, W. I.

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Ameron Corrosion Control Div., Brea, Calif. 92621
Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231
Philadelphia Resins Co., 20 Commerce Dr., Montgomeryville, Pa. 18936
Rotocast Plastic Products, Inc., 6700 N.W. 36th Ave., Miami, Florida 33147

**POLLUTION CONTROL**
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Uniroyal, Inc., 10 Eagle St., Providence, R.I. 02901

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Jacksonville Port Authority, 2701 Tallyrand Ave., Jacksonville, Fla.

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Bethlehem Steel Corp., Shipbuilding, 25 Broadway, N.Y., N.Y. 10004
Bird-Johnson Co., 883 Main Street, Walpole, Mass. 02081
Coolidge Propeller Co., 1608 Fairview Ave. E., Seattle, Wash. 98102
Federal Propellers, 1501 Buchanan Ave. S.W., Grand Rapids, Mich. 49502
Ferguson Propeller, 1132 Clinton St., Hoboken, N.J. 07030

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Colt Industries, Inc., Fairbanks Morse Pump & Electric Div., 3601 Kansas Ave., Kansas City, Kansas 66110
Goulds Pumps, Seneca Falls, N.Y. 13148
Houttin-Pompen N. V. Sophialaan 4, Utrecht, Holland
Worthington Corporation, Harrison, New Jersey 07029

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W. W. Patterson Co., 830 Brocket St., Pittsburgh, Pa. 15233

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York Corp., Grantley Road, York, Pa. 17405

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Du Pont Co., Room 31H1, Wilmington, Delaware 19898
Jackson Rope Corp., 9th & Oley, Reading, Pa. 19604
Samson Cordage Works, 470 Atlantic Ave., Boston, Mass. 02210
Tubbs Cordage Company, P.O. Box 709, Orange, Calif. 92669
Wall Rope Works, Inc., Beverly, N. J. 08010

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Schuyler's Engineered Products Co., Box 87, Staten Island, N.Y.
Yokohama Rubber Co. Ltd., P.O. Box 46, Shiba, Tokyo 105, Japan

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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.

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Patent Scaffolding Co., 11-11 - 34th Ave., Long Island City, N.Y. 11106

**SEALS**
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**SEARCHLIGHTS**
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Huntington Alloy Products, Div. International Nickel Co., Inc., Huntington, W. Va. 25720
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Conrad Industries, P.O. Box 790, Morgan City, La. 70380
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Dravo Corporation, Neville Island, Pittsburgh 25, Pa.
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General Dynamics, Electric Boat Division, 99M Eastern Point Road, Groton, Conn. 06340
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Industrial Steel & Mach. Works, Inc., P.O. Box 2217, Gulfport, Miss. 39501
Ishikawajima-Harima Heavy Industries Co., Ltd., 15 William St., New York, N.Y. 10005
Jacksonville Shipyards, 644 E. Bay St., Jacksonville, Fla. 32203
Jeffboat, Inc., Jeffersonville, Ind. 47130
Kawasaki Dockyard Co., 8 Kaigon-dori, Ikuta-ku, Kobe, Japan
Kelso Marine, Inc., P.O. Box 268, Galveston, Texas 77550
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Levingston Shipbuilding Co., P.O. Box 968, Orange, Texas 77630
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Maryland Shipbuilding & Drydock, P.O. Box 537, Baltimore, Md. 21203
Matton Shipyard Co., Inc., P.O. Box 428, Cohoes, New York 12047
Mitsui Shipbuilding & Eng. Co., Ltd., Nihonbashi-Muromachi, Chuo-ku, Tokyo, Japan
Mitsubishi Heavy Industries, Ltd., 5-1 Marunouchi 2-chome, Chiyoda-ku, Tokyo, Japan
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Northwest Marine Iron Works., P.O. Box 3109, Swan Island, Portland, Oregon 97208
Nuclear Service & Construction Co., Inc., 9296 Warwick Blvd., Newport News, Va. 23607
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St. Louis Shipbuilding—Federal Barge, Inc., 611 East Marceau, St. Louis, Mo. 63111
Sasebo Heavy Industries Co., Ltd., New Ohtemachi Bldg., Chiyoda-ku, Tokyo, Japan
Sembawang Shipyard (Pte) Ltd., P.O. Box 3, Sembawang, P.O. Singapore, 27
Star Shipyards, Ltd., 61 Duncan St., New Westminster, Vancouver, B.C., Canada
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