

MARITIME REPORTER AND ENGINEERING NEWS



**Jeffboat-Built M/V Thruston B. Morton Joins
Fleet Of American Commercial Lines, Inc.**

(SEE PAGE 6)

September 1, 1978

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



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Pilot house elevated to 45' height of eye.



Tug Marjorie B. McAllister with barge on hawser,
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Marine Engineering Firm Formed In Oregon

The firm of Marine Engineering and Survey Associates, Ltd., has announced its incorporation under the laws of the State of Oregon, effective July 21, 1978. The announcement was made by Portland marine transportation consultant **James H. Sanders**, the administrative contractor for Marine Intermodal Cooperative Association.

Marine Engineering and Survey Associates has been organized to provide low-cost vessel and intermodal surveys exclusively for members of Marine Intermodal Cooperative Association. The chairman of the initial board of directors is Seattle naval architect **Donald Surgenor**, a former chief engineer for Todd Shipyards in Seattle, Wash. The firm is operational now in Portland and Seattle, and anticipates coverage of other West Coast ports.

Marine Engineering and Survey Associates may be contacted through Marine Intermodal Cooperative Association's Portland office at 1029 N.W. Hoyt, Portland, Ore. 97209.

Jurong Shipyard Ltd. Awarded Multimillion Conversion Contract

Jurong Shipyard Limited, 5, Pulau Samlun, Jurong Town, Singapore 22, was awarded a \$30-million (Singapore dollars) contract by Messrs. Hansa Offshore (S.E.A.) Pte. Ltd., a Singapore registered company of international repute, to convert four of the existing 18,880-ton Mitsui-Concord type cargo vessels to 20,150-ton lift-on/lift-off cellular container carriers.

The contract was signed on July 26, 1978, in Singapore, between **T. Yano**, joint managing director of Jurong Shipyard Limited, and **Sir Anthony Hayward**, director of Messrs. Hansa Offshore (S.E.A.) Pte. Ltd.

The joint managing director of the yard, **Low Guan Onn**, disclosed that this is one of the largest single repair contracts which Jurong Shipyard Limited has secured since its founding. The value of the contract, \$30 million, will provide work for its labor force of 2,500 workers for a period of four to five months.

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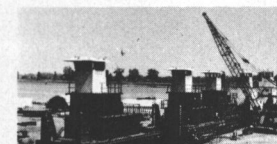
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PASSENGER VESSELS USCG



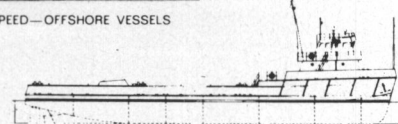
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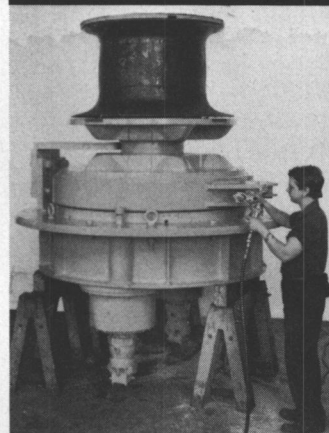


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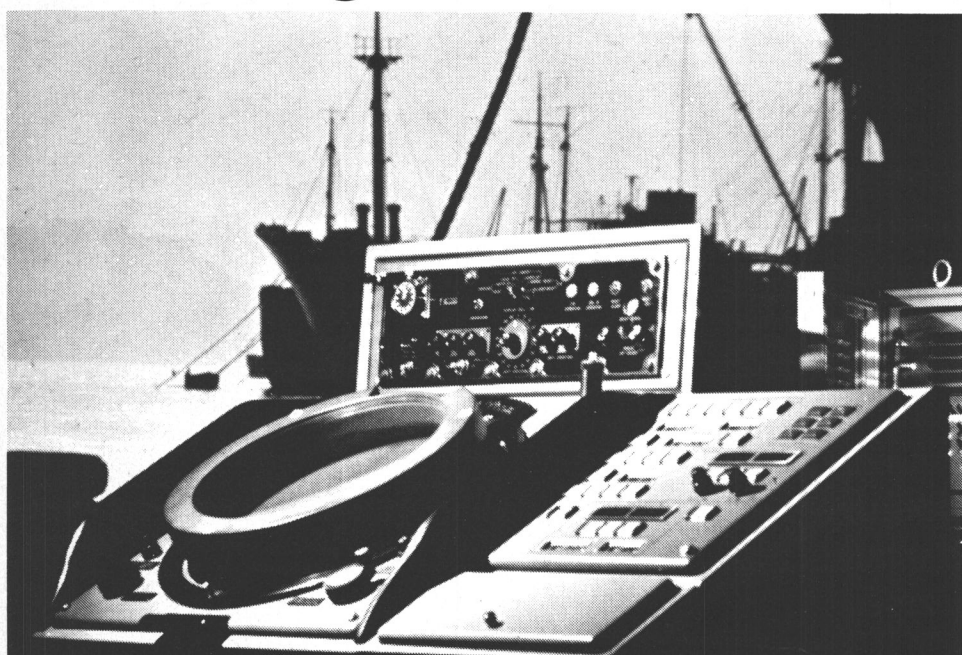
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Powered by Alco diesels and designed and built by Jeffboat, the Thruston B. Morton has been constructed for use on the Illinois River, with special features which allow optimum performance year-round.

Jeffboat Delivers The Thruston B. Morton

Shortly after the motor vessel Thruston B. Morton was christened on July 8, 1978, at the River Front Plaza in Louisville, Ky., she joined the fleet of American Commercial Lines, Inc., moving tows on the inland waterways system.

The vessel was named to honor **Thruston B. Morton**, former Senator from Kentucky and a nine-year member of the board of directors of Texas Gas Transmission Corporation.

A native of Louisville, Ky., Mr. Morton received his early education in Kentucky public schools and graduated from Yale University in 1929. Following his graduation, he worked for Ballard and Ballard, a grain and milling company, and served a tour of duty with the United States Navy.

In 1946, Mr. Morton was elected to the United States House of Representatives, serving as Congressman from the Third District of Kentucky until 1952. He was appointed Assistant Secretary of State in 1953, and in 1956 ran successfully for the United States Senate. As Senator, he served illustriously on the Finance Committee and the Committee on Interstate and Foreign Commerce, among others.

At President Eisenhower's request, Mr. Morton accepted the Chairmanship of the Republican National Committee in 1959, and in 1963, he was elected to the Chairmanship of the Republican Senatorial Campaign Committee, a position he held for four years.

Since leaving the Senate, Mr. Morton has been associated with several business corporations in Kentucky, including Texas Gas Transmission Corporation.

Designed and built by Jeffboat, Inc. in Jeffersonville, Ind., the Thruston B. Morton has been constructed for use on the Illinois River, with special features which allow optimum performance year-round.

Unusually heavy construction of the hull plate, rudders and shafts will aid in icebreaking operations

and protect the vessel from damage. A double-bottomed engine room gives extra protection from heavy-grounding damage. In addition, the Thruston B. Morton is designed to pull, as well as push, barges to facilitate continuous operations in adverse weather conditions while minimizing the risk of possible damage to its tow.

Powered with two four-cycle Alco diesel engines, the new towboat can safely and expeditiously handle tows carrying 22,500 tons or more of cargo. Outstanding features of maneuverability, safety, and crew comfort were built into her design.

A closed-circuit television system enables the captain or pilot on duty to maintain a constant visual check of the engine room, galley and crew's lounge.

Radar equipment installed on the new vessel makes possible continuous operation by providing the pilot an electronic picture of the shoreline, other vessels on the river, bridge piers and other obstructions which may be blocked from view by darkness, fog, rain or snow.

A voice radio provides communications with the ACL home offices, other vessels on the river and shore installations. An intercom system facilitates onboard communications, and a mobile telephone sound-powered phone allows ship-to-shore communications.

Ship-control equipment includes a Tugmonitor system that brings operating data into a central location. This system permits continual observance of engine oil, water and fuel pressures, clutch air pressure, and oil and water temperatures for both main engines and auxiliary engines.

Other equipment includes a swing indicator, a digital water-depth indicator, main engine and steering controls, searchlight controls, alarms for the main generators and main engines, and operating controls for the electric winches on the main deck.

Fire detectors are mounted throughout the upper and lower engine room and the generator room. When a detector is energized, an alarm sounds throughout the alarm system. This system includes CO bottles with outside pull cables for the galley, generator room and engine room. Portable hand extinguishers are located throughout the vessel to provide additional protection.

All quarters on the motor vessel Thruston B. Morton, including the cabin areas, lounges, galley and pilothouse are fully air-conditioned.

American Commercial Lines, Inc., and Jeffboat, Incorporated are subsidiaries of Texas Gas Transmission Corporation.

Specifications Thruston B. Morton

Principal Dimensions

Length	150' 0"
Breadth	35' 0"
Depth	12' 6"
Draft, Normal Operating	6' 6"
Draft, Loaded	8' 6"
Displacement, Normal	910 tons

Capacities

Fuel Oil	61,200 gal.
Fresh Water	14,100 gal.
Lube Oil	2,825 gal.

Propulsion

Main engines: Two Alco Diesel Engines, 12 cylinder, Model 251F, each rated 2,100 hp. Mathers Air Controls.

Reverse reduction gears: Two Falk, Model 2440 MR Ratio 4,708 to 1.

Propeller shafts: 10½-inch-diameter alloy steel forging.

Propellers: Two five-blade, 100-inch-diameter stainless-steel propellers.

Steering gear: Two steering rudders and four flanking rudders, all streamlined, operated by independent hydraulic steering rams.

Auxiliary Machinery

Main generators: Two 75KW 460-volt, 3-phase, 60-hertz generators, each driven by General Motors Detroit Diesel 6-71 engines.

Switchboard: Enclosed, dead-front type, New Orleans Armature Works.

Heating and air-conditioning: Hot Water Kewanee Boiler 3R6-FO. Dunham-Bush air-conditioning, 20 tons total capacity.

Air compressors: Three Westinghouse compressors, Model 3 VC-B, each rated 23.8 CFM at 250 psi.

Sanitary water system: Brunner filter, Model AF30, with Wilcox chlorinator.

Fuel oil filter: Four Briggs Filtration Co. filters, Model BFS-V-VI.

Fire Protection: Six fire stations, with remotely started pump, Ingersoll-Rand Model 3x2x8HC 200 gpm at 230 foot head.

Fixed CO₂ system for engine room: Also semi-fixed CO₂ system in engine room and portable extinguishers throughout boat.



Far left, the Honorable Rogers C.B. Morton, former Secretary of the Interior, and speaker at the christening ceremonies, and far right, Thruston B. Morton, with invited guests, watch Mrs. Thruston B. Morton as she breaks the bottle on the vessel named to honor her husband.

Galley Equipment

Range: Toastmaster Model G20M1RA.

Freezer: 45-cubic-foot Jordan reach-in unit.

Refrigerators: 14-cubic-foot Westinghouse night box and 45-cubic-foot Jordan reach-in box.

Deck Machinery

Capstans: One Schoellhorn-Albrecht Co. type 21063, two-speed, 10 hp.

Winches: Two Beebe, Model 62, 5-hp electric.

Boat hoists: One 1½-ton electric units; electric remote control, 50 tons.

Navigation & Communication Equipment

Radar: Sperry MK16.

Digital Depth Indicator: Raytheon DE-760.

Intercom: TOA/Moakler.

Sound-powered telephone: Hose-McCann.

Searchlight: Carlisle & Finch, two Xenon.

Air horn: Kahlenberg, Model Q-4.

Tugmonitor: National Marine Series W, Model 01038.

Closed-circuit TV: Sanyo-Model VM 4092 monitors, 4 Sanyo Model VC1600x cameras.

Swing-O-Meter: Shannon Model 2B.

Radio: Modar D80SCA SSB, 1-Modar Triton 55/75 VHF, 1-intech Vio8BB VHF.

Rhine-Schelde-Verolme And IHC Offshore Yard Effect Shipbuilding Merger

A reorganization of the Dutch shipbuilding industries has resulted in the merger of IHC Gusto, the offshore yard of IHC Holland, into the Rhine-Schelde-Verolme Group (RSV). This merger became effective July 15, 1978.

The production facilities of Gusto will be shut down and its labor force will be transferred to the RSV yards, principally the large Verolme Dok-en Scheepsbouw at Rozenburg, near Rotterdam.

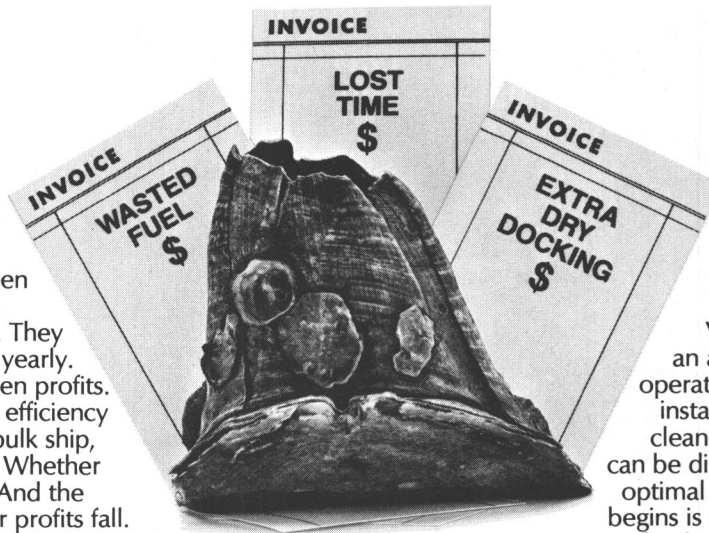
The IHC Gusto design and engineering departments (approximately 130 men) has been merged into a new engineering company under the name of RSV Gusto Engineering. IHC Gusto Engineering has a well-established record in the offshore industry, having designed such advanced systems as the Pelican type dynamic positioned drillships, large offshore cranes such as Thor, and the 3,000-ton crane for Heerema's semisubmersible crane barge Balder, jackups such as the Mærsk Explorer, pipelaying barges including the Viking Piper, and offshore storage systems such as

the Shell Esso Brent Spar. IHC Gusto received the 1978 Offshore Technology Conference Distinguished Achievement Award, which in a large part was due to the accomplishments of the Gusto design and engineering departments.

The new company, RSV Gusto Engineering will, in addition to providing engineering services, continue to offer the famous

Gusto products to the offshore industry. In view of the policy of many governments to stimulate construction in domestic shipyards, RSV Gusto Engineering has been organized to provide complete project responsibility for engineering and construction of offshore systems at any shipyard in the world. This philosophy had already been successfully implemented in the construction of

a series of 2,000-ton and 3,000-ton offshore cranes for the Netherlands Offshore Company and Heerema Marine Contractors. These cranes were built by Sumitomo Heavy Industries in Japan under the project management, engineering, and quality control provided by Gusto. **J.D. Bax** and **W.A.G. de Vries** have been appointed as managing directors of RSV Gusto Engineering.



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

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APL To Build Five New Containerships

American President Lines, Ltd. (APL) has applied for construction-differential subsidy (CDS) to aid in the construction of five new containerships, with an option of building only four. The vessels will be used in APL's trans-Pacific services.

APL's 20-year operating-differ-

ential subsidy agreement with the Maritime Administration requires the company to award contracts for at least two new replacement vessels by December 31, 1978. The two ships would replace the President's Lincoln and Tyler (C4 partial containerships) and the President Grant (a C6 full containership declared a total constructive loss in 1976).

By constructing five vessels,

APL seeks to also replace the C6 containerships President's Polk, Monroe, and Harrison. APL further proposes that the replaced vessels "be disposed of by trade-in or sale to the Maritime Administration in accordance with Section 510 of the Merchant Marine Act of 1936, as amended."

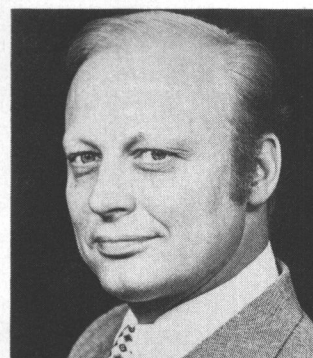
The five new C9-S-132a-type containerships would each have a deadweight capacity of approxi-

mately 32,260 tons and a sea speed of about 24 knots. Each vessel would have a capacity of approximately 2,476 TEUs (20-foot equivalent units).

A shipyard has not yet been selected.

Kongsberg Systems, Inc. Names Ambjør President

Kongsberg Systems, Inc., 10 DeAngelo Drive, Bedford, Mass. 01730, has announced the appointment of Erik Ambjør as president. Mr. Ambjør succeeds Dr. Trond Bue, who has recently assumed another position with Kongsberg Systems' parent company, Kongsberg Vaapenfabrikk of Norway.



Erik Ambjør

Mr. Ambjør has been the president of Norcontrol USA, Inc. since 1970, and will direct all of KSI's business activities, including the merger of Norcontrol USA, Inc. as the Marine Division of Kongsberg Systems, Inc. The merger coincides with the acquisition of Norcontrol in Norway by Kongsberg Vaapenfabrikk, one of Norway's largest industry firms and the parent company of Kongsberg Systems, Inc. and Norcontrol USA, Inc.

Mr. Ambjør holds a Master of Science degree in electrical engineering from New Jersey Institute of Technology, and attended additional graduate studies in theoretical physics at Stevens Institute of Technology.

Previous to serving at Norcontrol, Mr. Ambjør had many years of engineering and engineering management experience at The Singer Company, Princeton University Forestal Research Center, ITT Federal Laboratories, and Linde Development Laboratories. Mr. Ambjør was chosen because of his background in the areas of computerized drafting systems, flame cutting, and marine automation.

Kongsberg Systems, Inc., Data Division is a major supplier of turnkey computer controlled drafting systems and flame cutting controllers supplying the automotive, aerospace, cartographic, shipbuilding and data processing industries in the U.S., Mexico and Canada. Norcontrol USA, Inc. is a leading supplier of computer integrated navigations, vessel dynamic positioning systems, gyrocompasses, autopilots, steering systems, and engine room systems.

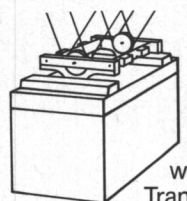
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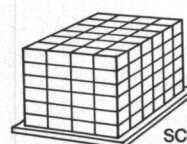
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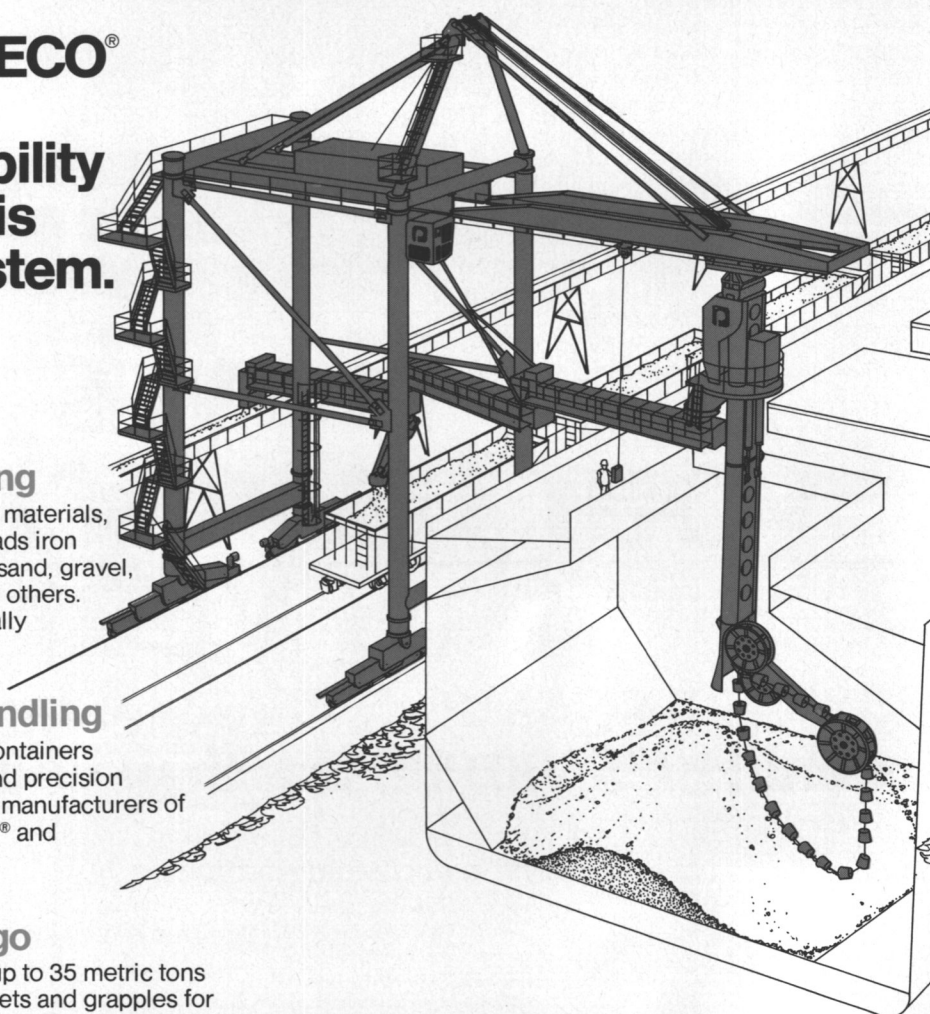
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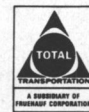
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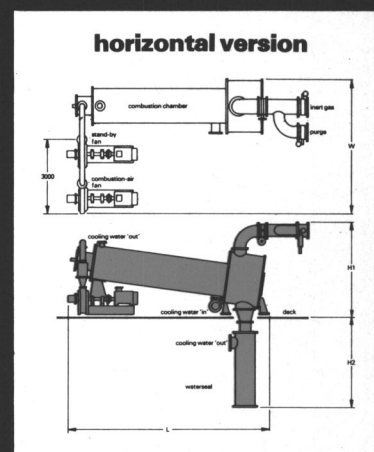
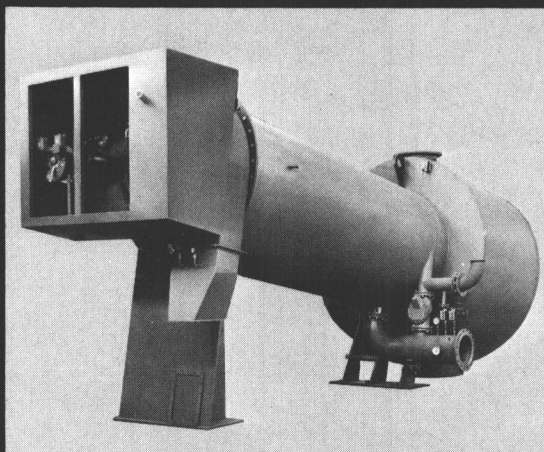
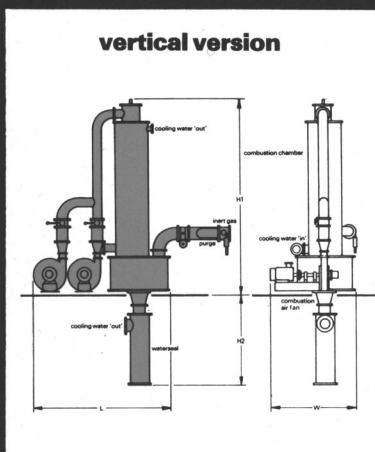
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THE JOURNAL OF COMMERCE, Tuesday, February 21, 1978

Compromise Set On Tanker Safety

By EDWIN UNSWORTH
Journal of Commerce Staff
LONDON — A two-week-long conference on oil tanker safety and anti-pollution measures organized by the Inter-

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

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

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Tracor Marine Awarded \$3.6-Million Navy Contract

A \$3.6-million contract to conduct acceptance testing of sonobuoys for the United States Navy has been awarded by the Naval Avionics Center, Indianapolis, Ind., to Tracor Marine, Inc., Port Everglades, Fla., subsidiary of Tracor, Inc., Austin, Texas.

Jean Fitzgerald, president of

Tracor Marine, said the contract is for 15 months, effective July 1, and contains two successive 12-month options of approximately \$3 million each.

According to Mr. Fitzgerald, the contract involves measuring and documenting performance parameters of activated sonobuoys. The sonobuoys, which are production units selected at random, undergo critical analysis and eval-

uation in a number of test procedures. These tests are conducted by a Tracor Marine team of nearly 100 engineers, scientists, and crew members at Tracor Marine locations in Brunswick and South Bristol, Maine, Port Everglades, Fla., and Ham's Bluff and Gallows Bay, St. Croix, the Virgin Islands.

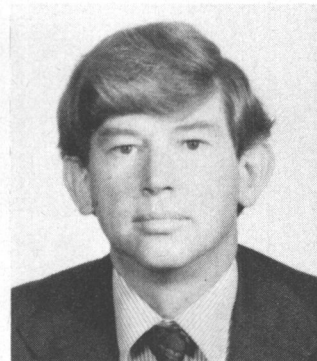
Cold-water testing is conducted off the coast of Maine, and deep-

water tests are performed in the Caribbean. In both areas, the sonobuoys are flown aboard U.S. Navy aircraft, operated and maintained by Tracor Marine crews, and are dropped into the ocean and retrieved aboard Tracor Marine recovery and test research vessels.

Throughout the testing, the sonobuoys undergo analysis on Tracor-operated test equipments. Following completion of tests, the sonobuoys are refurbished at Tracor Marine's South Bristol location.

Tracor Marine, headquartered in Port Everglades, operates a full-service commercial shipyard and owns a fleet of research vessels which it charts and crews for large-scale ocean research projects of government, industry, and educational institutions. The company is part of the Sciences & Systems Group of Tracor, Inc., an international technological products and services company.

Sheridan Lee Opens New York Office



Sheridan I. Lee

Sheridan I. Lee has announced the opening of his own consulting and surveying company.

Mr. Lee graduated from South Shields Marine College, England in 1962, and followed a career at sea with the London shipowners Furness, Withy and Co., Ltd., obtaining his chief engineer's license in 1966. In 1967, he joined Hemisphere Transportation Corporation, Wilmington, Del., as a ship superintendent, and was with them until May 1971 when he joined Kaiser International Shipping Corporation, Oakland, Calif. as assistant manager of construction and engineering.

At the completion of Kaiser's shipbuilding program in October 1973, Mr. Lee formed Harwich Tonnage, Inc. in Los Angeles, and for the next 3½ years was actively involved in consulting work for shipowners, major corporations and trading companies. During this period, he also became involved in chartering and the management of time-chartered vessels, which culminated in his joining Navarino Shipping and Transport S.A. of Piraeus, Greece, in January 1977 as manager of chartering and operations, and establishing their New York office.

Mr. Lee is working under his own name at 104 East 40th Street, New York, N.Y. 10016.



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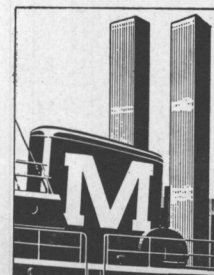
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major airline uses Manlift.[®] you should.

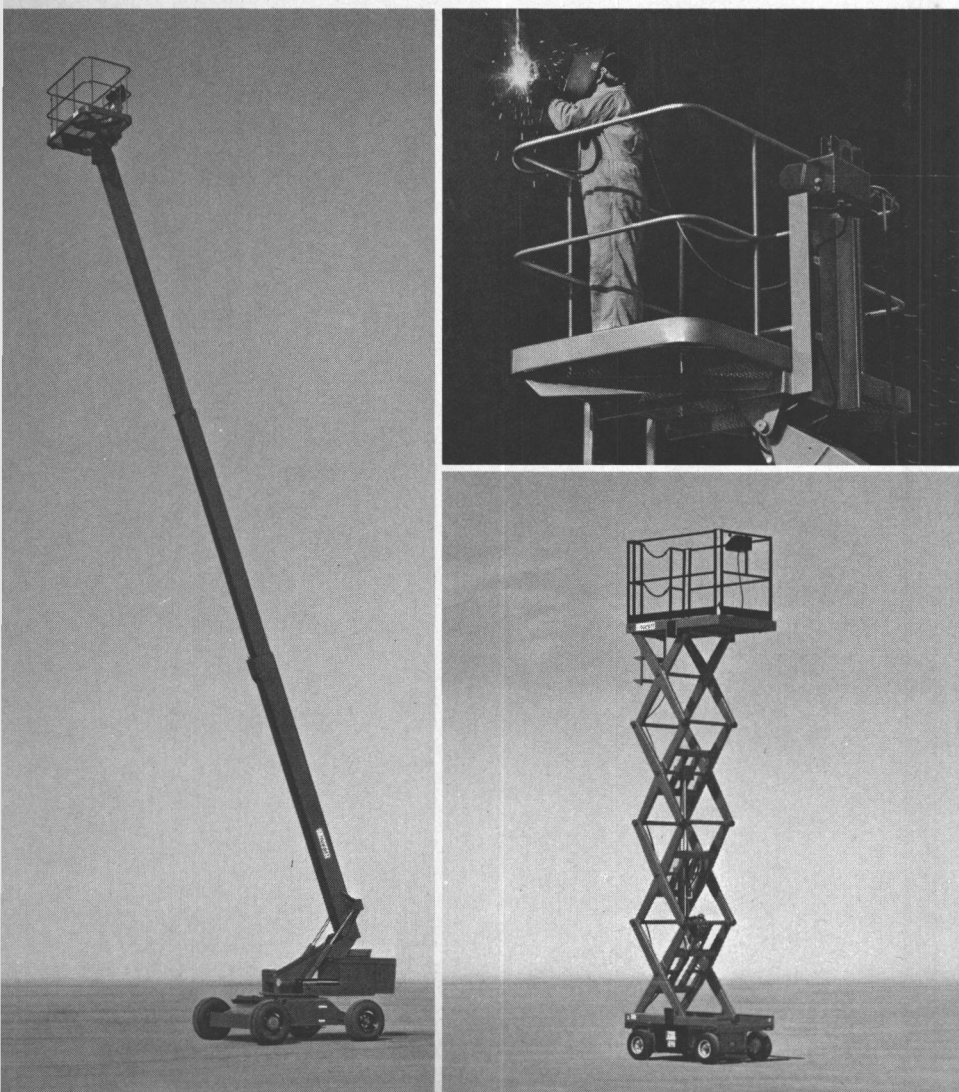
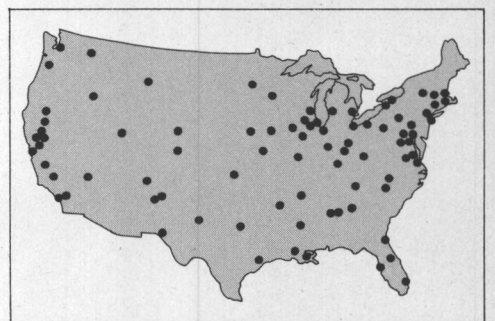
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Third Generation Ro/Ro Subject Of New York SNAME Section Meeting

The New York Metropolitan Section of The Society of Naval Architects and Marine Engineers has announced that its first meeting of the 1978-79 season will be held at the Whitehall Club in New York City on September 19, 1978. The social hour will commence at

5:30 p.m., to be followed by dinner and the technical presentation. This meeting will also be past chairman's night.

The title of the technical paper is "Design of the Third Generation Deep Sea Ro/Ro," and will be jointly presented by representatives from Mitsubishi Heavy Industries, Ltd., the shipbuilder, and Transatlantic Rederi, A.B., the owners of the vessel.

The paper will discuss general considerations and peculiarities in the design of ro/ro vessels, as well as the basic conception and development of the third generation deepsea ro/ro-class ship. Machinery arrangement, optimization of hull form, and structural design and safety measures applied for accidental damage, which required special investigation to satisfy the owner's advanced requirements, will also be discussed.

John Smith Named Yard Operations Director At NASSCO

John W. Smith has assumed responsibility for yard operations at National Steel and Shipbuilding Company (NASSCO), San Diego, Calif., succeeding **John McQuaide**, who has retired after more than 40 years in the shipbuilding business. Mr. **McQuaide** has served as vice president of yard operations since 1973.



John W. Smith

Mr. **Smith** joined NASSCO 30 years ago as machine shop foreman, and was director of new construction until his recent promotion. As director of yard operations, he will be responsible for new construction as well as four other departments—repair, maintenance, foundry/galvanizing, and machinery.

NASSCO is one of the largest shipbuilding firms on the West Coast. In addition to major Navy construction, the company currently is completing the third in a series of 188,500-dwt San Diego-Class tankers designed for the Alaskan oil trade. The large tanker is the first of two being built for Atlantic Richfield Company, and will be christened in October.

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

B&W \$109.4-Million Award Includes Work For Navy

The Babcock & Wilcox Company announced it has received contract awards totaling \$109.4 million from the Department of Energy.

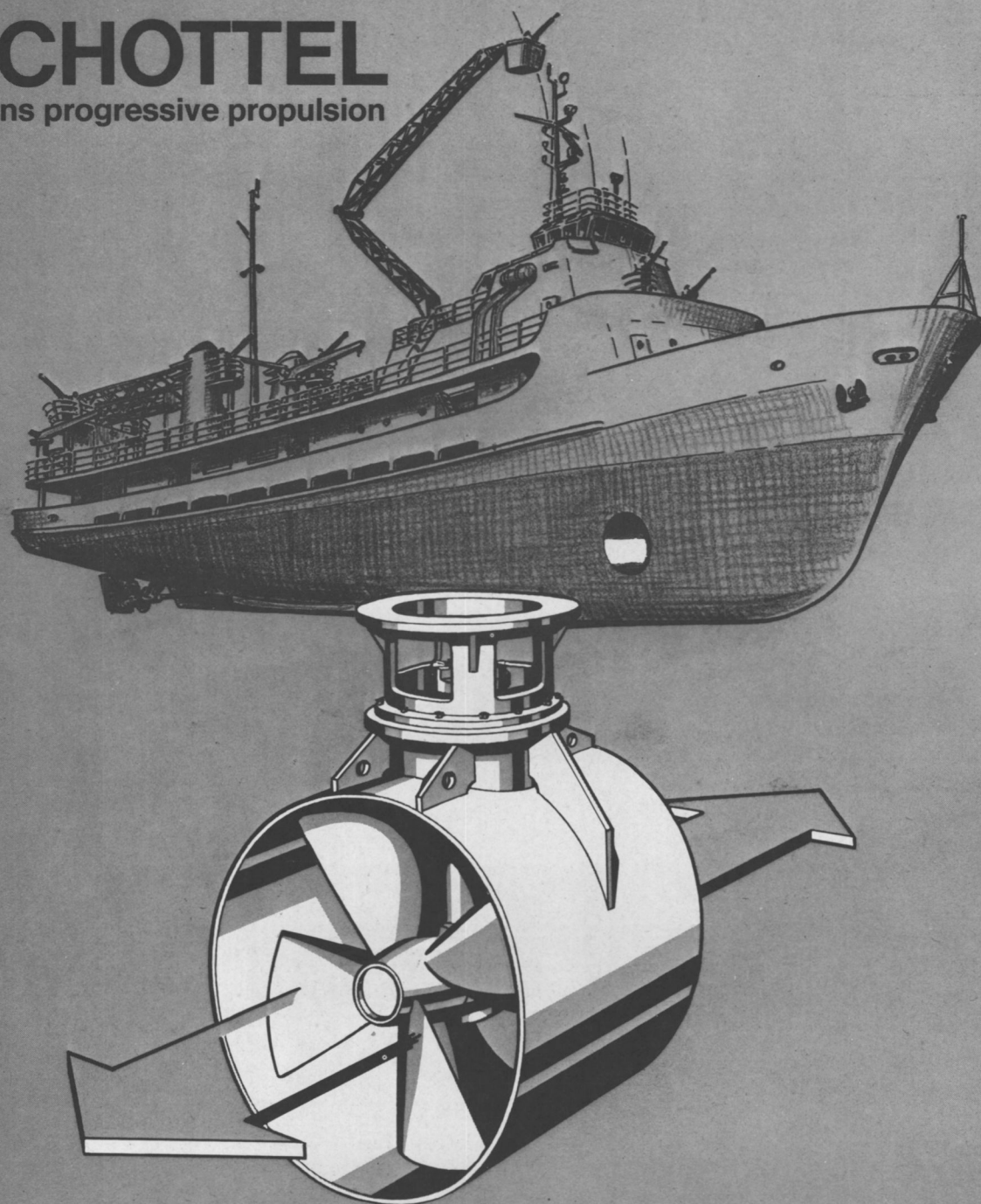
The orders include work for the U.S. Navy's nuclear-propulsion program. Currently included among the nuclear-powered ships in the Navy are submarines, aircraft carriers, and cruisers.

The work will be performed at the company's Navy Nuclear Fuel Division in Lynchburg, Va.

Babcock & Wilcox and its subsidiaries design, manufacture and market steam generating and associated equipment, steel tubular products, refractories, automated machine tools, and erect energy systems and components. B&W's annual shipments exceed \$1.8 billion. B&W is a wholly owned subsidiary of J. Ray McDermott & Co., Inc.

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Cargo Security Study Sponsored By Government

Cargo security at the Port of Oakland, Calif., is the subject of a pilot study by the public accounting and management consulting firm of Coopers & Lybrand, under U.S. Department of Transportation sponsorship.

The aim of the analysis is to assist the Port of Oakland in developing a strong loss prevention program to serve as a model for other U.S. ports.

The study will begin with an examination of current operations and management practices at the West Coast's largest intermodal port, focusing on liability patterns, areas of potential cargo loss and effectiveness of existing security measures.

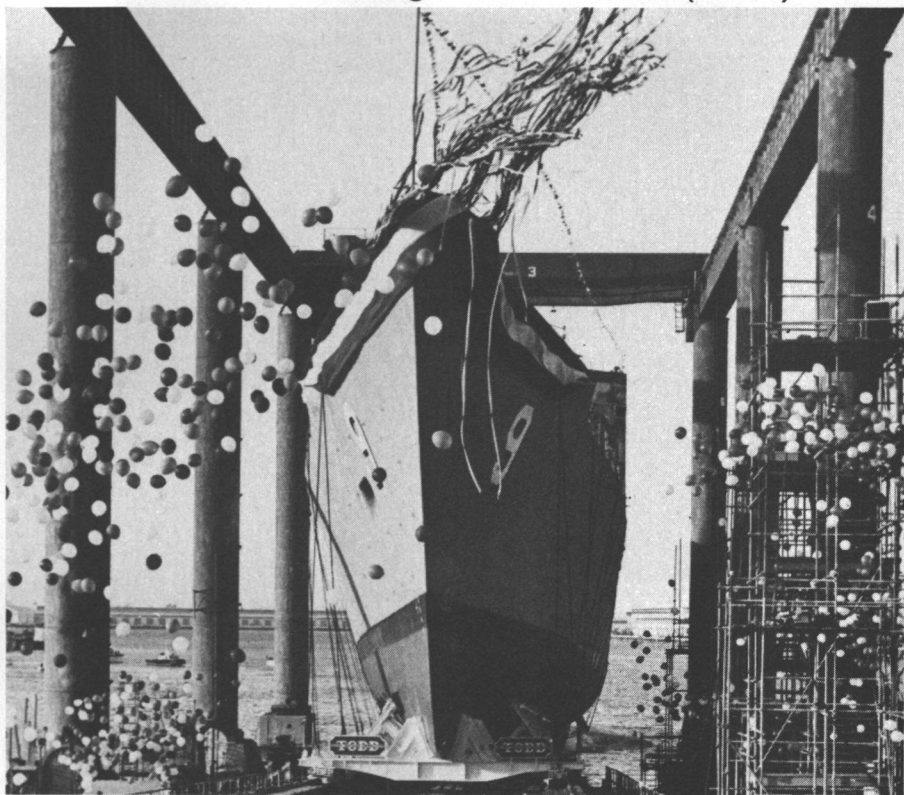
From these analyses, recommendations will be made for improvements in documentation and physical security procedures where necessary, particularly at points of intermodal interface—that is, where cargo transfers are

made among steamship, truck and railroad train—as well as acquisition of cost-effective cargo security hardware and enhanced coordination of security activities by federal, state and local agencies.

The Port of Oakland Cargo Security Study is being funded by the DOT under authorization of Executive Order 11836, which in 1975 required the Secretary of Transportation to assist the transportation industry by providing technical assistance and arranging demonstration projects relating to cargo security. Seaport terminal areas are the most critical element in the loss prevention equation, according to the DOT.

The Port of Oakland study, which began in mid-April, is being conducted by a team of management consultants from the Bay Area offices of Coopers & Lybrand. This team of consultants was formed to provide the necessary EDP, industrial engineering, systems analysis, security and facilities expertise to conduct the study.

Todd Pacific Shipyards Launches Guided Missile Frigate Wadsworth (FFG-9)



Wadsworth (FFG-9), shown sliding down building ways at Todd Pacific Shipyards Corp. Los Angeles Division, was launched 106 days ahead of contractual date.

Launching ceremonies were held at Todd Pacific Shipyards Los Angeles (Calif.) Division on July 29, 1978, for the Guided Missile Frigate Wadsworth (FFG-9). This was the first launching of FFG-7 Class vessels at this division, which currently holds contracts for a total of nine ships, and this significant event was completed 106 days ahead of the contractual date.

Todd Pacific's Seattle (Wash.) Division also has eight of this class frigate under contract. The Wadsworth is the third ship of the fleet named in honor of Commodore Alexander Scammel Wadsworth, USN.

She commemorates a name made famous in American destroyer history by the former destroyer USS Wadsworth (DD-60), flagship of the first division of American destroyers to the British Isles during World War I, and the former destroyer USS Wadsworth (DD-516), which earned seven battle stars and the Presidential Unit Citation for combat operations during World War II.

Alexander Scammel Wadsworth was born in 1790 at Portland, Maine. He was appointed midshipman on April 2, 1804, and promoted to lieutenant on April 21, 1810. He was the second lieutenant of the frigate Constitution during her escape from the British Fleet, and took part in the engagement with the Guerriere August 19, 1812, for which he received a silver medal and the thanks of Congress. He later commanded the Pacific Squadron 1824-36, was Navy Commissioner 1834-40, and was Inspector of Ordnance 1841-50. Commodore Wadsworth died at Washington, D.C. April 5, 1851.



John T. Gilbride, chairman, Todd Shipyards Corp., speaking at ceremonies preceding launching of Wadsworth (FFG-9).

The vessel is 445 feet in length overall, has a beam of 47 feet, a full load displacement of about 3,600 tons, and will carry a complement of 17 officers and 168 enlisted men.

She will be powered by two gas turbine main propulsion engines, driving a single controllable, reversible pitch propeller, and will be capable of speeds in excess of 28 knots. The Wadsworth will carry a single launcher for Harpoon and Standard Missiles, two antisubmarine helicopters, one 76-mm rapid fire gun, and two triple tubes for antisubmarine torpedoes.

The principal speaker for the launch ceremonies was the Honorable Glenn M. Anderson, U.S. House of Representatives, California, 32nd District. Congressman Anderson stressed that "the addition of this ship to the U.S. Navy is visible evidence, despite the claims of some, that we are not abandoning our Navy and relegating it to second or third class status." He also pointed out

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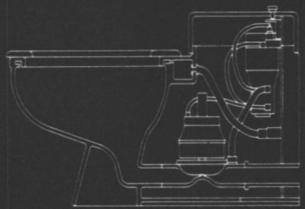
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that "the construction of the Wadsworth here at Todd Shipyard is another tradition I am pleased to see continue. It is indicative of the high regard in which this yard, its skilled shipyard workers, and its efficient engineering and management team are held by the Department of the Navy." These words reinforced those of **Stuart C. Jones**, vice president and general manager of Todd Pacific Shipyards Los Angeles Division, who in his welcoming remarks, had voiced his pride in the "skill, workmanship and dedication of . . . the (local) employees," and had stated that the day of celebration belonged to the employees more than anyone.

Other speakers at the event included **J.T. Gilbride**, chairman, Todd Shipyards Corporation; **Capt. James E. Kaune**, USN, Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Long Beach, Calif., and Rear Adm. **Edward J. Otth**, USN, Special Assistant for Shipbuilding Commander, Naval Sea Systems Command Representative.

Mrs. Patricia P. Roberts, great-great-great-granddaughter of Commodore Wadsworth, christened the ship. She was assisted by her mother, **Mrs. Rebecca Peacher**, great-great-granddaughter of the Commodore, who had christened the second USS Wadsworth (DD-516).

Stewart & Stevenson Announces Acquisition Of Dobbs Detroit Diesel, Inc.

Stewart & Stevenson Services, Inc., Houston, Texas, has announced the purchase of substantially all of the assets and certain liabilities of Dobbs Detroit Diesel, Inc., a General Motors Detroit Diesel Allison Distributor franchise encompassing most of the state of Colorado and parts of Wyoming and Nebraska. The business was acquired and will be operated by Rocky Mountain Power Services, Inc., a subsidiary of Stewart & Stevenson Services, Inc. The assets were acquired at a price, subject to adjustment, of approximately \$7 million, less the assumed liabilities of approximately \$850,000.

Joe Manning, president of Stewart & Stevenson, stated that growth prospects for the business appear extremely strong in the area. Last year, the franchise generated approximately \$11.5 million in sales, concentrating almost exclusively on the sale of parts and off-the-shelf engines, with limited emphasis on manufactured power systems. **Mr. Manning** noted that Stewart & Stevenson plans to invest the necessary capital to upgrade the service facilities and to increase manufacturing of custom engineered power systems.

Agri-Trans Names Miller Director Gulf Operations

David M. Miller has been named director, Gulf Operations for Agri-Trans Corporation, according to an announcement by **R.A. Wilson**, executive vice president and general manager.

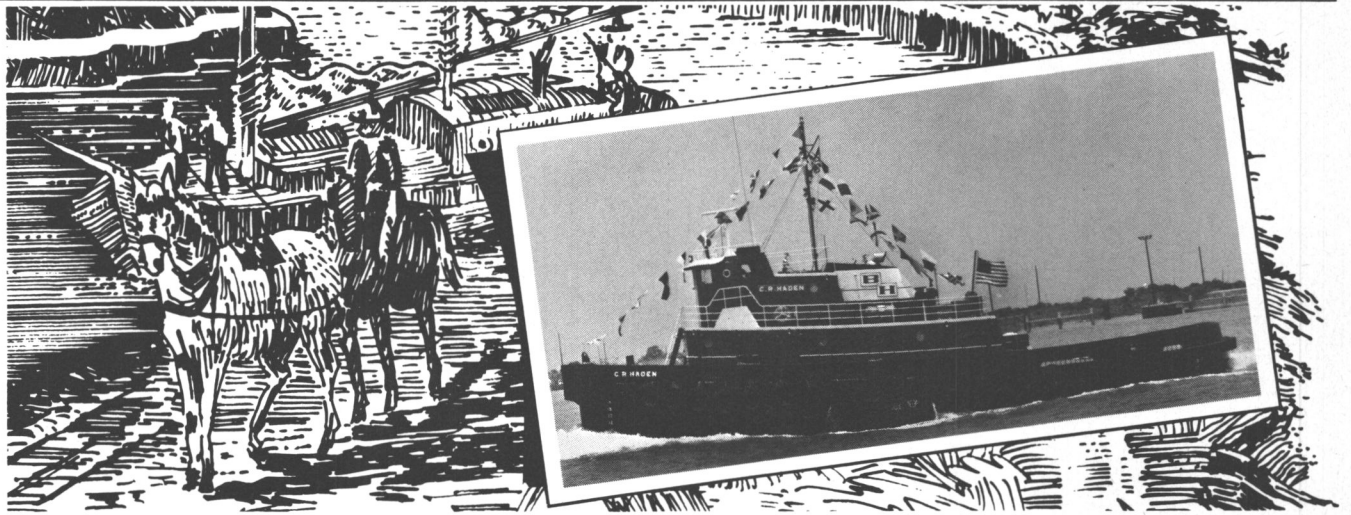
Agri-Trans is an interregional marine transportation cooperative

owned by five Midwest grain marketing cooperatives and a major cooperative fertilizer manufacturer. The company operates an extensive fleet of river barges on the inland waterways system.

Mr. Miller's responsibilities include Agri-Trans's fleet facilities and shipyard near Kenner, La. Additionally, **Mr. Miller** will be responsible for the operation of a 22,500-dwt oceangoing-inte-

grated tug/barge owned by CF Industries, a member-company of Agri-Trans.

A native of Benton, Miss., **Mr. Miller** joins Agri-Trans after holding a number of supervisory positions at the Donaldsonville (La.) Nitrogen Complex of CF Industries, Inc. CF Industries is responsible for the operations of Agri-Trans through a long-term management contract.



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Robert Hague Post Honors James A. Farrell Jr.

James A. Farrell Jr., chairman of the board, Farrell Lines Incorporated, has been named by the Robert L. Hague Merchant Marine Industries' Post, American Legion, to receive its Distinguished Service Citation. The award will be presented to Mr. Farrell on Saturday, October 21, 1978, at the Waldorf-Astoria Hotel in New York City.

It is fitting that the 30th annual guest be selected from a heritage of the sea. More importantly, he is from an American heritage of the sea. His Irish grandfather was a merchant, sea captain, and shipowner. His father, who subsequently became head of United States Steel Corporation, built up a fleet of steamships to transport the corporation's products to overseas markets. With his brother, he formed a U.S.-flag shipping company that

has endured and prospered since 1925.

A New York newspaper article in 1950 called the Farrell brothers "one of the most successful family teams ever to enter the maritime industry." John Farrell was a quiet reticent man who wished to avoid the limelight. Yet his knowledge of shipping and keen insight into its problems commanded the respect of all who knew him. James Farrell is one of the most active executives

along Shipping Row. He is an accomplished public speaker with a sense of humor and a gift of repartee.



James A. Farrell Jr.

Although born in Brooklyn, N.Y., James A. Farrell was raised and has lived in Connecticut most of his lifetime, where his grandfather settled in 1845. He received his bachelor's degree from Yale University and served as an officer in the U.S. Naval Reserve during World War II.

Because of his father's strong conviction that the African trade potential would prove itself, James and his brother John formed an American-flag shipping company in December 1925, continuing the family's seafaring tradition. American South African Line Inc. was the forerunner of the present Farrell Lines. The success of that venture is American maritime history.

In 1964, the Hague Post awarded James Farrell the American Merchant Marine Achievement Trophy for his significant contribution to the betterment of the American merchant marine. In 1977, he was pronounced "Admiral of the Ocean Sea," as the person who had done the most to advance the cause of American-flag shipping in that year. Early in 1978, he was honored for his efforts as chairman of the Friends of Seamen's Church Institute. A member of the Hague Post over 31 years, James Farrell was designated as a life member in 1977.

Lorentzen Shipping Names Barker Executive VP

Erik Nilsen-Moe, president of Lorentzen Shipping Agency, Inc., Miami, Fla., general agents for NOPAL Caribe Lines, has announced the appointment of Jack Barker as executive vice president.

Mr. Barker has traveled extensively worldwide as a shipping executive for the past eight years. He was formerly vice president of Harrington & Company, Inc., and before that he was an officer of the First National Bank of Chicago. He is a graduate of Grinnell College, Iowa, and attended Stetson University College of Law.

NOPAL Caribe Lines maintains an express trailer container service weekly to Puerto Cabello, La Guaira, Maracaibo and Guanta in Venezuela, and container service every 10 days to Aruba/Curacao and every 15 days to Martinique, Barbados and Trinidad.

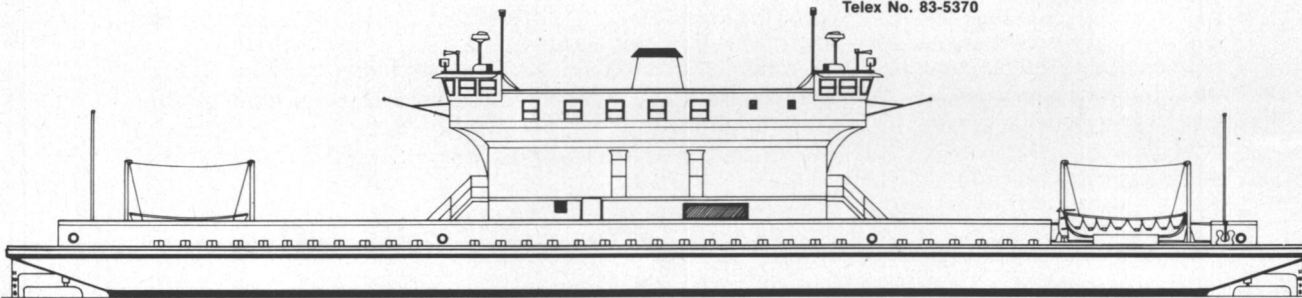
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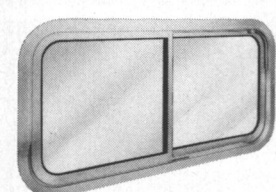
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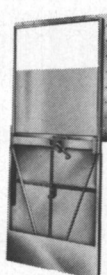


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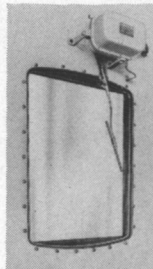
stand behind the world's finest shipboard windows, windshield wipers and doors by...



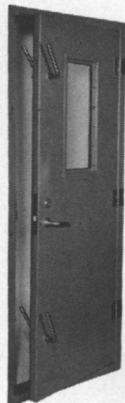
Sliding Window



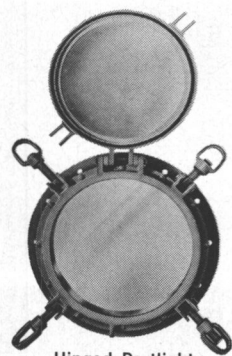
Crank-Operated Window



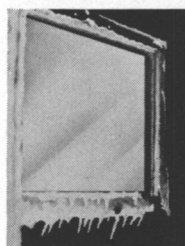
Window Wiper and Fixed Window



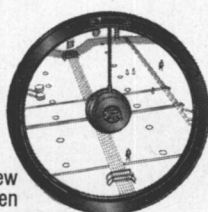
Weathertight Door



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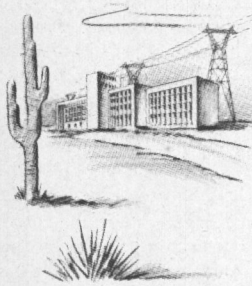
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Whether you're sitting in the middle of the Mojave Desert or three days out of New Orleans bound for Aberdeen...

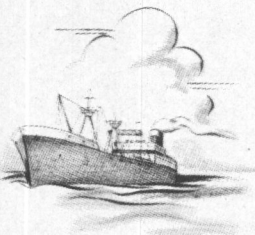
...here are some thoughts on fuel systems that could mean a lot to you

Smooth operation of your fuel system is as critical as any function on your ship. And when you're a thousand miles out of port, you are just as vulnerable as the fellow whose



power plant sits in the middle of the desert — there's just no way any equipment manufacturer's service crew is going to reach you as quickly as you need when you're in trouble. When difficulties arise the only resources you have to rely on are your own.

If you're lucky, the people who built your power plant thought about this long before-hand and specified major components of high reliability and maintainability. They understood that the idea of preventive maintenance actually extends back to the equipment manufacturer and starts long before a plant or ship is ever commissioned.

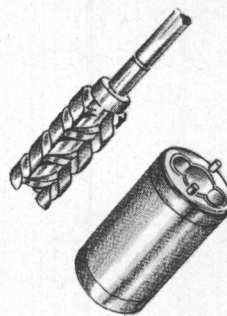


Ask anyone who ever served belowdecks

Marine engineers have known this for a long time, which is why you find IMO® pumps specified almost exclusively for engine room and fire room service in commercial vessels and both surface and underwater ships of the U.S. Navy. It's also why you will find that most men in your profession know that IMO pumps are some of the most reliable pieces of equipment you can find anywhere.

There are three basic reasons for reliability—the first is design

The three screws of an IMO pump are generated according to involute geometry, a thread form so precise that oil is moved axially with high volumetric efficiency but without significant metal-to-metal contact between the screws. Nor is there metal-to-metal contact between the screws and their housing. A hydrodynamic oil film supports them in their bores just like journals. Thus, little friction and wear develop *anywhere* in an IMO pump. And because there are no radial bending loads and axial loads are balanced hydraulically, there is little that ever goes wrong with it beyond an occasional seal needing replacement.



The second reason is manufacturing

Rotors in IMO pumps from Delaval are deep-nitrided to R_c 55/60. This heat treatment is entirely different from surface improvement techniques which do not provide a case-hardened surface. Rotors are then thread-ground for maximum accuracy and to compensate for distortion under load. Expedients like lapping can't accomplish this and can even introduce running interference. As for the rotor housing bores, Delaval expends as much care on them as on the rotors. All three bores are broached simultaneously to give consistently accurate clearance and optimum surface. What these fea-

tures all add up to is greater pressure capability, greater margin when handling low viscosity fuels or running at elevated temperatures, and most of all, less wear, longer life, fewer troubles.

A third reason is maintainability

All Delaval IMO pumps recommended for fuel service incorporate replacement rotor housings within a permanent case. If you ever do have trouble with a pump, you don't have to throw out the baby with the bath water. You can do repairs quickly without renewing external casing. (The separate housing within the casing is also an extra safety feature.)

When you are at sea, knowing that fuel in your power plant is moved by IMO pumps gives a man a secure feeling. It's good to know, too, that when you're in port, a local Delaval representative is only as far as your telephone. Call him whenever you want information about any aspect



of specifying, using or maintaining Delaval IMO fuel pumps. Or if you want, write directly to IMO Pump Division, Delaval Turbine Inc., POB 321, Trenton, NJ 08602, or call 609: 587-5000.

For 46 years Delaval has been making IMO pumps for practically every marine fuel: Bunker C, NSFO, Navy distillate, crude, JP-5, residuals and blends. Delaval IMO pumps have been proven in steam plant burner and transfer service, gas turbine fuel injection, and diesel engine fuel service. That's a long, long record of reliability.

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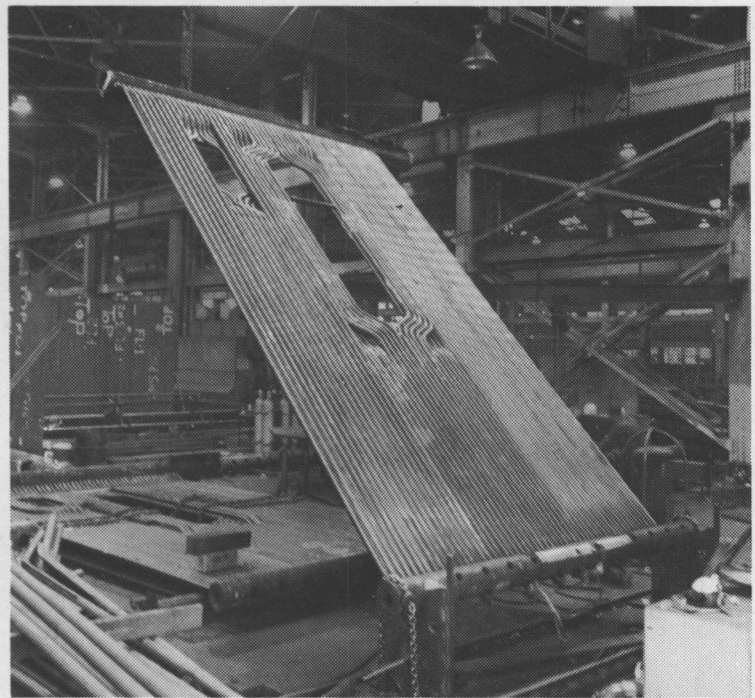
Our customers will tell you how they feel about our fully assembled boilers. **Satisfied.**

Supplying a knocked-down or sub-assembled boiler is a complex job. And supplying a fully assembled one is even tougher.

That's why we're proud of our track record. Over the years, we've satisfied many customers by supplying boilers in all stages of assembly.

Including fully assembled—which offers you the benefits of reduced storage space and materials handling, savings of time and money, and single source responsibility.

If you prefer to assemble your boilers, we can furnish you with furnace sub-assemblies which can



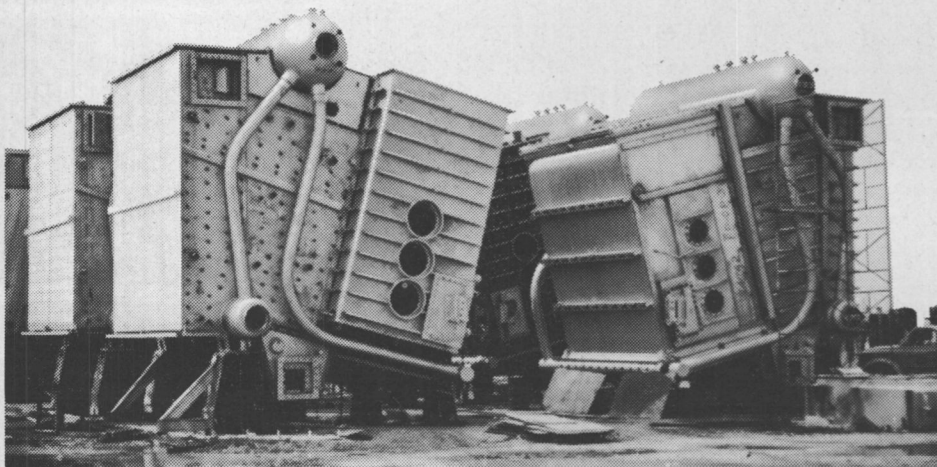
Sub-assembled furnace wall, utilizing welded wall construction.

significantly reduce your field assembly time and expense.

If you want an assembled boiler delivered successfully, economically and on time, call us.

We'll tell you the names of our satisfied customers. When you learn how well we did the job for them, you'll get a good idea of the job we'll do for you.

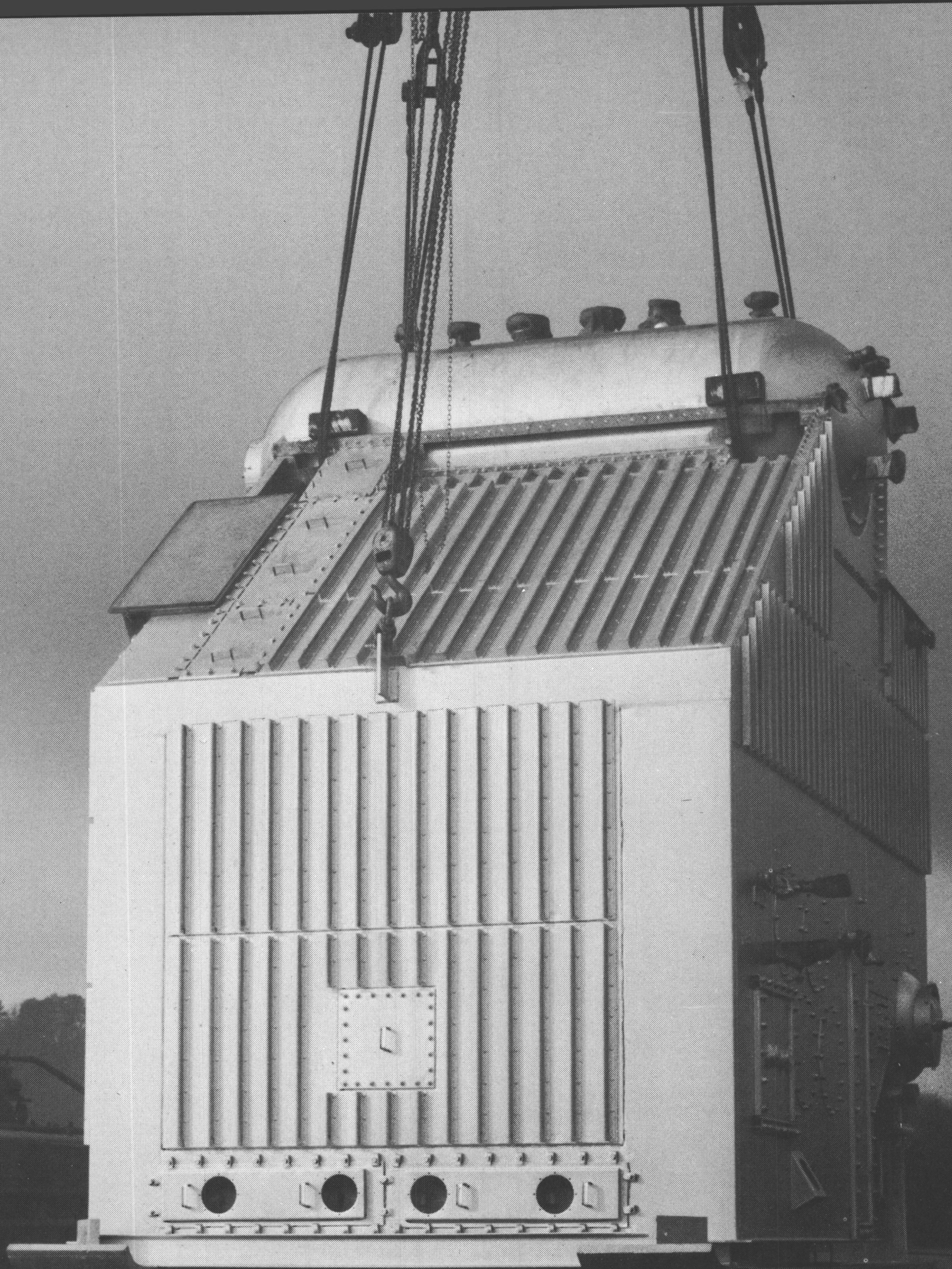
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Uniflite Awarded \$3.2-Million Navy Contracts For Target Boats

The U.S. Naval Sea Systems Command has awarded two contracts with the aggregate value of \$3,244,414 for construction of 33 radio-controlled target boats and repair parts to Uniflite, Inc., fiberglass boat and yacht manufacturer headquartered in Bellingham, Wash., with a second plant at Swansboro, N.C., according to **John L. Thomas**, Uniflite president.

Mr. **Thomas** said that one contract valued at \$3,033,884 is for 23 SEPTAR MK 35 fifty-six-foot target boats, each powered with five 330-hp Mercruiser inboard engines and rated for minimum speeds of 35 knots. These boats, designated by the Navy as 56-footers, meas-

ure 54 feet 8 $\frac{3}{4}$ inches length overall, 13 feet 7 $\frac{1}{4}$ inches beam, and have a displacement of 36,000 pounds.

The other contract, valued at \$210,530, is for 10 SEPTAR MK 33 eighteen-foot target drones powered with single 225-hp Chrysler inboard-outboard engines for minimum speeds of 40 knots. Specifications are: 18-foot 1-inch length overall, 7-foot 4-inch beam, and displacement of 2,500 pounds.

Delivery on both contracts will be during the next 12 months to the Pacific Missile Test Center at Point Hueneme, Calif., for use in shipboard and airborne missile weaponry practice to evaluate weapons and controls systems on ranges off southern California, Hawaii, and in the Caribbean.

Mr. **Thomas** explained that the Navy's in-

tention is not to destroy the target boats, but to record a "direct hit" when the projectile lands within a specified number of degrees from the target with the "sights" compensated to that extent.

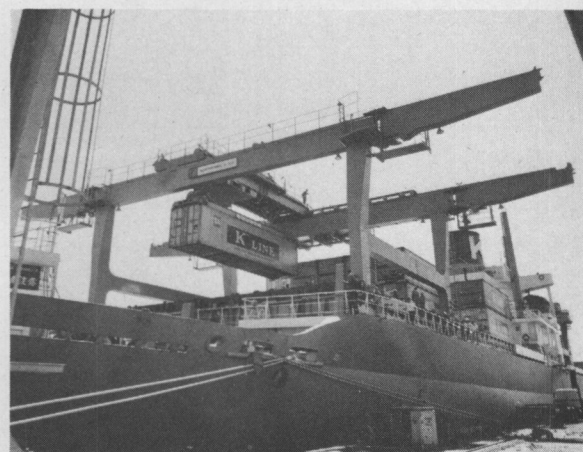
The largest builder of fiberglass boats for the U.S. Navy since the early 1960s, Uniflite has built approximately 3,000 craft, 14-56 feet, for the U.S. Navy and other U.S. and foreign governmental agencies.

The publicly held company, listed over-the-counter (OTC), is also a leading manufacturer of fire-retardant fiberglass recreational yachts, 26 to 42 feet, and commercial and patrol craft to 53 feet. It also builds the Valiant line of auxiliary-powered cruising sailboats on contract for Valiant Yacht Corp., Seattle, Wash.

All Uniflite-built nonmilitary boats are classified and labeled by Underwriters' Laboratories (UL), attesting to the strength and fire retardance of their fiberglass hulls.

Avondale Shipyards Order Two Paceco Shipstainer Cranes

Paceco, Inc., a subsidiary of Fruehauf Corporation, Alameda, Calif., recently received an order for two 30 Long Ton Shipstainer® cranes from Avondale Shipyards, Inc., Avondale, La. The two shipboard cranes will be used on LASH vessels for Waterman Steamship Corporation.



Paceco Shipstainer cranes for Avondale/Waterman will be similar to those built by Paceco for K-Lines.

An outstanding feature of the Shipstainers is their capability of unique handling of 62-ton hatch covers. The covers can be guided and stored by full control of the crane operator, eliminating the need for hydraulically operated hatch covers.

The cranes are capable of discharging or loading 20-foot/40-foot containers from wharves located on either side of the ship. An anti-sway reeving system will speed the handling of the containers.

Scheduled for delivery in late 1979, the cranes will be fully assembled and individually barged to the Avondale shipbuilding site. Manufacturing is being done by Paceco's Gulfport, Miss., plant.

Wartsila To Build Five Soviet Salvage Vessels For \$63 Million

Wartsila Shipyard, Helsinki, Finland, will build five salvage vessels for the Soviet Union in 1978-80. The value of the contract is over 250 million marks (U.S. \$63 million). The ships are designed to work as auxiliary craft for fishing vessels in Arctic regions. They have sturdy ice reinforcement and are capable of operating independently in ice $\frac{1}{2}$ meter thick (about 1.6 feet). The length of the units will be 70 meters (about 230 feet), and width 18 meters (approximately 59 feet). Their equipment will include four cranes and several foam guns.

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

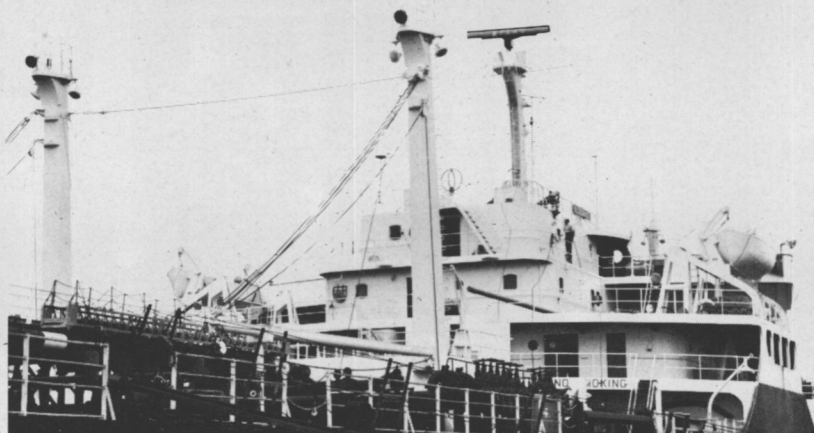
Plotting is made easy by parallax free flat reflection plotter, digital 10 minute plot clock and Speed/Time/Distance table. Precise and fast range and bearing measurements displayed on digital readouts make careful target evaluation simple. Threatening target is kept under surveillance by gyro-stabilized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

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

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

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

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



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

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

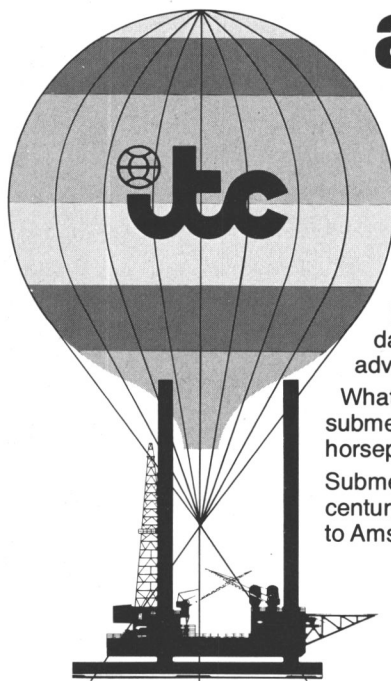
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COMPANY _____ PHONE _____

CITY _____ STATE _____ ZIP _____

TYPE OF VESSEL(S) _____

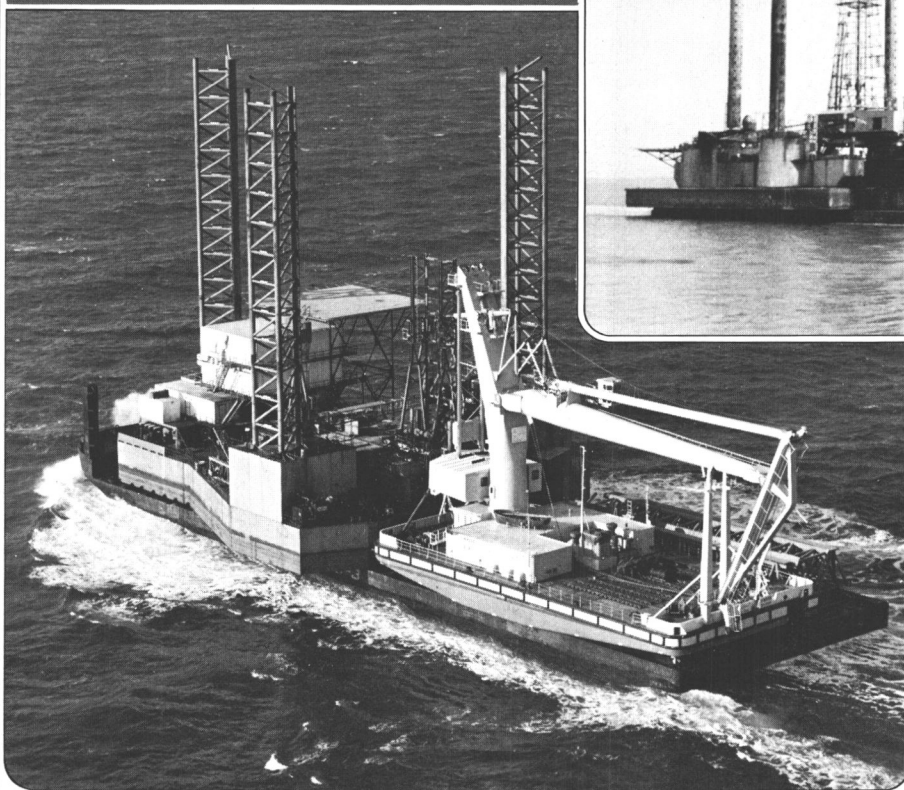
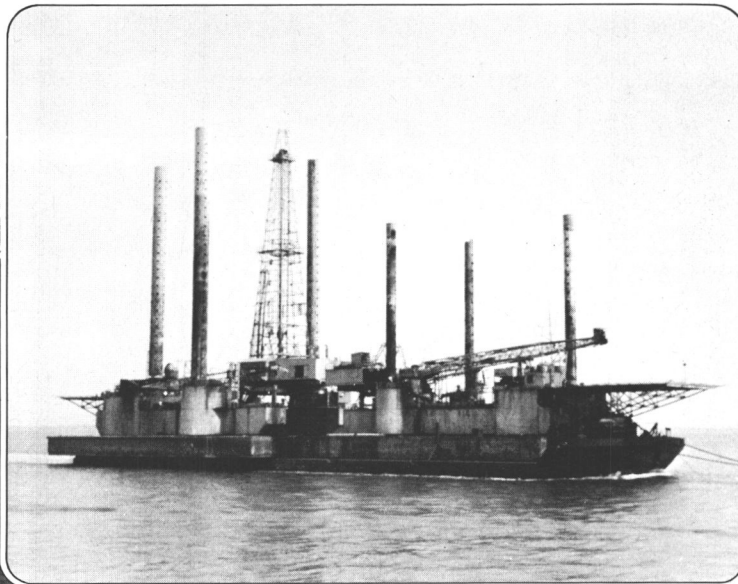
Rising to the occasion and meeting your demands



Awkward as drilling rigs may be, dry towing is the answer to transporting them from one location to another. This unique system, which was practically re-invented by International Transport Contractors Holland b.v., imparted fresh impetus (and another dimension) to heavy ocean towage. Higher towing speed, with a consequent saving in time; reduced risk of damage; greater safety; and lower insurance premiums: these are the advantages of the dry towing method.

Whatever your equipment, wherever it has to go, ITC, with their fleet of nine submersible barges of up to 21,500 tons and twelve oceangoing tugs of up to 15,000 horsepower, will take care of the problem.

Submersible pontoons were already being used in the Zuyder Zee in the 17th century, to assist large, heavily laden sailing ships to navigate the shallows en route to Amsterdam.



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ITC-D-2

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Telex 41865

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Town and Country Office Park
908 Town and Country Boulevard
Suite 224, Houston, Texas 77024, USA
Telephone (713) - 932 - 6604
Telex 762506

Singapore

Room 1803-a, 18th floor,
Marina House,
70 Shenton Way, Singapore 2
Telephone 2219955*
Telex 25510

'Ocean Trade And Transport Of Phosphate Rock'

In common with most other bulk commodities, the seaborne trade of phosphate rock has been adversely affected by the prolonged world economic depression which followed the "oil crisis" of 1973. This was most apparent in 1975 and 1976, when shipments fell to 26 percent below the peak level of 50 million tons attained in 1974. During 1977, however, there was a marked improvement in the state of the phosphate rock market, and seaborne shipments rose to total 44.1 million tons. This was a 19 percent increase over the level recorded in 1976. The object of "Ocean Trade and Transport of Phosphate Rock"—No. 65 in a series prepared by H.P. Drewry (Shipping Consultants) Limited—is to review both the development of trade as a whole and the future pattern of phosphate shipments within the regional markets, as well as the ocean transportation of phosphate rock.

The recent upward trend in the level of phosphate rock shipments is expected to continue. In fact, it is estimated, based on regional imbalances in phosphate supply/demand and the knowledge of intra-area exchanges, that world seaborne trade in phosphate rock will increase to some 58 million tons by 1980, and 72 million tons by 1985. However, despite the forecast increase in the volume of trade, the actual pattern of trade is not expected to alter significantly over the next eight years.

The consumption of phosphate is heavily concentrated in the developed countries, with over half being consumed in Europe and some 20 percent in North America, and it is, therefore, these areas that dominate phosphate rock demand. Demand in Europe is expected to increase by almost 50 percent by 1985, with Eastern European demand increasing the most to total over 40 million tons.

Very substantial growth is forecast for Asian countries and is projected to rise by 80 percent to reach over 24.0 million tons by 1985. North American demand is expected to increase slowly due to the already advanced agricultural techniques, low population growth, etc. Latin America and Africa at present constitute a relatively small market for phosphate rock, but the greatest proportional increases in demand are forecast for these areas. World demand for phosphate rock is expected to rise to around 130 million tons by 1980, and will have reached almost 160 million tons by 1985.

Practically all phosphate rock now entering seaborne trade is shipped loose in bulk, and because of its handling characteristics can be shipped in virtually any type or size of bulk carrier. However, the relatively short shipping distances involved in phosphate rock trades, combined with the draft limitations and the general lack of suitable storage capacities and inadequate handling facilities associated with ports where phosphate rock is

loaded or discharged, have meant that the vessels employed in the phosphate rock trade are predominantly general-purpose, geared vessels of between 25,000 dwt and 50,000 dwt. The wide distribution of the world phosphate rock trade among ports which are poorly equipped or have too small a throughput to encourage improvements, is the principal reason why the smaller ship sizes are expected to retain an important although diminishing share of this trade through to 1985. The expectation is that bulk carriers of between 20,000 dwt and 50,000 dwt will be employed far more extensively than the larger ships. The share of total trade attributed to vessels below 20,000 dwt will be reduced to less than a third by 1985 as a result of their gradual replacement by larger bulk carriers.

As well as reviewing the development of trade and the future pattern of phosphate shipments, "Ocean Trade and Transport of Phosphate Rock" examines the present pattern of trade on a regional basis and inter-area matrices of seaborne trades are presented for the years 1975-77. The supply of phosphate rock is examined by means of a country-by-country review which provides an insight into expansion plans. Particular emphasis is placed on the ocean transportation of phosphate rock, and separate sections have been devoted to the types and sizes of ship employed, transport costs and ports handling this fertilizer raw material. An appendix which lists phosphate rock loading ports, with information on draft limits, etc., is also provided.

"Ocean Trade and Transport of Phosphate Rock," No. 65 in a series of reports on various aspects of shipping prepared by the Research Division of HPD Shipping Publications, 34 Brook Street, Mayfair, London W1Y 2LL, England, is available at a single copy rate of U.S. \$85 (all overseas orders) or £35 (U.K. only), or on a subscription basis U.S. \$325 (all overseas orders), or £135 (U.K. only) for the series 61-70.

William Lepird Named Loran Manager For IDM

William Lepird has assumed the responsibility for the ITT Decca Marine Loran products, as product manager for the company.

Mr. Lepird was previously associated with NCR Systems, Sperry, General Dynamics and Martin Marietta. He has a long record in the technical and applications aspects of Loran products, as well as product management. He will be serving the market on all facets of Loran products, both at IDM's Palm Coast, Fla., main office and on location out in the field.

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

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Specialist for crankshaft repairs on board. Mobile equipment for boring, milling, grinding and honing on site.
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Salen & Wicander Opens Office In United States

Salen & Wicander AB of Stockholm, Sweden, has announced the formation of an affiliated company in the United States to be known as Salwico, Inc., with offices at 77 River Street, Hoboken, N.J. 07030, phone (201) 420-0040. The new company will be under the direction of **Jack C. Ellsworth**, president. Mr. Ellsworth was formerly vice president of Penco Division, Hudson Engineering Co. for 13 years, and previously sales manager of Aqua-Chem, Inc. for six years.



Jack C. Ellsworth

Salwico, Inc. will be responsible for sales and service in the United States and Canada of Salen & Wicander AB products such as GUNCLEAN Tank Cleaning Equipment, which is also suitable for crude washing in accordance with IMCO requirements, and the Salwico Oil Pollution Monitor for ballast and bilge water oil content monitoring; also, NEPTUMATIC Waste Water & Sewage Treatment Systems, and PPMATIC Bilge Water Oil Separators which feature a unique, nonconsumable filter material.

Salwico, Inc. will also market the HOWDEN Inert Gas Systems, SAAB Sum-21 for measuring ullage of cargoes aboard ships, and the SIWERTELL Ship Unloader, featuring a vertical screw conveyor with a patented counter rotating feeder unit.

Zapata Corporation Announces Senior Management Promotions

Zapata Corporation, Houston, Texas, has announced that **Ronald C. Lassiter** has been elected president and chief operating officer of the company. The company said that **William M. McCune** has been named an executive vice president.

Zapata said that its mining, fishing and shipping divisions will report directly to Mr. Lassiter, who most recently served as the company's senior executive vice president-natural resource products. Mr. McCune, formerly Zapata's senior vice president-construction, will report to Mr. Lassiter, with responsibility for the company's offshore drilling, marine service, and construction operations.

In announcing the promotions, **William H. Flynn**, Zapata chairman and chief executive officer,

said the naming of Mr. Lassiter as president will consolidate the company's businesses under one chief operating officer.

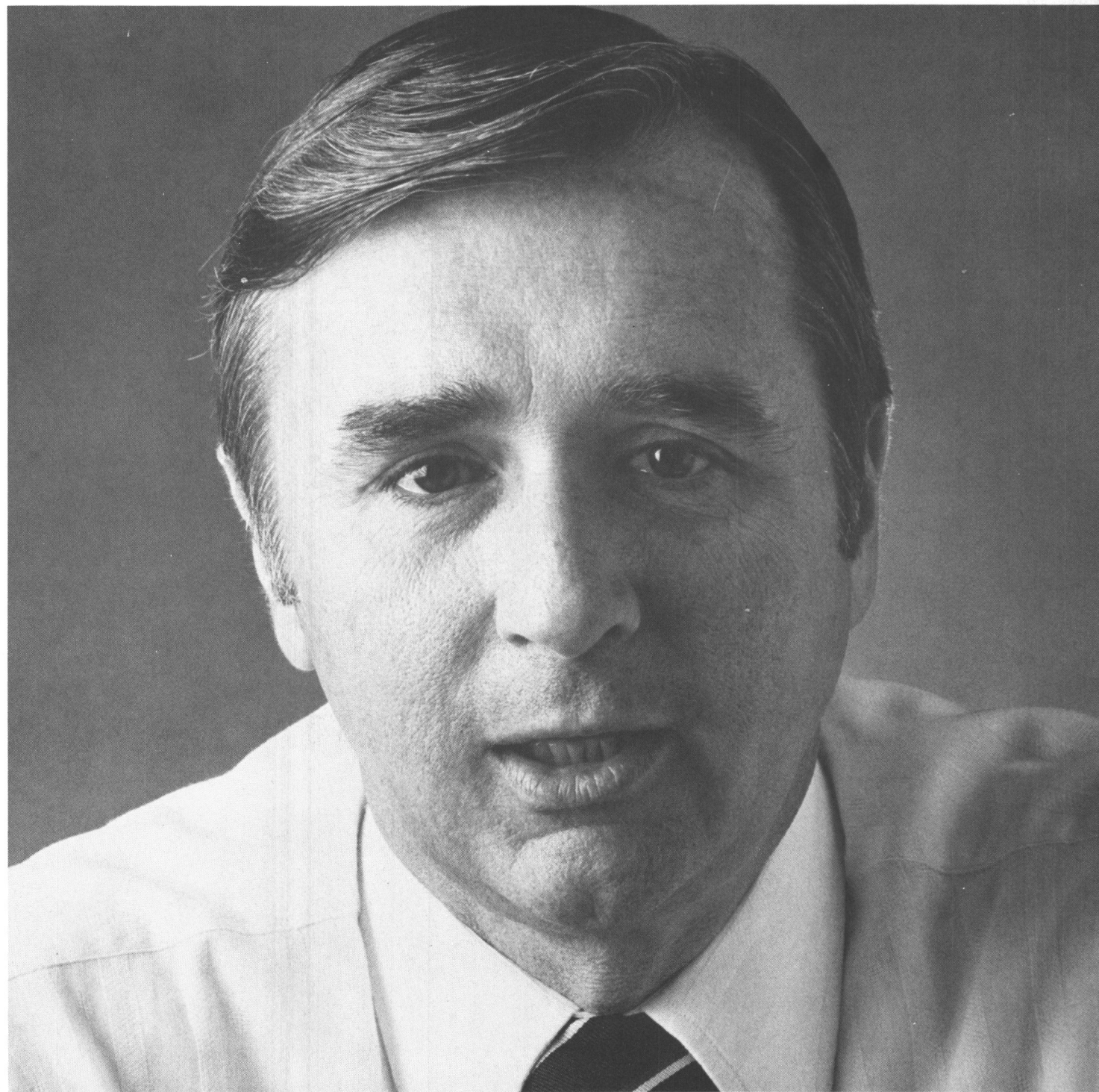
Mr. Lassiter joined Zapata in 1970 as senior vice president-corporate development. He was named executive vice president in 1971, and became a director and chief operating officer of the natural resource products group in 1974. A native of Houston, Mr.

Lassiter holds a B.A. degree from Rice University and an MBA degree from Harvard Business School.

Mr. McCune has been associated with Zapata's principal construction subsidiary and its predecessor companies for 30 years. He has been president of Zapata Constructors, Inc. since 1971, the same year in which he was named a vice president of Zapata Corpo-

ration. Mr. McCune is a native of Los Angeles, Calif.

Zapata Corporation (NYSE) provides diversified natural resource services and products around the world. Its businesses include offshore drilling, marine services, petroleum exploration, bulk shipping; coal and copper mining; menhaden, anchovy and tuna fishing; and construction and dredging.



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

"We think there's a better way to protect shipments than relying on buyer's insurance."

"We caution our clients not to rely on their buyer's insurance for their cargo shipments, because they have no control over it. Sure, it's easier sometimes, and there may be less paperwork. There's no problem until there's a loss. Then there might be all kinds of problems. You never know what's on the receiving end as far as insurance goes or what the terms and conditions are. It can be a big hassle in both time and money. From that standpoint, we can help our clients eliminate those hassles and make sure they have the best coverage available—from transit to warehousing to profit protection."

Working from a client's point of view is our way. That means working as allies, solving business problems together. Allies such as Vern Gust, chairman of our National Marine Group. In over 110 cities here and overseas, our local Marine Coordinators

have both the know-how and the access to all regular and specialty markets to put together any marine program you may require. Our coordinated operation brings clients up-to-the-minute counseling in every area—from collision liability to pollution laws, from subrogation and recoveries to product packaging, from bumbershoots to deductibles.

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

**Alexander
& Alexander**
The Allies

J. Leslie Goodier Joins Battelle In Marine Technology

Battelle, Pacific Northwest Laboratories, Office of Hazardous Materials Research, 2030 M Street, N.W., Washington, D.C. 20036, has announced that **J. Leslie Goodier, P.E.**, recently joined the organization where his activities will be directed toward marine technology, spill prevention, spill

containment and countermeasure action. Mr. Goodier has extensive experience in dredging operations including pre-site surveys, environmental control techniques, after operation water monitoring, and the utilization of dredges for the effective removal of contaminated harbor sediments. He was formerly with Arthur D. Little, Inc., Engineering Consultants; United Technologies Research Laboratories, Marine Technology Section; and the U.S. Department

of Interior, Bureau of Mines Marine Mineral Technology Center. He was also a casualty insurance surveyor with The Travelers Insurance Company, and an engineering officer in the Royal Navy.

Mr. Goodier is a registered professional engineer and a member of The Society of Naval Architects and Marine Engineers, the American Institute of Mining Engineers, and the American Society of Safety Engineers.

Charles G. Kiskaddon Named President Alcoa Steamship

Alcoa Steamship Company, Inc., Two Pennsylvania Plaza, New York, N.Y. 10001, wholly owned subsidiary of Aluminum Company of America, has named **Charles G. Kiskaddon Jr.** as president. Mr. Kiskaddon succeeds **George C. Halstead**, who died in London on April 11 during a business trip.



Charles G. Kiskaddon Jr.

Mr. Kiskaddon is a native of Pittsburgh, Pa., and a 1945 graduate of Columbia University with a Bachelor of Science degree in mechanical engineering. Following World War II Navy service as a lieutenant (jg) in the Pacific Theater of Operations, he joined Alcoa in 1946 and was assigned to the New York office as a sales engineer.

In 1957, Mr. Kiskaddon moved to Pittsburgh to become industry manager-passenger automotive sales. Subsequently, he was assistant district sales manager, Cleveland, Ohio, and district sales manager in Newark, N.J., and Chicago, Ill. He returned to Pittsburgh in 1972 as assistant general manager-field sales. Since 1974, he has been Alcoa's general manager-marketing primary products.

Point Marine Applies For Title XI To Build Two Tug/Supply Vessels

Point Marine, Inc., P.O. Drawer 2120, Morgan City, La., has applied for a Title XI guarantee to aid in financing the construction of two twin-screw tug/supply vessels. The vessels will be built by Halter Marine, Inc., New Orleans, La.

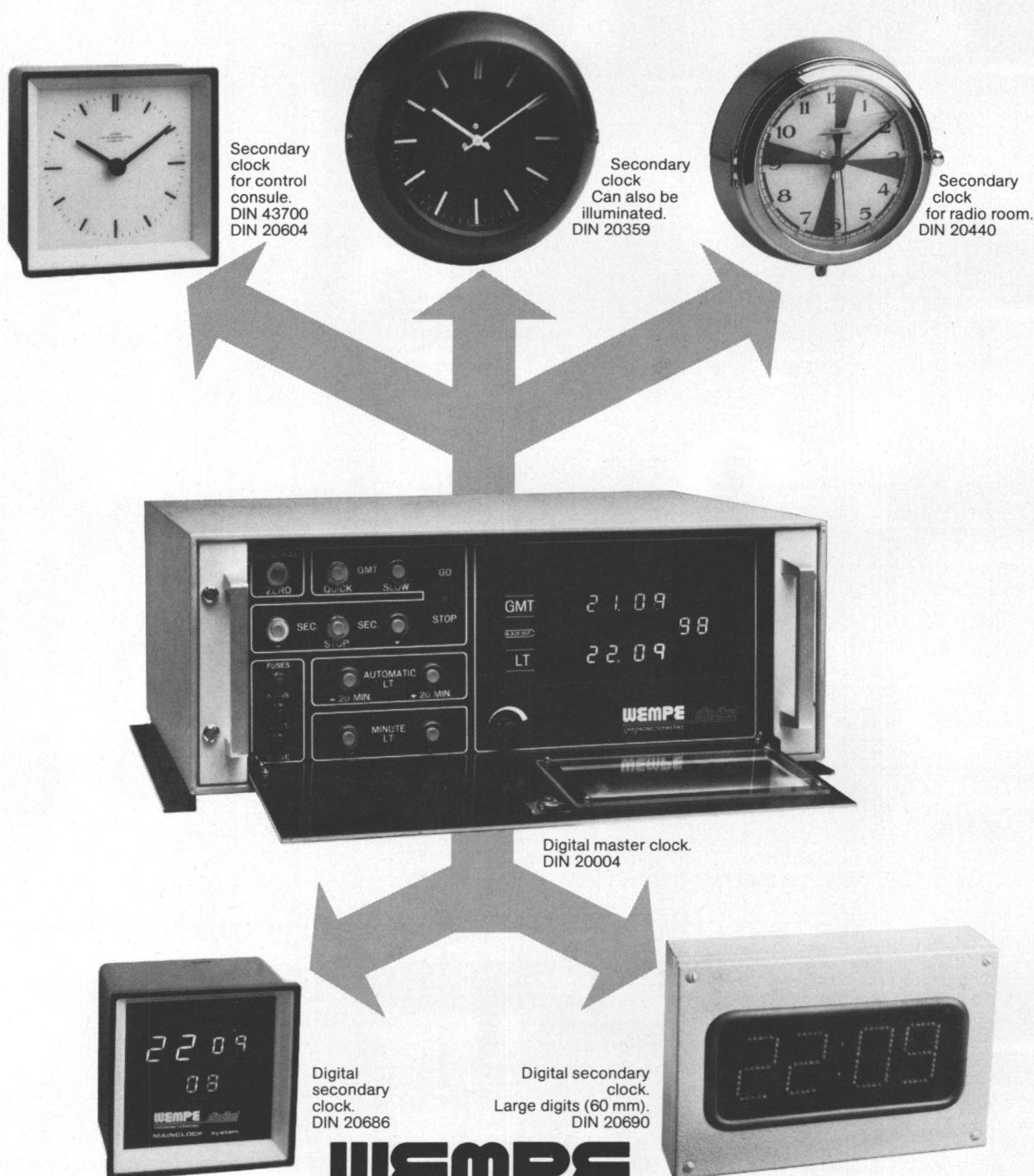
The two vessels are designed principally to support the petroleum industry's offshore exploration of oil and gas fields. Specifically, they will be used to relocate movable offshore drilling platforms, and to transport crews and supplies between the platforms and shore. The applicant states that the vessels will be used in domestic and foreign waters.

Each of the vessels will measure 190 feet by 40 feet by 14 feet, and will have 4,000 total continuous horsepower. The Title XI guarantee would be for \$4,506,250, which represents 87½ percent of the estimated actual cost of the two vessels.

Now you can be sure that all the clocks on board will show the same time.

There is only one ship's time – and no room for disagreement. To ensure accurate time-keeping, our master clock transmits impulses to all the other clocks on board, making sure that they all show exactly

the same time. After all, this is essential for automation on your ship. For time that you can count on, choose a Wempe digital master clock. And if you should need any advice, just give us a call.



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John J. McCarthy Joins Waukesha Engine Div. Dresser Industries, Inc.

John (Jack) J. McCarthy has joined Waukesha Engine Division, Dresser Industries, Inc., Waukesha, Wis., as director of domestic field sales.

In this position, Mr. McCarthy is responsible for the division's distributor organization and regional sales offices in the United States and Canada. He reports to Peter C. Trombley, vice president of marketing.



John J. McCarthy

Mr. McCarthy comes to Waukesha Engine with 13 years' experience in diesel engines with Alco Power, Inc., Auburn, N.Y. For the past five years, he was regional manager, active in the marketing of diesel engines and parts for marine generator and propulsion sets, utility generator sets, dredge pump equipment, and large off-highway traction equipment.

Prior to his work at Alco, he was an application engineer with Westinghouse International, New

York City, traveling extensively in the United States and abroad.

Waukesha Engine Division is a manufacturer of heavy duty diesel and gas engines for the petroleum, marine, off-highway vehicle and power generation markets.

Iotron Corporation Introduces Automatic RPM/Speed Converter

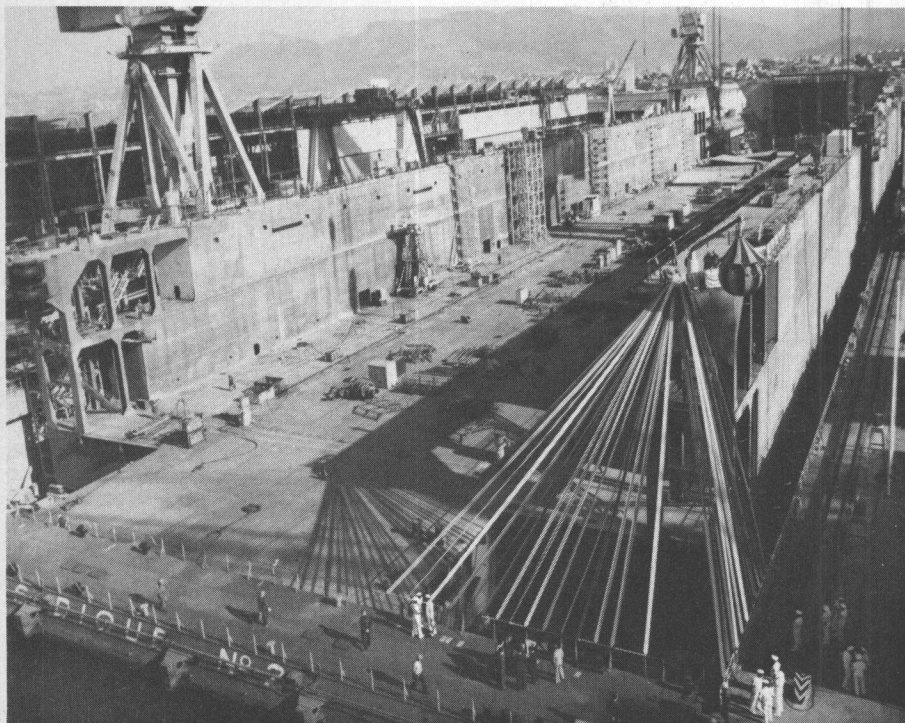
An inexpensive, easily installed RPM/Speed Converter Unit has been introduced by Iotron Corporation of Bedford, Mass. It provides a digital readout of ship's speed with an accuracy which approaches that of a conventional log at about one-tenth the price.

Originally designed to provide speed inputs to the Iotron DIGI-PLOT® fully automatic radar plotter when a ship's log is not available, this speed indicator is now available as a separate unit which can be used to automatically supply ship speed information to either a true motion radar or navigation system.

The compact unit can be connected quickly and easily to the bridge RPM indicator, and it provides a standard 200-pulse-per-mile output. It is designed to be mounted separately or as part of the bridge control console. The bright LED numerals assure easy visibility of ship speed to bridge personnel under all light conditions.

For a complete description and prices, write to L.M. Pearson, Iotron Corporation, 5 Alfred Circle, Bedford, Mass. 01730.

Norshipco's Huge Drydock Launched



The Norshipco Titan, shown above, the largest floating drydock to serve the East Coast, has been launched in Rio de Janeiro. It is expected to be delivered to the Norfolk Shipbuilding & Drydock Corp. Berkley Yard, Nor-

folk, Va., in December. The huge steel drydock is 950 feet long, 160 feet between wingwalls, and has a lifting capacity of 58,000 long tons. It was christened by Mrs. Jane P. Roper, the wife of Norshipco president John L. Roper III.

Fleet Operator Develops Heavy Duty Tachometer

A heavy duty tachometer for reliably accurate reading of engine and shaft speeds is now available. Called the TaCHRONitor®, the instrument was developed by the operator of a fleet of river and coastal vessels and has proven its ability to retain accuracy in the face of extremes in moisture, vibration and air temperature. En-

gine and shaft speed measurements are displayed by large digital numerals which can be read at a distance of 30 feet. Unique circuitry eliminates fluttering numerals. No field calibration is required during installation, which is said to be extremely easy.

For information, write to C.L. Thompson, National Marine Service Incorporated, 827 Hanley Industrial Court, St. Louis, Mo. 63144.

Micro=Lam® Scaffold Planking

LONGER. STRONGER. PROVEN ON BIG, TOUGH JOBS!

MICRO=LAM is a laminated wood plank that's tough, reliable and stiff. In deflection, it tests 29% stiffer than Douglas Fir scaffold planking, which means important additional stability. It meets OSHA standards and is used extensively by contractors, ship builders and off-shore rig builders.

With less than 12% moisture content, MICRO=LAM reduces drying checks and end splitting,

giving your planks uniform weight and longer life. Every plank is factory proof-tested for required strength before shipping.

MICRO=LAM planking is easy to handle and quick to erect with minimum manpower. Fire retardant treatment is available.

The MICRO=LAM billets are manufactured in 24" widths and up to 80-foot continuous lengths in three thicknesses (1½", 1¾" and 2½"). These billets are then cut for planking to the exact length and width you require.

Large volume orders can be handled quickly.

For product samples, price quotations or more information contact: Trus Joist Corporation, Dept. B, Box 60, Boise, Idaho 83707, Tel. (208) 375-4450.

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Mail to: Trus Joist Corporation
Dept. B, Box 60,
Boise, Idaho
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TRUS JOIST CORPORATION

Peoples' Republic Of China

Concentrates On Building Up

Bulk Carrier Fleet

Over the past year or so, well over 100 secondhand dry cargo ships have been purchased by the Chinese, either for their domestic fleet, or for operation under "convenience" flags. A surprisingly large number of these—possibly over 30—have been bulk carriers, and it appears that the Chinese are now making a concerted effort to build up their bulk cargo-carrying capability. Especially significant has been the recent interest of these buyers in large bulk vessels as purchases had previously been confined to tonnage of up to $\pm 35,000$ dwt. Lately, several "Panamax"-sized ships have been transferred to Chinese ownership, and the purchase of a 95,000-ton ore carrier has even been reported. Inevitably, these sales have aroused considerable interest at a time when secondhand values of good-class bulk carriers and OBOs are strengthening.

Prior to 1975, with other, more pressing problems, the Peoples' Republic of China (PRC) had maintained a low profile in the secondhand ship market, confining its interest to liner types, largely as replacements for older, obsolete vessels. Generally, the policy, insofar as bulk cargo shipments were concerned, was to charter-in the required tonnage through the China International Chartering Corp. (or "Zhingzu"). On occasion, Chinese charterers were exceptionally active in the tramp market, taking large numbers of multipurpose cargo ships in the $\pm 15,000$ -dwt class, as well as handy-sized bulk carriers for single trips or for periods of up to two years, to service bulk trade.

Subsequently, the Chinese—probably encouraged by the prevailing low prices and anxious to participate more fully in foreign trade—decided to give priority to enlarging their domestic and overseas fleets. With a limited shipbuilding capability, they could either contract for newbuilding (and some orders were placed), or secure suitable tonnage through judicious secondhand purchases. A shortage of hard currency was the decisive factor and, cautiously entering the sale and purchase market in 1975-76, the Chinese began buying good 'tween-deck tonnage between five and 10 years old. The success of this policy (and it was at this time that the first tankers were acquired) encouraged the Chinese to step up the purchase of modern vessels. Paradoxically, this decision appears to have been unrelated to the state of the sale and purchase

market, but when their presence began to be noted, in about May 1977, prices—reflecting the deterioration of freight rates—were exceptionally attractive.

Initially, Chinese interest centered on 'tween-deck ships with good all-round cargo-handling capability, and purchase included several en-bloc deals involving fast liner types. This tonnage was mainly late-1960's vintage and previously under French or German ownership—as, for example, were the six ships sold by C.G.M., each of which was equipped with a heavy lift. Subsequently, however, it became clear that the Chinese, channeling purchases through a Hong Kong agency, China Ocean Tramping, were also looking for geared bulk carriers, and between May and December 1977 they acquired at least 13 vessels of up to 38,000 dwt at a total estimated investment of U.S. \$65 million. None of these bulk carriers were over 10 years old, and some were built as recently as 1974.

A number of reported sales have fallen through, as all negotiations are "subject to inspection," but over recent months the Chinese have continually been in the market. During the first six months of 1978—when the volume of bulk carrier tonnage sold amounted to over 6.5 million dwt—at least another 15 ships were acquired secondhand by the Chinese at a cost of U.S. \$57 million. The majority of these are in the $\pm 35,000$ -dwt size range (including two Swedish car-bulk ships) but, for the first time, purchases have included "Panamax"-sized tonnage of up to 80,000 dwt. For example, during May, the Chinese concluded the acquisition of the 76,500-ton Thara for U.S. \$3,225,000 and two other ships of this size. Then, in June these buyers took the 92,800-ton Sardinia Weipa, built in 1972, for some U.S. \$6 million.

The addition of large bulk vessels to the Chinese Fleet suggests that large-scale imports of iron ore are imminent, and there have certainly been reports that Australia will be the source, whatever the eventual utilization of these vessels, the PRC is clearly anticipating a large increase in bulk trade, and is developing its fleet to cater for this. The growth of the Chinese bulk fleet has certainly been impressive.

By mid-1978, there were probably 2.1 million dwt of bulk carriers registered in China, with perhaps another 0.4 million dwt outside the country. Estimates

of the amount of tonnage under Panamanian or Hong Kong flags vary, and the amount is continually changing as ships are bought, sold and transferred to the Chinese flag by China Ocean Tramping or other affiliates. Since October 1976, for example, a number of Somali-flag, Chinese-owned ships have been transferred to Chinese registry or other flags (notably Panama).

The PRC has been described as a "closed economy" and, until now, its role in world trade has been modest. In 1976, for example, China's exports accounted for less than 1 percent of the world's total. Nevertheless, the ground is being prepared for a more advanced, trade-oriented economy. Exports are dispersed over a wide range of products, and the pattern of employment of the Chinese-owned conventional dry-cargo fleet has broadened as the PRC has consolidated its political and trading ties with various Third World countries.

Imports, however, are concentrated on a narrow range of essential materials or commodities, which are mainly transported in bulk—principally agricultural products, fertilizers, and iron and steel. A sizable bulk fleet is, for example, needed to haul grain, imports of which were unusually low in 1976. However, a poor harvest forced the PRC to purchase over 10 million tons of wheat in 1977. These purchases were the largest ever made, and it is believed that grain imports rose to almost 8 million tons. This high

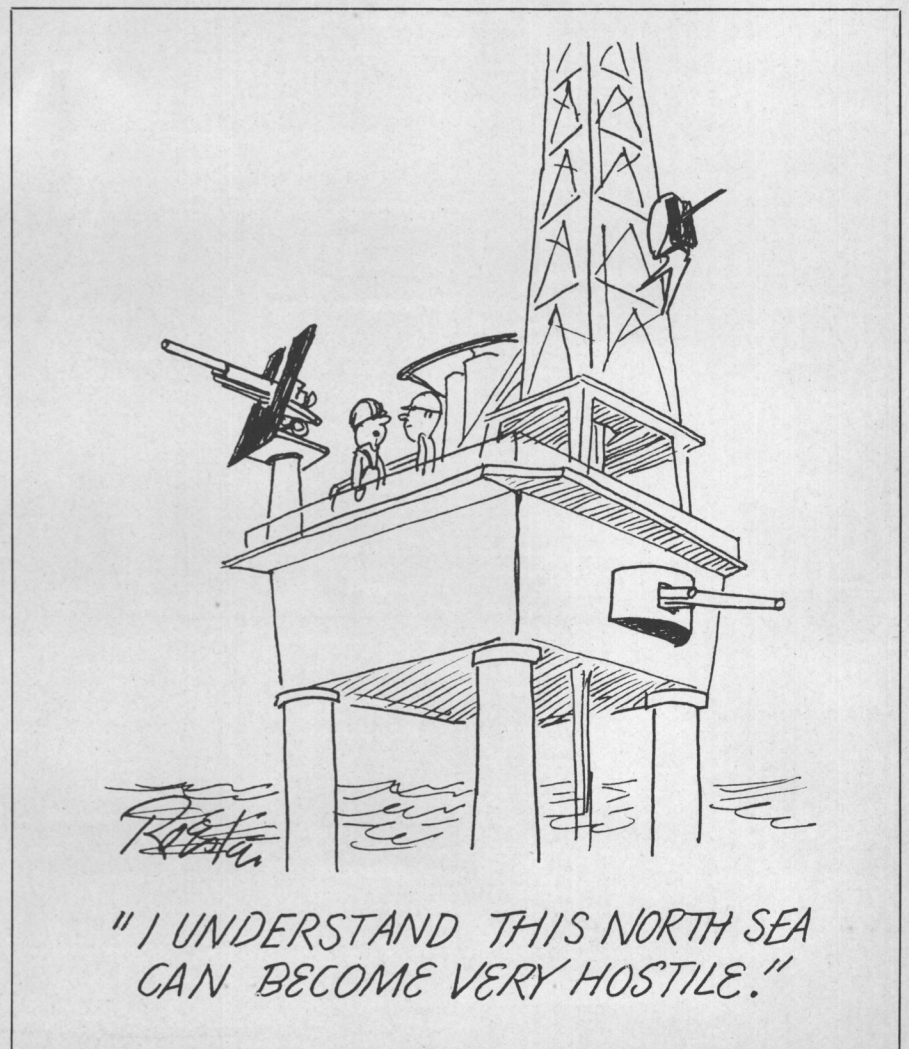
level of imports is expected to be maintained in 1978.

Other agricultural products which feature prominently in the PRC's trade are rice (exports of which are between 1-2 million tons annually), and sugar. Chinese imports of sugar doubled in 1976 and then trebled in 1977, when over 1.5 million tons were shipped. Fertilizer imports, mainly NPK compounds, also increased in 1977 and will probably rise again this year.

Phosphate rock is excluded from these figures, but imports by sea are comparatively small, and mainly consist of Moroccan (165,000 tons in 1977) and Egyptian products. Another major import item is iron and steel, imports of which rose to record levels in 1977 to compensate for the poor performance of China's own industry. Japan is the principal supplier, shipping 2.8 million tons in 1975, 3.5 million tons in 1976, and over 4 million tons in 1977.

Iron ore imports are also increasing, with an estimated 3 million tons arriving from North Korea and Australia and, against the background of the recent trade growth, China's sorties into the secondhand bulk carrier market can be expected to continue, as the overall shipping requirement is far in excess of the present capacity of the fleet.

For further information, contact Peter Rowbotham, H.P. Drewry (Shipping Consultants) Limited, 34 Brook Street, Mayfair, London W1Y 2LL, England.





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

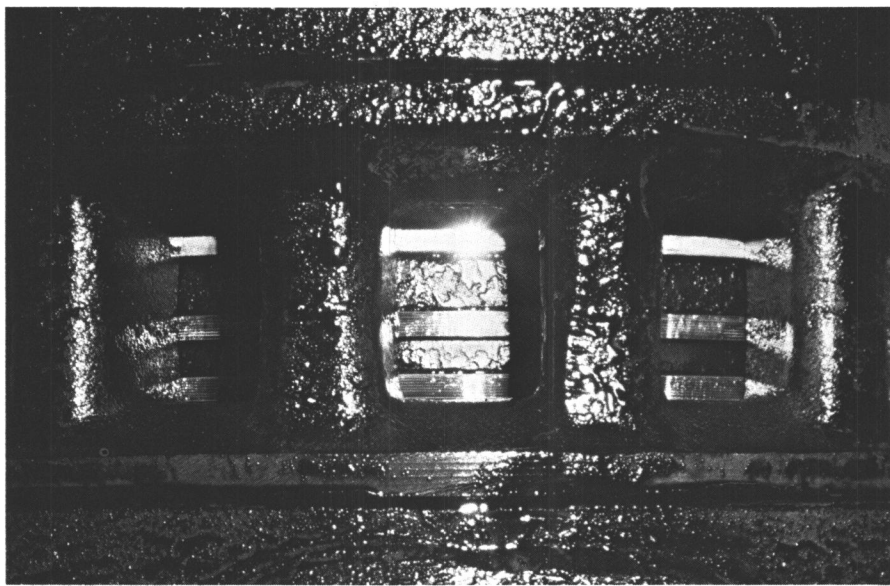
How Shell's CAPRINUS® R Oil 40 is helping keep EMD's clean with low wear in the 8,400-hp Dennis Hendrix

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

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

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

CAPRINUS R has delivered trouble-free performance for over



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

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

Exceptional cleanliness; low wear

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

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

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

Filter life up to 2,776 hours

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

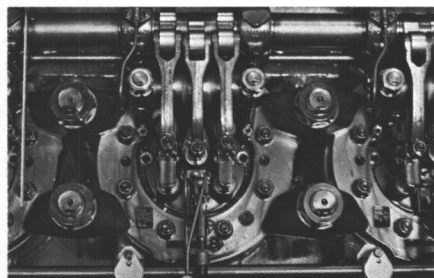
CAPRINUS R Oil's dispersant additive system helps keep contaminants in suspension, prevents heavy deposit buildup on filters. That can mean important savings.

High alkalinity stays on guard

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

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

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



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

Come to  **Shell for answers**

Halter Marine Announces Corporate Name Change

Halter Marine Services, Inc., New Orleans, La., has announced the changing of its name to Halter Marine, Inc., effective July 3, 1978.

Harold P. Halter, chairman, said the change was dictated by Halter's expansion from its traditional offshore oil related markets into new areas such as high-

speed surface-effect mass transport ferries, fast military patrol boats, and pleasure boats including yachts, sailboats, and the world champion Cigarette racing boats.

"This diversification," he said, "gave the company exposure in new markets on a global basis, and the word 'services' in the company name caused some confusion among persons unfamiliar with the company. We began re-

ceiving requests for a variety of services including the leasing of vessels, ship repair, and ship chandlery."

Mr. Halter added: "Halter Marine, Inc. is an innovative ship design and construction company and does not operate service facilities. By dropping the word 'services' from our corporate name, we should eliminate any further confusion."

Halter Marine, Inc. is the

world's largest builder of supply vessels for the offshore oil industry. The company owns and operates 10 shipyards in the Southeastern United States, and builds a wide variety of vessels including crewboats, tugs, utility boats, fishing vessels, and oceanographic research vessels.

Dravo SteelShip Names Frank C.A. van Bentem Engineering Director

Edward D. Fry, vice president/general manager of Dravo SteelShip Corporation, has announced the recent appointment of **Frank C.A. van Bentem** as engineering director. The company maintains its own engineering department with Mr. van Bentem having overall responsibility. Dravo SteelShip Corporation designs and builds steel and aluminum vessels ranging from 40 feet to 185 feet in length. The yard is currently building both inland and offshore vessels for government and commercial customers.



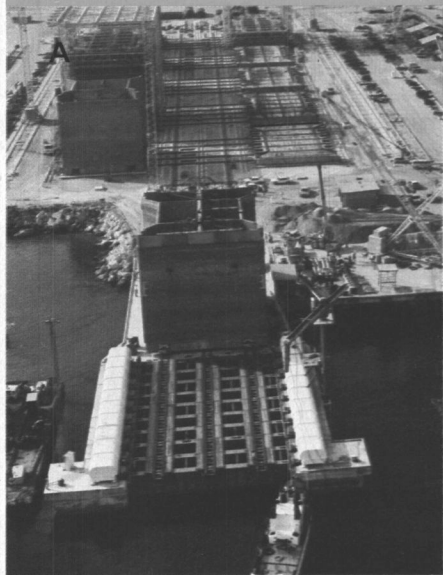
Frank C.A. van Bentem

Mr. van Bentem comes to Dravo SteelShip Corporation from Ocean Springs, Miss., where he operated his own naval architectural firm. He was formerly a senior marine engineer at Ingalls Shipbuilding in Pascagoula, Miss. Mr. van Bentem was educated in Holland, holds a B.S. degree in marine engineering, is a graduate petroleum engineer and a naval architect. In addition, he holds several other certificates of marine engineering and special studies for turbine propulsion systems. Mr. van Bentem is a member of The Society of Naval Architects and Marine Engineers and the American Society of Naval Engineers.

Mr. van Bentem brings to Dravo SteelShip 20 years of experience in marine design and construction. Dravo SteelShip now offers five new offshore supply boat designs which were developed under the direction of Mr. van Bentem. These designs are complete, ABS approved and ready for construction, and range in length from 106 feet to 180 feet.

For more information concerning Dravo SteelShip new utility and supply boat designs, write to **Douglas L. Oehrlein**, Marketing, Director, Route 4, Box 167, Pine Bluff, Ark. 71602.

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- 26 nations' navies use Syncrolifts.
- More than 150,000 vessels have been docked and transferred by Syncrolifts throughout the world.
- Syncrolifts are used for launching newly constructed vessels as well as for ship repair work.



SYNCROLIFT® DRYDOCKS AND TRANSFER SYSTEMS

A Product of
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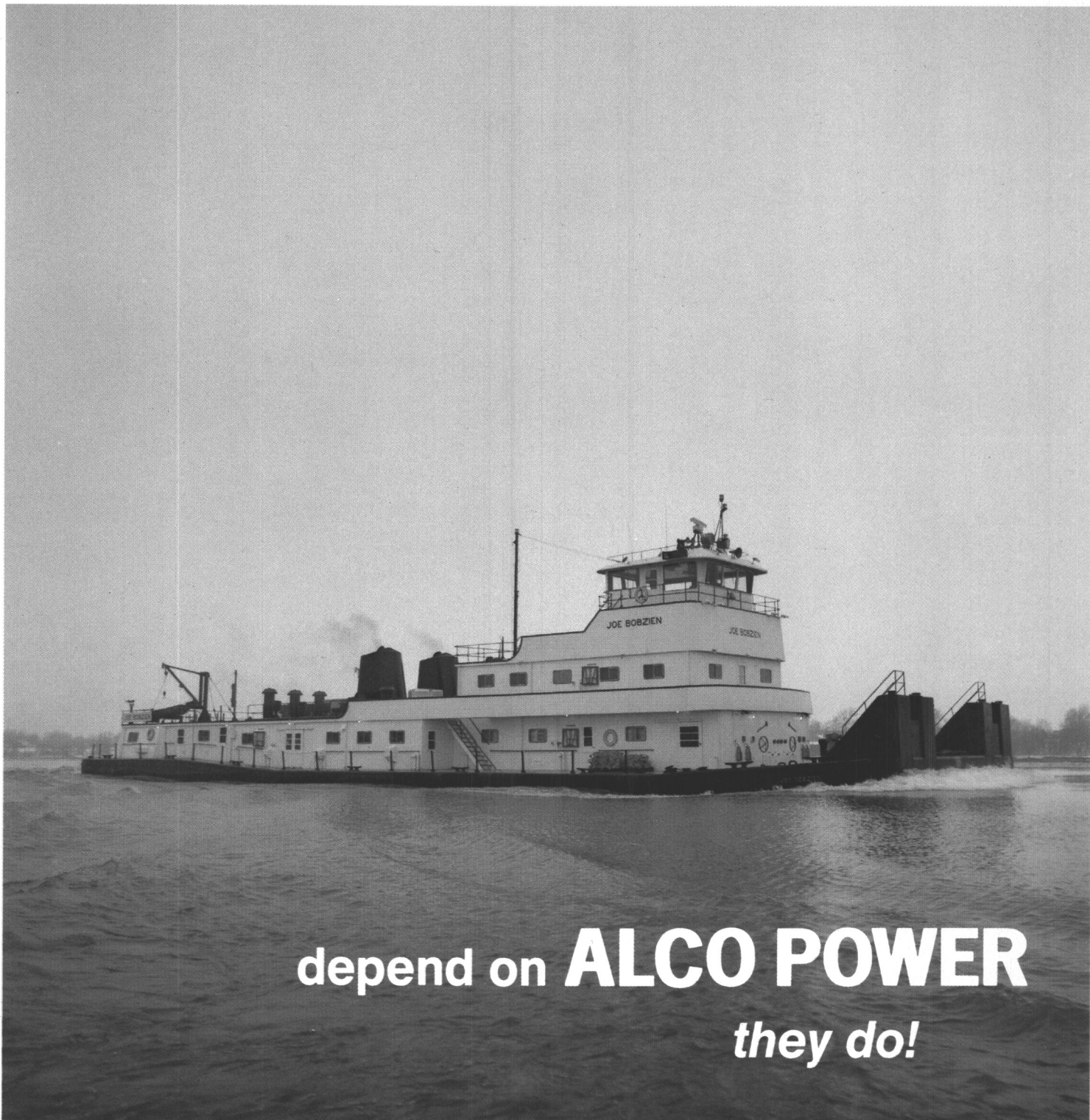
Miami Office:
P.O. Box 560008, 8970 S.W. 87th Court
Miami, Florida 33156 U.S.A.
Phone: 305/271-5721
Telex: 051-9340
Cable: SYNCROLIFT

London Office:
17 Devonshire St.
London W1N 1FS, U.K.
Phone: 323-2855
Telex: 23717

A. DUBAI, UAE: Concrete caissons weighing 4,000 tons launched on Syncrolift.® Assembly line construction in transfer area.

B. LAS PALMAS, CANARY ISLANDS: 27,400 DWT vessel, Cobetas, 183 m. long being transferred to parking area from Syncrolift.®

C. PUERTO CABELLO, VENEZUELA: 30,500 DWT vessel constructed in two sections on land. Each is launched separately on Syncrolift.® and the two sections are welded together in the water.



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they do!

ALCO POWER BOSS diesels can be found working in waters around the world—in tuna boats, deep sea tugs, push or tow boats—dredges, ice breakers, LNG tankers, LSTs—

Why? Because our history of dependable performance is known around the world. Our fuel economy—our parts and service availability—our simple construction to allow for ease of maintenance

or overhaul—we've had ALCO POWER BOSS diesels run more than 37,000 hours before major overhaul with normal maintenance.

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or phone 315/253-3241. Telex: 937-300.

ALCO[®]
Diesel Engines

API Annual Tanker Conference To Be Held At Tarpon Springs Oct. 1-4

Tanker safety and pollution prevention will be the main topics of discussion at the American Petroleum Institute's annual tanker conference, October 1-4 at Innisbrook, Tarpon Springs, Fla.

Among the speakers will be

M.P. Holdsworth, Shell International Petroleum Co., Ltd., London, England, and Rear Adm. **W.M. Benkert**, USCG (ret.), who will discuss the international agreements on tankers and crew standards reached earlier this year at conferences in London, sponsored by agencies of the United Nations.

Also to be discussed is the U.S. Coast Guard program for inspec-

tion of ships entering U.S. harbors. The speaker will be Capt. **John E. DeCarteret** of the Coast Guard.

Other topics include retrofitting of inert gas systems on tankers, anticipated requirements for collision avoidance systems, carriage of liquefied natural gas, a report on the tanker activities in the Alaskan port of Valdez, shallow draft maneuvering of

large tankers, use of dispersants, major oil spills, and possible solutions for vapor emissions problems.

Paceco International Appoints Alan Holme Managing Director

Alan L. Holme was recently appointed managing director of Paceco International Limited, Croydon, England. The announcement was made by Paceco, Inc. president and PIL board chairman **John F. Martin**. PIL is the European affiliate of Paceco, Inc., a subsidiary of Fruehauf Corporation, Alameda, Calif.



Alan L. Holme

Mr. Holme, PIL's deputy managing director since 1971, has a long history of world experience in engineering, production, marketing and contract administration. Mr. Holme received his degree in engineering from Cambridge University. After management positions with several U.K. companies and assignments throughout the world, Mr. Holme came to PIL to manage a team studying European port projects. His most recent responsibilities have been in administration and marketing.

As managing director of PIL, Mr. Holme will continue the responsibilities he assumed after the untimely death of **Peter J. Tyrrell** earlier this year.

Three Appointments At Sun International Unit

Sun Oil Trading Company president **Gordon S. Cochrane** has announced the appointments of:

Gerald F. Cerchio as vice president, responsible for all crude and product trading. He had been vice president of products.

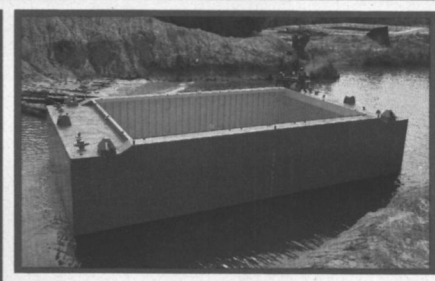
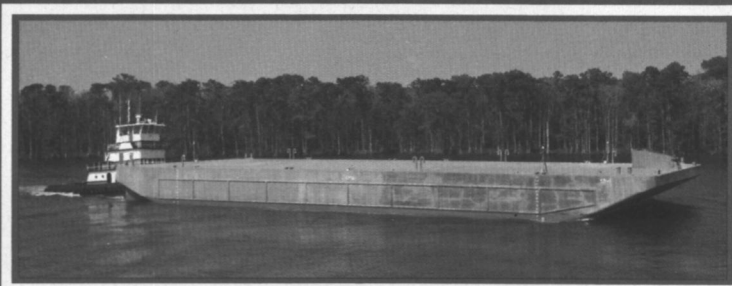
Joseph E. Williams as manager of operations, responsible for crude oil and product coordination and contract administration. He had been manager, crude oil coordination.

Ronald H. Rogers as manager, crude oil trading, reporting to Mr. Cerchio. Mr. Rogers had been a crude oil trading specialist.

Sun Oil Trading Co. is a subsidiary of Sun International, 200 West Lancaster Avenue, Wayne, Pa. 19087, which is the operating unit of Sun Company engaged in the trading of crude oil and petroleum products, marine transportation, terminalling operations and the foreign marketing of petroleum products.

The marine fabrication capabilities of Equitable.

We build barges for any type of cargo you want to carry on inland rivers or across the ocean. Our capabilities and experience include the building of deck barges, self-unloading barges, covered hopper barges, oil, acid and chemical barges, open barges for raw materials, derrick barges, pipelaying barges and Lash and Seabee barges. Barges of superior design and construction to meet your precise construction and job requirements and your delivery schedules. We also build specialty items including quarters buildings and derricks for offshore use. Let Equitable build whatever you need for your marine operations. We'll build it right and we'll build it on time.



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A wholly owned subsidiary of Trinity Industries, Inc., Dallas, Texas, a manufacturer of industrial, marine and structural products.

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

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

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SUBSIDIARY: Delta Marine
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Cuba Takes Delivery Of Third Canadian-Built Ship



The Cuban tanker 5 de Septiembre, which was delivered to its owners July 12 at the shipyard of Marine Industrie Limitee of Tracy near Sorel, Quebec. The new 10,000-ton vessel is shown sailing down the St. Lawrence River on her sea trials.

The third tanker to be built in Canada for Cuba was commissioned July 12 at the shipyard of Marine Industrie Limitee of Tracy near Sorel, Quebec, following a week of successful sea trials.

In a ceremony attended by top executives of the Cuban Shipping Line, as well as representatives of the Government of Canada and Quebec and representatives of industry, the traditional bottle of champagne was broken against the hull of the 5 De Septiembre by Mrs. Maria Teresa Rordiguez de Alzugaray, wife of the Consul General of Cuba in Montreal.

The new tanker is of the Marindus design originated by Marine Industrie Limitee, and is recognized throughout the shipping world for its excellent performance.

Considerable credit for the success of Marine Industrie in foreign markets is given to the policy of the Canadian Government which provides financial assistance through the Ministry of Industry, Trade and Commerce, and the Export Development Corporation.

The 5 De Septiembre will be used for the transport of petroleum products in the Caribbean, and occasionally will visit European ports.

Marine Industrie is presently building a series of 17,000-ton multipurpose cargo ships, as well as four 16,000-ton vessels, both of the Marindus design. The latter group is for Polish Ocean Lines.

Fact Sheet 5 De Septiembre

This 10,000-dwt Marindus-type tanker is intended for coastal service, with occasional trans-Atlantic voyages. The vessel is designed to satisfy Lloyd's Class + 100A-1 Oil Tanker and + L.M.C. with notation (cc) corrosion control.

The cargo space is divided into five transverse sections, each divided into three compartments by two longitudinal bulkheads, thus providing a total of 15 separate cargo tanks.

Cargo is handled by four electrically driven, self-priming, centrifugal deep-well type cargo pumps and associated piping systems which permit the simultaneous transport and handling of four different products. Total capacity for pumping middle distillate is approximately 950 t/hr.

The propulsion consists of a medium-speed marine diesel engine with reduction gear driving a single shaft and solid propeller.

Principal Characteristics

Length overall	470 feet
Breadth molded	60 feet
Depth molded to upper deck	29 feet
Scantling draft	23 feet
Deadweight	10,000 tons
Cargo tank capacity	14,000 cubic meters
Main engine medium-speed diesel	
Power (M.C.R.)	5,000 BHP (metric)
Cruising speed at 90% M.C.R.	14 knots
Cruising range	30 days

Smit Nymegen Corporation Holds Seminars On Independently Fired Inert Gas Generators



Pictured left to right: Jan Verwoerd, Smit Ovens Nijmegen, Holland; John J. Krieger, Krieger Associates, Inc., U.S. sales agent; Harry Soesman, manager, sales department, Smit Ovens Nijmegen, and P.T. Chang, Exxon International, Florham Park, N.J., following meeting held at Whitehall Lunch Club, New York City.

Smit Nymegen recently held a series of one-half-day seminars on independently fired inert gas generators. In addition to various shipyards, seminars were conducted at the Whitehall Lunch Club in New York City, the Galleria Plaza in Houston, Texas, and the Hotel Bonaventure in Los Angeles, Calif.

There has been a tremendous increase of interest regarding inerting in general since the February IMCO recommendations were announced, and Smit used these seminars to introduce the detailed design of their family of independent generators specifically designed for OBOs, crude and product carriers.

Smit, a subsidiary of the Dutch Group Holec, has been engaged in the manufacture of a broad line of independent gas inerting systems since the late 1940s for both land and marine use, with over

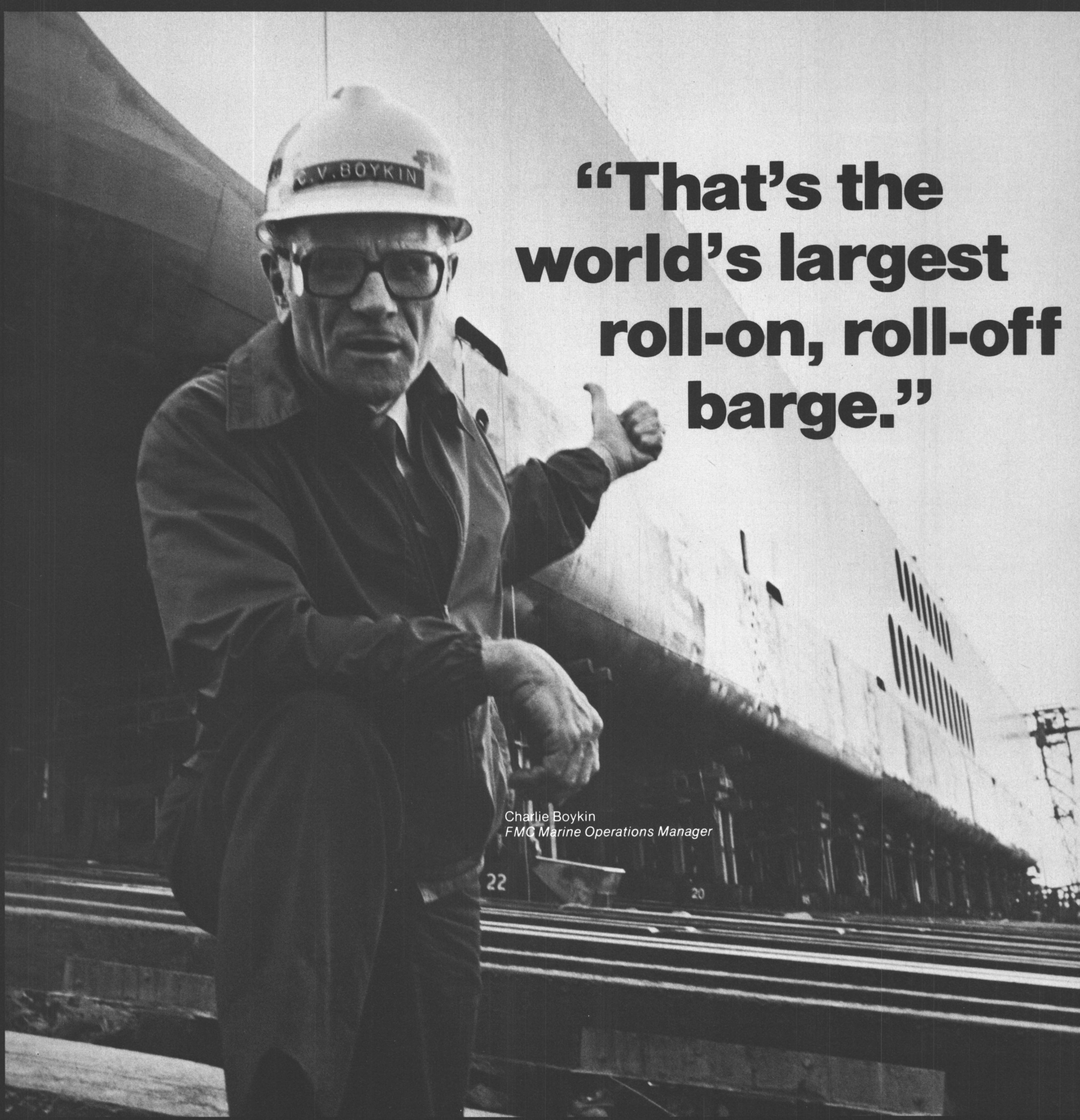
200 now installed on various vessels, and twice that number on land. Marine applications have ranged from fish meal carriers to highly sophisticated LNG, LPG, chemical, crude and product carriers.

A color movie was shown at the seminar which graphically depicted the "heart" of the Smit system—the Ultramizing Burner. This revolutionary design produces inert gas of high quality, with a total absence of soot. The Ultramizing Burner and its combustion chamber will produce clean, absolutely sootless gas of the proper composition within four minutes from startup. Capacity turndown of the burner was also described.

Lecture material has been pre-printed and is available on request from Smit Nymegen Corporation, 1511 K Street, N.W., Washington, D.C. 20005.



"IT'S A NEW POSITIONING SYSTEM FOR THESE DRILLING SHIPS."



**“That’s the
world’s largest
roll-on, roll-off
barge.”**

Charlie Boykin
FMC Marine Operations Manager

Crowley knew FMC's ways could serve them better.

Nobody had ever built what Crowley Maritime Corporation wanted: a triple-deck cargo barge, 580 feet long, 57 feet deep, with a beam of 105 feet. But Crowley knew FMC's ways could serve them better, so FMC is building two of them for Trailer Marine Transport Corporation, a Crowley Company.

We're an efficient yard, doing a big job, with 650-foot, side launch ways, the largest on the West Coast. And our 200-ton crane is something you don't see everyday!

Because we're just the right size to serve you, we can schedule jobs efficiently and deliver on time. And we have the people, knowledge and equipment to deliver a quality product. Crowley counted on that, too.

FMC quality goes into everything we build. And if we can handle the world's largest Ro-Ro barges, we can handle your particular job. See how FMC's ways can serve you better. Call or write Vice President of Sales, FMC Corporation, Marine and Rail Equipment Division, 4700 NW Front Avenue, Portland, Oregon 97208. Telephone (503) 228-9281; Telex 36 0672; Telecopy (503) 223-5036.

FMC

TURBO GENERATOR SETS

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

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

G.E. 600 KW GEARED TURBO GENERATORS

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

G.E. 400 KW TURBO GENERATORS

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

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

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

UNUSED WESTINGHOUSE 60 KW 120 VDC M-20-EH

- 5 120 VDC — 1800 RPM. TURBINE: M-20-EH — 20 lbs dry & saturated — 25" vacuum. 7283 RPM. GEAR: 7283/1800. GENERATOR: 60 KW — 120 VDC — 500 amps — SK — stab. shunt wound.

UNUSED 500 KW DELAVAL-WESTINGHOUSE GEARED TURBO GENERATOR

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

TURBINES & ROTORS

BETH-SPARROWS POINT, QUINCY HULLS

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

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

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

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

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

8500 HP G.E. — C-3 OR VICTORY

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

VICTORY SHIP AUXILIARY TURBO GENERATOR SET ROTORS

- 11 300 KW 5965 RPM JOSHUA HENDY
Turbine — 3H-69 Gear — 52269
Turbine — 3H-52 Gear — 52252
Turbine — 3H-62 Gear — 52262
ALSO WESTINGHOUSE 2A & 5A SERIES

— FOR T-2 VESSELS —

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

538 KW WESTINGHOUSE T-2 AUXILIARY GENERATOR — COMPLETE

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

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

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

WESTINGHOUSE MAIN PROPULSION STEAM TURBINE WITH ROTOR

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

UNUSED G.E. MAIN PROPULSION STATOR

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

WESTINGHOUSE 538 KW AUX. GENERATOR EXCITER ARMATURE

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

538 KW WESTINGHOUSE AUXILIARY TURBINE ROTORS

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

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

G.E. 525 KW AUX. GENERATOR EXCITER ARMATURE

- 20 75-55 KW

NEW STYLE AMPLIDYNE

- 21 5LY148A2 — type A.M. — frame 605

AUXILIARY GENERATOR ROTORS

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

T-2 MAIN CARGO PUMPS

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

LATEST DESIGN 5-SPEED FORCED DRAFT FAN MOTORS

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

T-2 SHIPS SERVICE AIR COMPRESSORS

- 25 Worthington — 5 1/2 x 3 1/2 x 3 1/2 — VA2 — 20 C.F.M. — 100 lbs. — 5 H.P. Motors — 440/3/60 — 1750 RPM.

WESTINGHOUSE DRY TYPE T-2 CARGO PUMP TRANSFORMERS

- 26 200 KVA — single phase — 60 cycle 2300/450 volts — weight 3720 lbs. each. 4 available.

G.E. PYRONOL OIL COOLED TRANSFORMERS

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

MISCELLANEOUS DRY-TYPE TRANSFORMERS

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

INGERSOLL-RAND 14,000 GPM MAIN CIRCULATOR

- 29 14,000 GPM @ 25' head — model 24UCM — bronze — with 125 HP 440/3/60 580 RPM motor. 26" suction — 24" discharge. Can furnish with Westinghouse type CS frame B-876C or GE type KF vertical motors.

PUMPS

BRONZE T-2 TANKER STRIPPING PUMPS

- 30 14x14x12 — 700 GPM at 100 lbs. Same pump available in steel for fuel oil transfer, etc.

WESTINGHOUSE 200 H.P. CARGO PUMP MOTORS

- 31 440/3/60 1750 RPM — 40°

MISSION TANKER T2SEA2 CIRCULATING PUMP MOTOR

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

T-2 MAIN ROTOR

- 33 LARGE G.E. MAIN PROPULSION SCHENECTADY TURBINE ROTOR

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

T-2 MISCELLANEOUS, PUMPS ETC.

- 34 10 HP Labour Self-Priming Bilge Pumps • Rudder 13 1/2" Rudder Stocks • Main Injection 3-Way Valve Main Condensate Pumps • Fuel Oil Service Pumps Magnablast Breaker • 1 Set New Bull Gear & Pinion for G.E. 525 K.W. Diesel Gen Model S-162 • 32", 24", 15" Rubber Expansion Joints • Mission Tanker Steering Gear Pumps

TURBINE FIRE PUMPS — BRONZE

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

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THE BOST

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Main Office: (301)

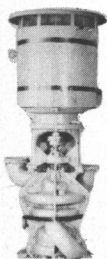
NEW BLACKMER FUEL OIL TRANSFER PUMP

36



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

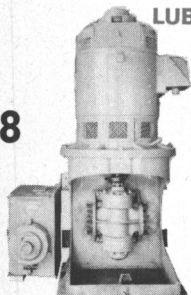
37



UNUSED BRONZE FEED-WATER BOOSTER PUMPS

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

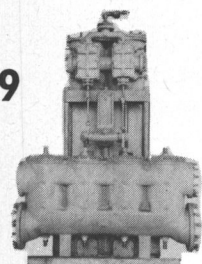
38



LUBE OIL SERVICE PUMP

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

39



WORTHINGTON 16"x14"x18" VERTICAL DUPLEX STRIPPING PUMP

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

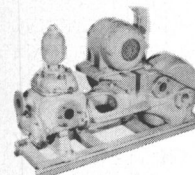
40



NEW WORTHINGTON VERTICAL SUBMERSIBLE BILGE PUMP

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

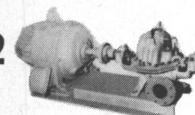
41



MOTOR-DRIVEN GARDNER-DENVER RECIPROCATING BILGE PUMP

50 GPM — 150 PSI — Model
ALAXE — serial #106335.
3 3/4" bore — 4" stroke — 2 1/2"
suction — 2" discharge. 51"
long — 21" wide — 21" high
— weight 750 lbs. MOTOR:
Diehl — 2.5 HP — 440/3/60
— 1750 RPM — 3.53 amps.

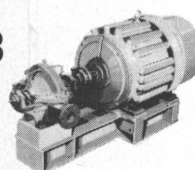
42



GOULD FIRE AND BILGE PUMP

Ex-LST — horizontal centrif-
ugal — bronze — 4" suction —
3" discharge — 250 GPM @
100 PSI — 2200 RPM. MO-
TOR: 30 HP — 230 VDC
with magnetic starter.

43



AURORA HEAVY DUTY BRONZE FIRE SERVICE PUMP

Single stage — 2 1/2" suction
— 2" discharge. 3000 RPM
— 250 GPM. 100 lb. head.
Impeller diameter 9 1/2". MO-
TOR: Air cooled heavy duty
25 HP Reliance T type ON-
2S-2 1/2 230 VDC — 110 amps
— stab. shunt.

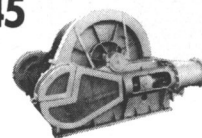
DIESEL GENERATOR SETS

44

410 KW ENTERPRISE DIESEL GENERATOR SET

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

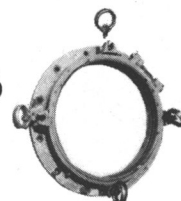
45



AUTOMATIC TENSIONING 12X14 STEAM WINCH

American Engineering. Drum
diameter 24". Will stow 1500
ft of 1 1/2" in 8 layers. Ca-
pacity 1st layer: 20,000 lbs/50
100 FPM — 16,000 lbs/50
FPM. Drum width 2' 6 3/4".
Steam inlet 3" — exhaust 4".
8' 4 1/2" wide over cylinders.
Base 6' x 6' 3 1/2".

46



16" BRASS PORTLIGHTS

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

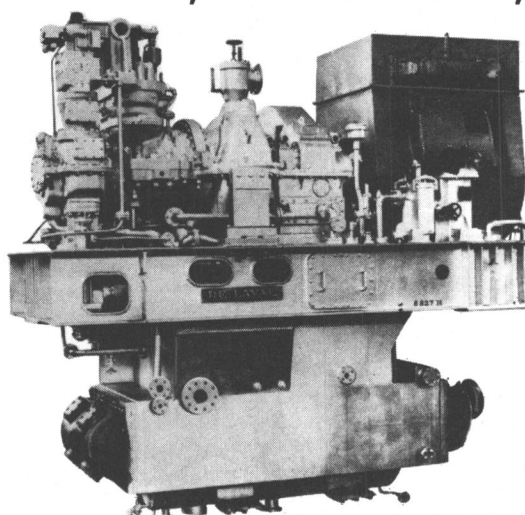
MISCELLANEOUS

47

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

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

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



YOU CAN SAVE THOUSANDS OF DOLLARS

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

IMPORTANT INFORMATION

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

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1900 Marine Dept.: (301) 752-1077

Gulf Mississippi Adds Two Vessels To Fleet For Offshore Service

Gulf Mississippi Marine Corporation, New Orleans, La., one of the principal operating companies of the Offshore Marine Services Division of Pott Industries, has taken delivery of a new 185-foot by 38-foot by 14-foot, 3,600-hp-

class supply vessel. The Gulf Fleet No. 31 was constructed by Quality Equipment, Inc. of Houma, La., a wholly owned subsidiary of Pott Industries.

This marks the second vessel delivered to Gulf Mississippi Marine Corporation within the last six weeks, with the first being a 260-foot by 72-foot by 17-foot offshore deck-cargo barge, the Gulf Fleet 262. The barge was built in

New Iberia, La., by Houston Systems, Inc., and brings the total number of offshore deck barges in the fleet to 10.

The delivery of these two vessels represents a part of an ongoing aggressive construction program which currently has scheduled for delivery during the last five months of 1978 an additional four tugs, three supply vessels and one combination towing/sup-

ply vessel. This construction program will bring to 97 the total number of vessels of Pott Industries Offshore Marine Services Division, which provides a full scope of Marine Services transportation services to the offshore petroleum industry on a worldwide basis.

Pott Industries, St. Louis, Mo., is a wholly owned subsidiary of Houston Natural Gas Corporation (HNG) of Houston, Texas.

Houston Natural Gas Corporation's other lines of business include construction and repair of barges and towboats, inland waterways transportation, intrastate natural gas transmission, oil and gas exploration and production, coal mining, and production and marketing of industrial gases.

Lennart Thorell Joins Todd Pacific Shipyards

Lennart M. Thorell has joined the Los Angeles Division of Todd Pacific Shipyards Corporation as manager of engineering, according to a recent announcement by H.K. Schaefer, vice president and assistant general manager.



Lennart M. Thorell

Mr. Thorell brings to Todd more than 26 years of shipbuilding experience in new construction and repair of Naval and commercial submarines and surface vessels. After serving as Planning and Estimating Officer at Supervisor of Shipbuilding, Conversion and Repair, USN, Groton, Conn., Mr. Thorell was employed by General Dynamics Corporation and spent over 22 years at Electric Boat Division, General Dynamics' Washington office and Quincy Shipbuilding Division in various key engineering, project engineering, marketing, legal and program management assignments.

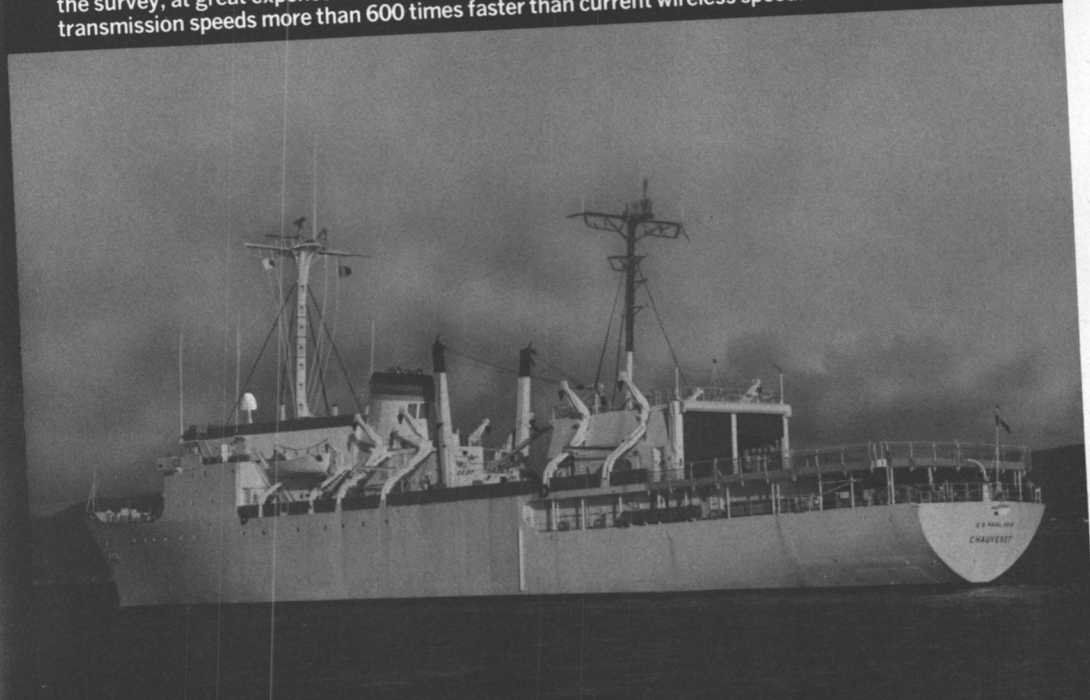
A graduate of the University of Bridgeport with a bachelor's degree in mechanical engineering, Mr. Thorell is a member of The National Management Association and The Society of Naval Architects and Marine Engineers.

In addition to a heavy workload in repair and overhaul of Naval and commercial vessels, Todd Pacific's Los Angeles Division currently has under contract the construction of nine FFG-7 Class Guided Missile Frigates for the U.S. Navy.

CASE HISTORY #4

"With the Marisat System, Military Sealift Command oceanographic survey ships can transmit compiled data to computer centers on a daily basis."

"Previously, tapes of stored data were mailed to processing centers after a ship put into port," explains Commander George Greer. "Gaps in the coverage might not be discovered for days or weeks...it might even require return of a ship to repeat part of the survey, at great expense. Marisat will permit on-the-spot verification of data at transmission speeds more than 600 times faster than current wireless speed."



U.S. Navy survey ship, Chauvenet, with Marisat.

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Unlike conventional radiotelegraphy or radiotelephony, Marisat is unaffected by weather or ionospheric disturbances. It offers virtually the same options and values as business connections on dry land: direct voice contact, cost-effective telex, facsimile and data transmission.

Marisat has been in service for two years. It is used daily by commercial vessels of more

than 15 nations—passenger liners, fishing fleets, cable laying ships, cargo vessels and by the U. S. Navy.

The mobile terminals you need are ready for immediate installation by Comsat General. They are compact, easy to operate, economical, and you can buy or lease them.

To get started right away, call one of these three numbers: In Washington, (202) 554-6070; New York (212) 757-6307; Houston (713) 777-1359. Or if you'd like additional information on how Marisat services can be tailored to your needs, write to the Director, Marisat Marketing, at the address below.

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This yard was building ships in Canada when most of them were made of wood.

Today we are fully abreast of the technological advances which have enhanced the quality of modern steel ships. Our "Marindus" design for cargo vessels and tankers enjoys worldwide recognition.

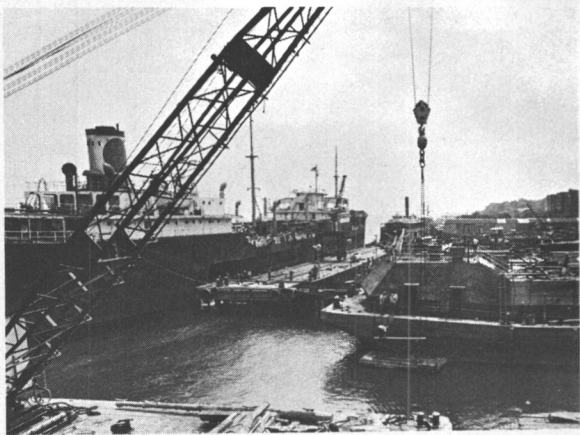


One of a series of 17,000 dwt multipurpose cargo vessels designed and built by Marine Industries Limited. Intended especially for general cargo, they are readily adapted to carry containers. These ships are highly automated and equipped with the most modern navigational aids.



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A foundry and fully equipped shops for machine, pipe, plate, electrical, boiler and carpentry work are maintained to service all ship and barge repairs, on a 'round-the-clock basis.

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PADD is centrally located in the heart of the N.Y.-N.J. port complexes within 3 miles of 9 major oil terminals.

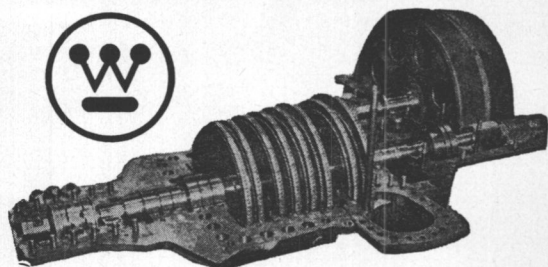
A vast inventory of parts and equipment enables us to complete jobs in less time, thus minimizing extended layovers.



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SHIP SERVICE OUR SPECIALTY

Halter Marine Delivers First Of Three Supply Boats To Brazil —First From U.S. Shipbuilder

Halter Marine, Inc., New Orleans, La., has delivered the first offshore supply boat built by a U.S. shipbuilder to the nation of Brazil.

The 185-foot Oxala (pronounced o-shal-a), the first of a three-boat contract, was built for H. Dantas Servicos Maritimos, S.A. of Rio de Janeiro for operations off the coast of Brazil with Petrobras, the Brazilian state oil company.

The Oxala is 185 feet in length, with a 40-foot breadth, and 14-foot depth. Her normal operating draft is 11.92 feet and normal displacement is 770.63 long tons.



The 185-foot Oxala was built for H. Dantas Servicos Maritimos, S.A. of Rio de Janeiro for operation with Petrobras.

She is powered by two EMD 12-645 E6a engines developing 1,500 horsepower each at 900 rpm. Reverse/reduction gears are Reintjes WAV 1850 with a ratio of 3.455:1, and the vessel is equipped with two four-bladed 90-inch-diameter stainless-steel propellers. Controls for her two stations are by Westinghouse.

The Oxala is equipped with four Smatco dry mud tanks with a total capacity of 4,000 cubic feet, and four liquid mud tanks with a total capacity of 49,012 gallons. She has a fuel oil capacity of 104,134 gallons and can carry 3,486 gallons of lube oil. The new ship has a 120,742-gallon ballast capacity and can carry 37,060 gallons of fresh water.

Deck machinery includes a towing winch, anchor windlass, two capstans, two electro-hydraulic tuggers and a five-foot-diameter stern roller with towing guides.

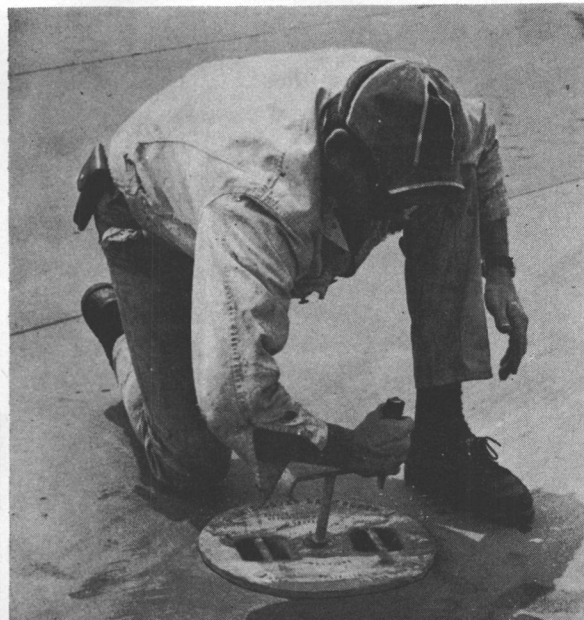
Auxiliary machinery includes two General Motors 98-kw generators and two 98-kw switchboards. The vessel is equipped with a 13-point alarm system, and is cooled by Carrier air-conditioning and heated by a Lennox heating system. Also onboard are two Quincy air compressors, a Deming sanitary water system, fire protection system, and fully equipped modern galley.

Communications and navigation equipment includes UHF and single-sideband radios, Decca radars, a Ritchie magnetic compass, Benmar direction finder and Sperry gyro-compass and autopilot.

The Oxala is built to Inter-Governmental Maritime Consultative Organization (IMCO) requirements and carries a tonnage certificate under 400 gross tons. She is U.S. Public Health approved and is American Bureau of Shipping classed A-1, Maltese Cross, full ocean towing, AMS circle "E", and carries Panama Canal and Suez Canal admeasurement certificates.

The new Brazilian-flag vessel was built at Halter's Moss Point, Miss., Division, one of 10 shipyards owned and operated by Halter Marine in the Southeastern United States. Halter is the world's largest builder of supply vessels for the offshore oil and gas industry.

1. UNLOCK



2. OPEN



TIME: 30 Seconds

Memarco Rapid Action Deck Cover

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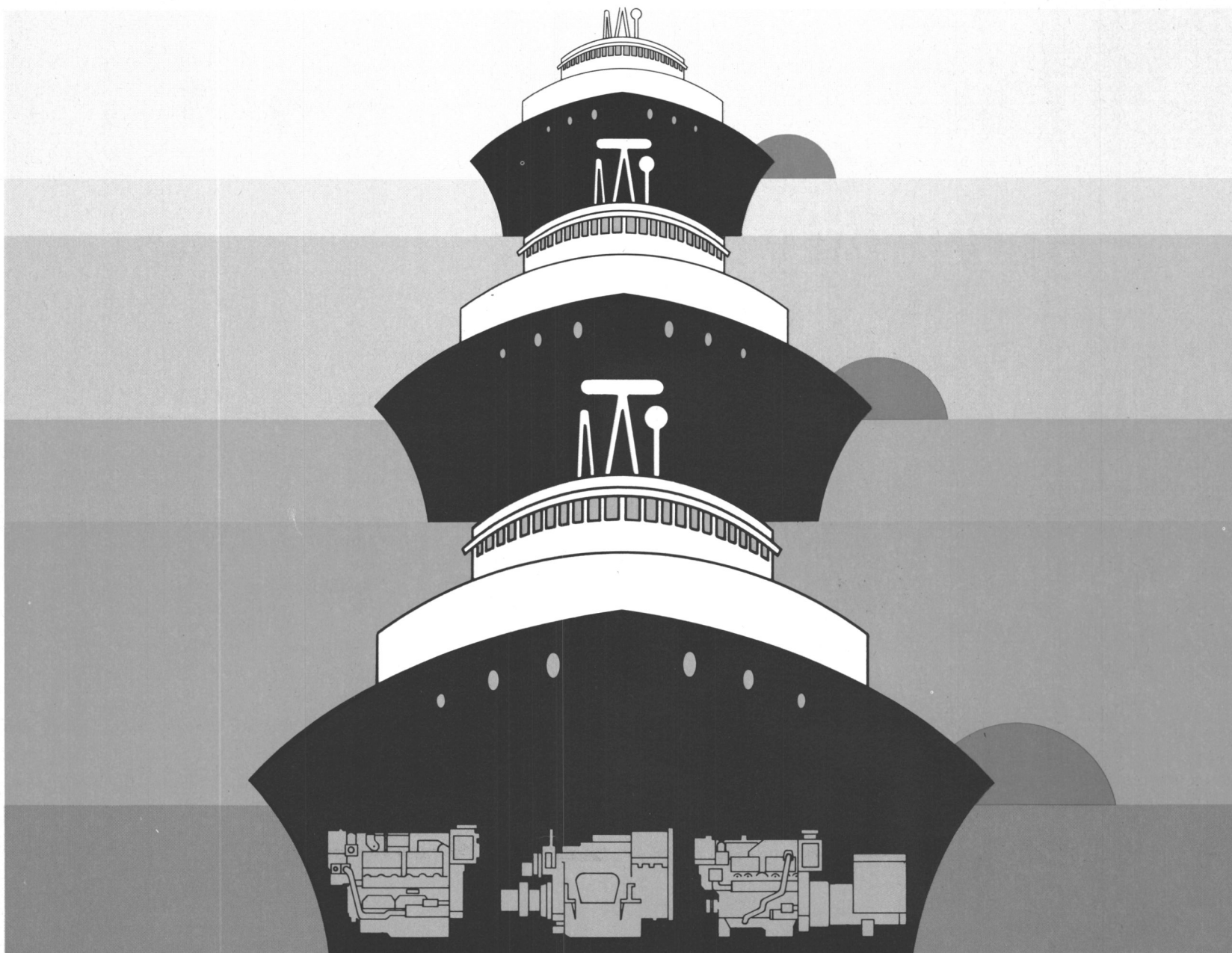
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Davie Shipbuilding Buys Branch Lines, Operator Of Tankers

The board of directors of Davie Shipbuilding Limited, P.O. Box 130, Levis, Quebec, Canada, has announced that an agreement has been reached between their company and the shareholders of Branch Lines Limited for the purchase by Davie of all the outstanding shares of Branch Lines.

The shipping firm Branch Lines Ltd. will then become a wholly owned subsidiary of Davie. Branch Lines operates under the Canadian flag a fleet of seven tankers on the St. Lawrence Seaway, the Great Lakes, the eastern Canadian seaboard, and in Arctic waters up to Resolute in the Northwest Territories and Thule in Greenland.

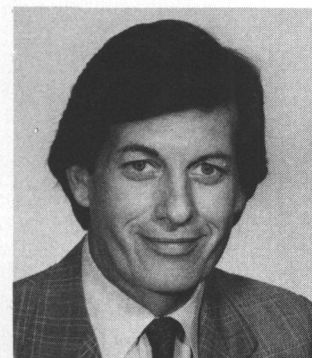
The fleet is modern, the latest four vessels having been built between 1970 and 1974. All are built for navigation in ice, which allows them to operate 12 months of the year.

Davie's management sees this acquisition as a major contribution to the stability of the ship-

yard, with the addition of a major captive customer for its ship repair division, and eventually for building new ships for the fleet.

Branch Lines will continue to be operated as a separate entity by its present staff from its St. Joseph de Sorel headquarters.

Michael Kenney Named President Of Jacksonville Propeller Club



Michael C. Kenney

Michael C. Kenney, president of Ships Supply Inc., is the new president of The Propeller Club, Port of Jacksonville, Fla., succeeding James F. Moseley, admiralty attorney.

John W. Connolly Jr., president of Eastern Seaboard Petroleum Co., Inc., is the new 1st vice president—in line for the club presidency a year from now.

Harold McCarthy, vice president and local manager of Southeastern Maritime Corporation, is 2nd vice president of the club for 1978-79.

George Herbert of Joyserv, Ltd., is secretary, and Edmond L. (Ned) Moran Jr. of Florida Towing is the treasurer.

On the board of governors are Mr. Moseley, the retiring president; Warren K. Anderson, Crowley Maritime Corporation; Robert H. Aprile, Bellinger Shipyards Inc.; Ronald Burroughs, Parkhill-Goodloe Co., Inc.; Floyd Cagle, Ring Power Corporation, and William H. Newburn, Jacksonville Shipyards.

George A. DuBois, Ships Supply; Gerard B. Fox, Strachan Shipping Co.; Capt. John Hanson, Coast Guard Marine Inspection Officer; Harry P. Hart, public relations; Paul Hoffert, Hoffert Marine Inc.; David Howard, Seafarer; Raymond L. King, Sea-Land Service; Capt. Bob Parker, St. Johns Bar Pilots Assn.; James J. Scott, formerly of Jacksonville Port Authority; Joseph Shiffert, North Florida Shipyards; John Sullivan, Sullivan & Sons Inc.; Tom Sween, Pepper Industries Inc.; Capt. Bryan W. Thornton, Sun State Marine Inc., and James S. Weedon, Weedon Engineering.

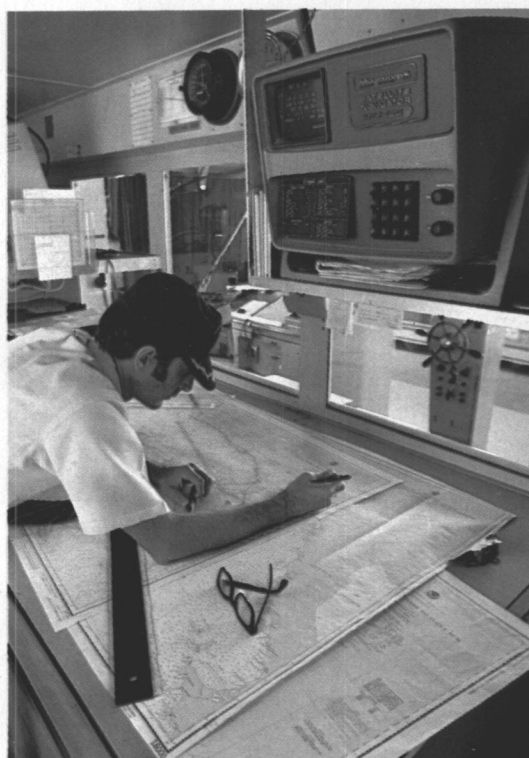
Messrs. Moran, Hanson, Capt. Parker, Messrs. Shiffert, Sullivan, Sween and Weedon are new members on The Propeller Club board. Retiring officers and board members are Joseph Carroll, Capt. Phillip J. Danahy, Capt. James F. Randolph, and Col. Donald A. Wisdom.

Satnav Reliability Proven: MX 1102.

We've been talking about the inherent reliability of the Magnavox MX1102 Satellite Navigators for quite some time. But now, we've got some hard numbers that are worth a thousand words.

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All the planning, designing and engineering in the world cannot tell you exactly how a piece of electronic hardware will perform on the job. Neither can the most exhaustive lab testing. But more than three and three quarter million hours of in-service performance data have demonstrated the reliability we designed into the MX1102 at the outset. Our "claims" of reliability are now substantiated.



New 24-Month Warranty.

Claims of reliability, even when substantiated with hard facts, can appear empty unless a manufacturer is willing to "put its money where its mouth is." And that's exactly what we've done. We've boldly doubled the warranty on MX1102-NV Satellite Navigators—now 24 months from date of installation or 30 months from the date of shipment, whichever occurs first, including parts and labor at any of our 27 service depots throughout the world.

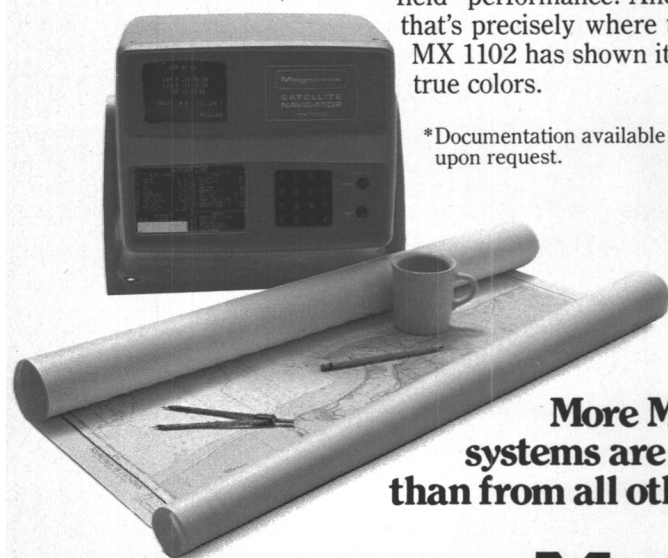
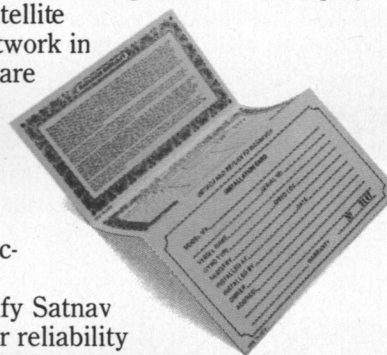
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Reliability translates into hard cash when you're managing a fleet. And when a proven product comes along that's backed up by

the most extensive satellite navigation service network in the world, the results are impressive. That's why there are more Magnavox Satnav systems currently in operation than from all other manufacturers combined!

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That's reliability you can bank on. Magnavox Government and Industrial Electronics Co., 2829 Maricopa St., Torrance, Calif. 90503, (213) 328-0770, Telex: 674373, Cable: MAGNAMAR.

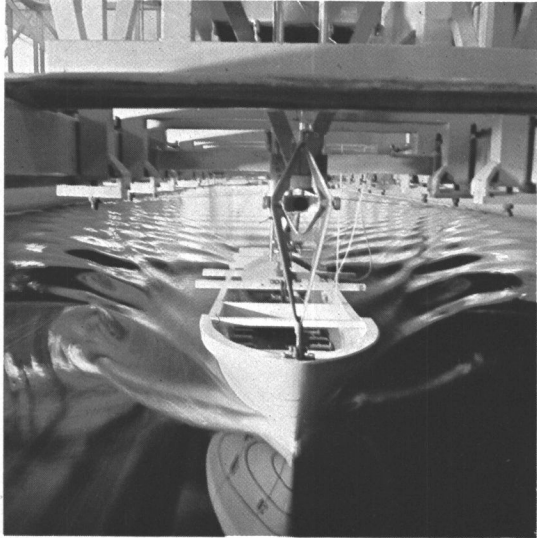


*Documentation available upon request.

More Magnavox Satnav systems are currently in operation than from all other manufacturers combined.

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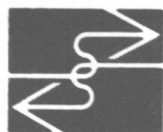
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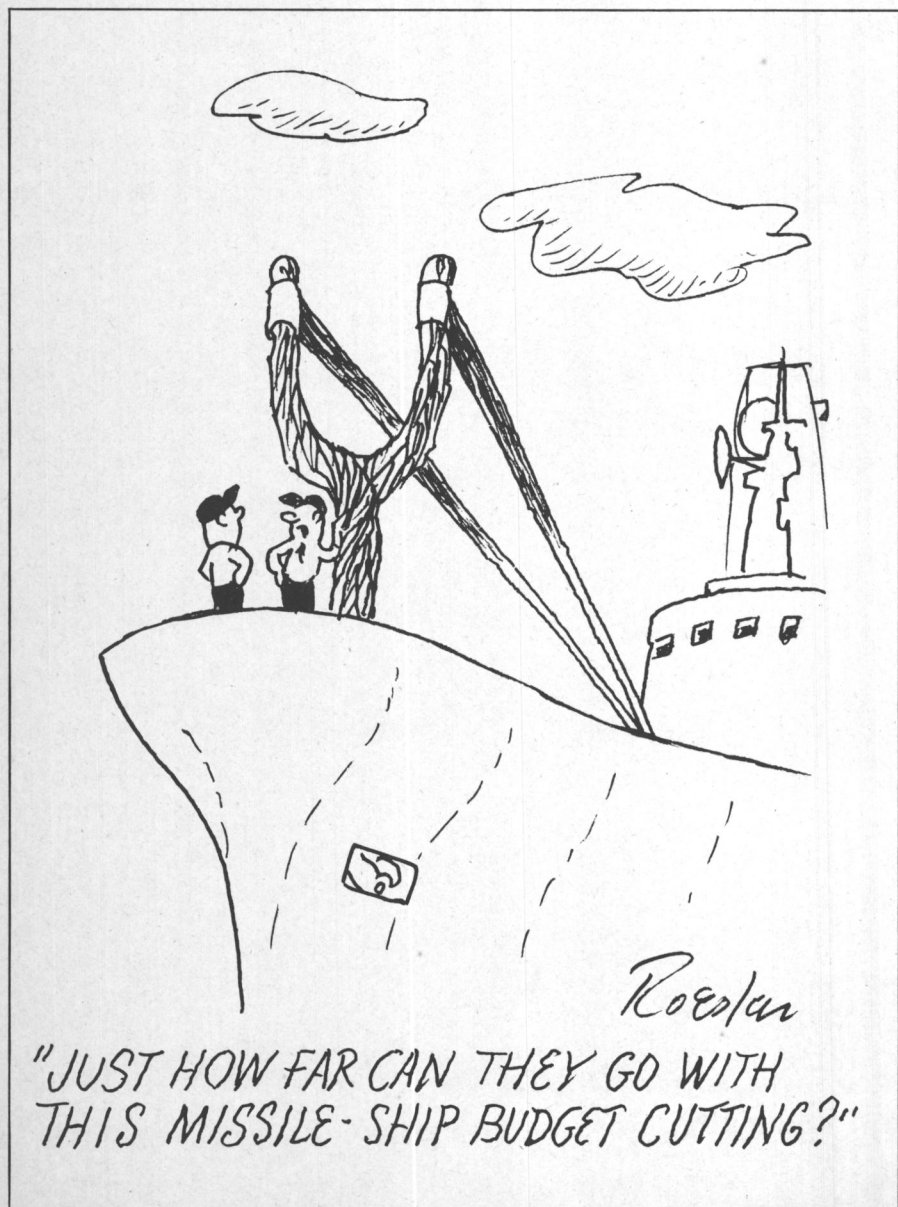


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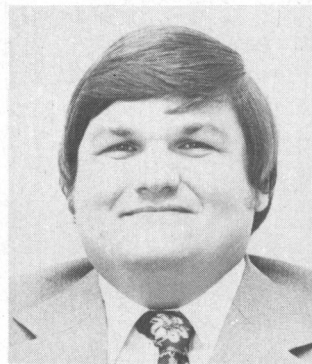
We're making a world of difference.



NAVY PROGRESS — Keel section for Navy frigate USS Clark, third of 11 of the vessels contracted to the Bath Iron Works, Bath, Maine, was laid with 75 percent of its plumbing and other internal systems already installed. Pre-outfitting of such units is a key to the shipyard's outstanding delivery performance. Last November, Bath Iron Works delivered the prototype of the new class of guided missile frigates, USS Oliver Hazard Perry, four weeks ahead of schedule. Witnessing the "ship's birth" were, from left: **Royce A. Young Jr.**, vice president for production; **Henry M. Stupinski**, manager of the FFG Guided Missile Frigate Program; **John F. Sullivan**, president and chief executive officer of the shipyard; **Capt. Charles L. Mull**, the Navy's Supervisor of Shipbuilding at the yard; **Comdr. Oscar J. Hickox**, FFG Program Representative from Naval Sea Systems Command; **William E. Haggett**, executive vice president of the shipyard, and **Carl F. Bryant**, assistant program manager of the FFG ships.



ITT Decca Marine Forms New Marketing Services Department



John G. Smith

Advertising, Public Relations and Market Research at ITT Decca Marine are now under the direction of **John G. Smith**.

Mr. Smith will headquarter at the company's Palm Coast, Fla., facility. His association with Decca dates back to 1974, and includes market research and analysis in various product areas, and sales forecasting in several phases of

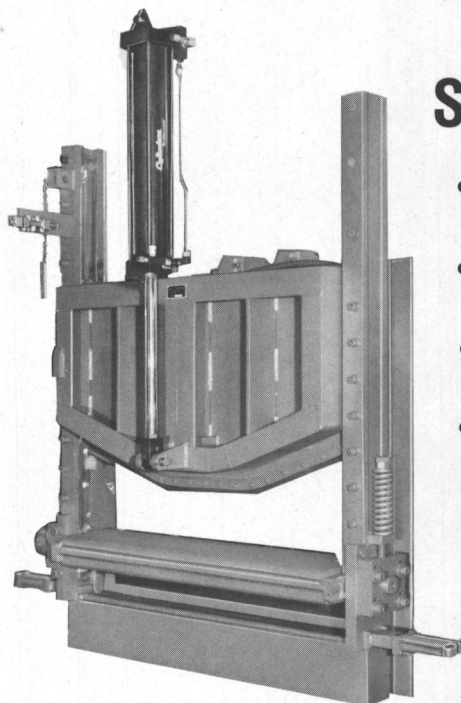
the marine industry, and new product planning.

He headed the Communications Products Section, coordinating technical and marketing activities with sales. Mr. Smith most recently served as deputy director of Engineering Services where he was involved with ITT Decca's Loran C, Elac Echounders and Autopilots, along with VHF, SSB radiotelephones.

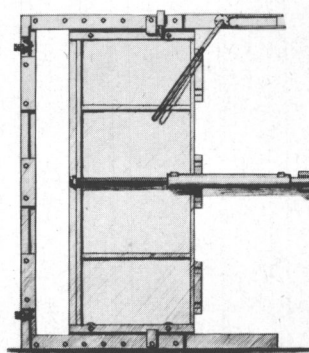
Prior to joining ITT Decca, Mr. Smith was senior sales correspondent for aeronautical and automotive products for International B.F. Goodrich, where he was active in sales, budget planning and forecasting. He obtained his B.A. degree from St. Peter's College and his MBA degree from Fordham University, majoring in marketing and management. He served as a first lieutenant in the U.S. Army.

The new department at IDM is part of the vast "external improvement" push the company has launched as a part of their long-range plan for expansion.

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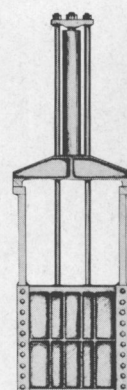
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\$4.5-Million Loan For Northern Metals Marine Terminal

General Electric Credit Corporation has closed a \$4.5-million interim first mortgage loan on the Northern Metals Marine Terminal, a 40-acre port facility on the Delaware River in Philadelphia, Pa.

The 10-year loan is secured by

a 184,000-square-foot dockside terminal, a 24,000-square-foot office building, and the rail-improved real estate.

The borrower is Northern Associates, a Pennsylvania partnership, which owns and operates the bulk cargo storage facility.

The mortgage was arranged by GECC loan representative **Ron Macklin** of the Bethesda, Md., Eastern States Real Estate Financing Office, through broker

Kevin Coady of J.R. Daly & Son, Inc., New York, N.Y.

According to Mr. Macklin, GECC's loan is based on the value of the complex as a general-purpose dockside warehouse facility.

"The continued growth of the Port of Philadelphia, the market requirement for bulk cargo facilities, and the knockdown value of the complex all were taken into account in evaluating the loan,"

Mr. Macklin noted. "This philosophy, to appreciate the inherent real estate value in a special-purpose property, is part of GECC's creative approach to financing."

The General Electric Company subsidiary has been active in real estate financing since 1969. It specializes in interim term first mortgages, second mortgages and wrap-around mortgages on a variety of income-producing property.

Robert Ivey Joins Mississippi Marine Towboat Corporation

Veteran shipbuilder **Robert Ivey** has been named to the newly created position of manager of repair services for Mississippi Marine Towboat Corporation, Greenville, Miss., according to MMTC president **John Nichols**.



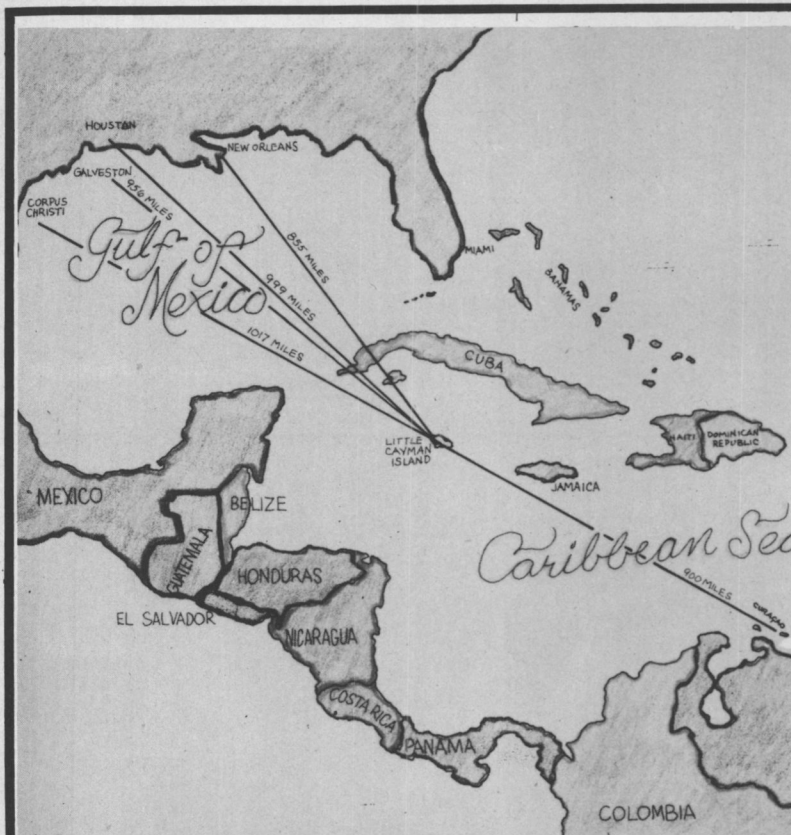
Robert Ivey

Mr. Ivey is a Vicksburg, Miss., native, and comes to MMTC from Zapata Offshore in Houston, Texas., where he served as construction superintendent on offshore drilling rigs, including semisubmersibles, drillships, jackups and platforms. During the five years he worked for Zapata, his responsibilities covered not only new construction, but also supervising the conversion of a 410-foot bulk ore carrier into a drillship with an 8-point mooring system capable of drilling in 600 feet of water. His work included projects in foreign yards as well as numerous projects in U.S. shipyards.

Prior to working for Zapata, Mr. Ivey was employed by Marathon LeTourneau in their Vicksburg and Houston operations. Mr. Ivey started with R.G. LeTourneau in the early 1960s. While at LeTourneau he worked in quality control, in the physical construction of drilling rigs, in estimating, contract administration and in the movement of the rigs from the Vicksburg construction site to Belle Chasse, La., where the drilling units were completed and delivered to the owners.

Mr. Ivey brings a large amount of experience in steel erection and planning to Mississippi Marine.

Mississippi Marine Towboat Corporation, founded in the mid-1960s, specializes in all phases of marine construction and repair. The firm employs 80 people, and is located on the Greenville harbor front.



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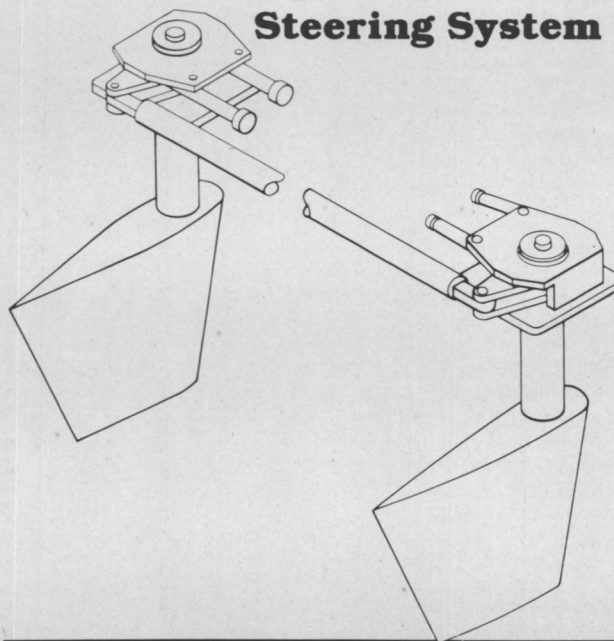
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Bay Shipbuilding Delivers Bulk Carrier M/V Buffalo To American Steamship Company



Mayor James D. Griffin of Buffalo, N.Y., greets Mrs. James J. Glasser, wife of the president of GATX Corporation, prior to the christening of the M/V Buffalo, a \$25-million Great Lakes carrier named in honor of New York's second largest city.

The M/V Buffalo, newest addition to the American Steamship Company's (ASC) Great Lakes fleet, was christened on August 2 in Sturgeon Bay, Wis. The \$25-million, 635-foot carrier was named in honor of Buffalo, N.Y., ASC's home port city. ASC is a subsidiary of GATX Corporation, Chicago, Ill.

Mrs. James J. Glasser, wife of the president of GATX Corporation, was the Buffalo's sponsor. She highlighted the colorful event when she shattered a bottle of New York State champagne on the ship's bow, accompanied by band music and applause from a large crowd of spectators.

James D. Griffin, Mayor of the City of Buffalo, was the principal speaker at the ceremony, which was held in the yard of the Bay Shipbuilding Corporation, a subsidiary of The Manitowoc Company, Inc. As part of his remarks, Mayor Griffin stated: "With the help of the shipping industry, the Great Lakes will combine to play a vital and prominent role in the lives of the residents of Buffalo and other major cities. Such a partnership will make our respective voyages both safe and successful." Following the christening, dignitaries and guests, who included government and corporate officials and their families, attended a luncheon at the Leathem Smith Lodge in Sturgeon Bay.

The Buffalo's flexible design enables her to carry iron ore pellets, coal, and other bulk commodities. Her 635-foot length—slightly longer than two football fields—will permit the ship to use port and dock facilities that would be inaccessible to larger carriers.

The vessel has a 68-foot beam

and a midsummer draft of 27 feet 11 inches. She has an unloading rate of 6,600 long tons of iron ore pellets an hour, and a capacity of 24,000 long tons of iron ore pellets. Her two diesels will provide 7,000 shaft horsepower, and will enable the Buffalo to transport cargoes at a service speed of 15.5 miles per hour.

The ship is the seventh new carrier to enter service since 1973 in ASC's current building program. This has added 250,000 long tons of new capacity to the ASC fleet, which now totals 20 vessels. The company has been headquartered in Buffalo since 1907, and both it and the city have been major contributors to the growth of commerce on the Great Lakes.

GATX provides major financial services worldwide, including the leasing of aircraft, railcars, barges, offshore drilling equipment and other capital assets; owns and operates fleets of oceangoing and Great Lakes vessels, as well as bulk liquid terminal facilities; engages in banking, insurance and real estate and construction financing; and manufactures heavy industrial and transportation equipment.

Alexander & Baldwin Appoint R.J. Pfeiffer

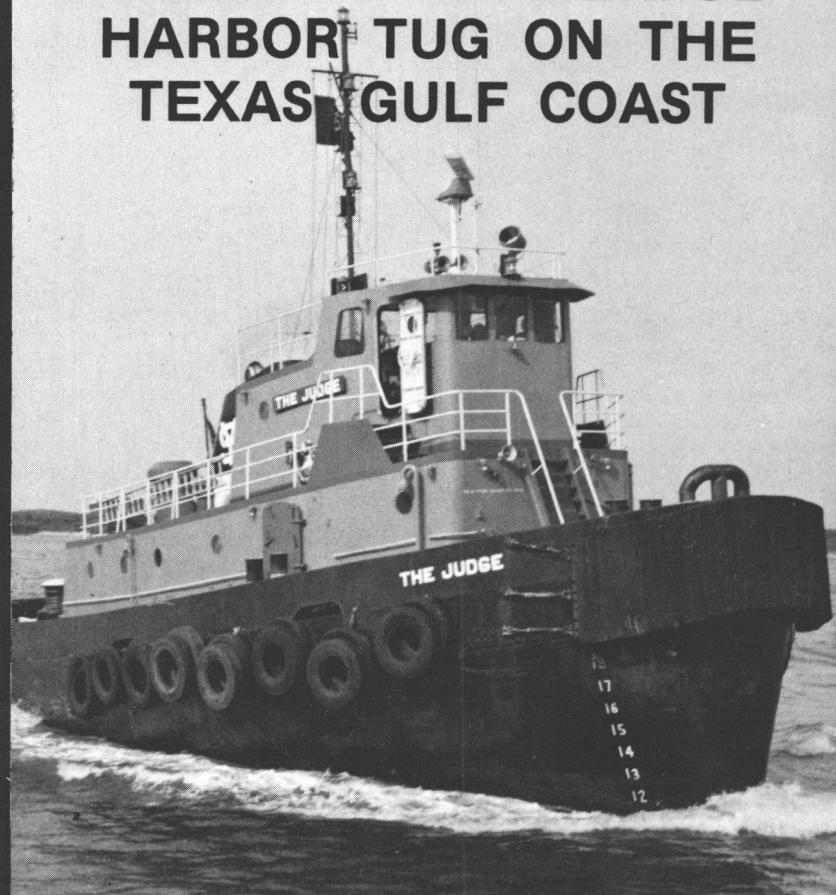
R.J. Pfeiffer, president and chief executive officer of Matson Navigation Company, San Francisco, Calif., has been appointed to the board of directors of Alexander & Baldwin, Inc. of Honolulu, Hawaii, Matson's parent company. Mr. Pfeiffer is also executive vice president of A&B.

He succeeds George Ishiyama, president of the Ishiyama Corporation, San Francisco, who resigned from the A&B board.



FIRST OF TWO FOR REINAUER — Equitable Shipyards, Inc., New Orleans, La.-based shipbuilder, has launched the first in a series of two oil barges for Reinauer Transportation Company, Inc., Newark, N.J. The 227-foot by 43-foot by 15-foot barges will handle Grade A and lower product. The barges are built to ABS ocean service rules and for manned service. Equitable is a wholly owned subsidiary of Trinity Industries, Inc. of Dallas, Texas, a manufacturer of industrial marine and structural metal products.

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Navy Awards IMODCO Development Contract For Portable SPM

The United States Navy has signed a contract with IMODCO, a unit of AMCA International Corporation, for the development of a portable Single Point Mooring catenary buoy for quick deployment in support of naval amphibious operations.

A major specification calls for the SPM to weigh less than half of a regular offshore terminal. It would be transportable by aircraft or on an amphibious surface warfare vessel. Through utilization of a unique device, the SPM is to be installed and become operational in approximately one-third the time of a typical commercial SPM.

Satisfactory completion of the development contract will pave

the way for authorization of actual construction, IMODCO officials state.

The Navy contract is not the first for IMODCO. The Los Angeles-headquartered company delivered to the Navy an SPM for use in Subic Bay, the Philippines, in 1967. It also provided offshore marine terminals to the U.S. Air Force and the U.S. Army (also in 1967), and again for these two

military departments in 1968, all for service in the Far East.

In all, IMODCO has previously designed, engineered, constructed and installed six SPMs for the U.S. military for service in the typhoon-swept waters of the Western Pacific.

IMODCO is the pioneer in the development of offshore marine terminal systems, while AMCA International is a diversified corporation engaged in the manufacture and sale of a variety of industrial and consumer products, structural steel fabrication, the design and construction of refineries and process plants, and in the distribution of refined petroleum products.

William H. Vaught Named President Gulfcoast Transit

William H. Vaught has been appointed president of Gulfcoast Transit Company, 4251 Henderson Boulevard, P.O. Box 18443, Tampa, Fla. 33609.



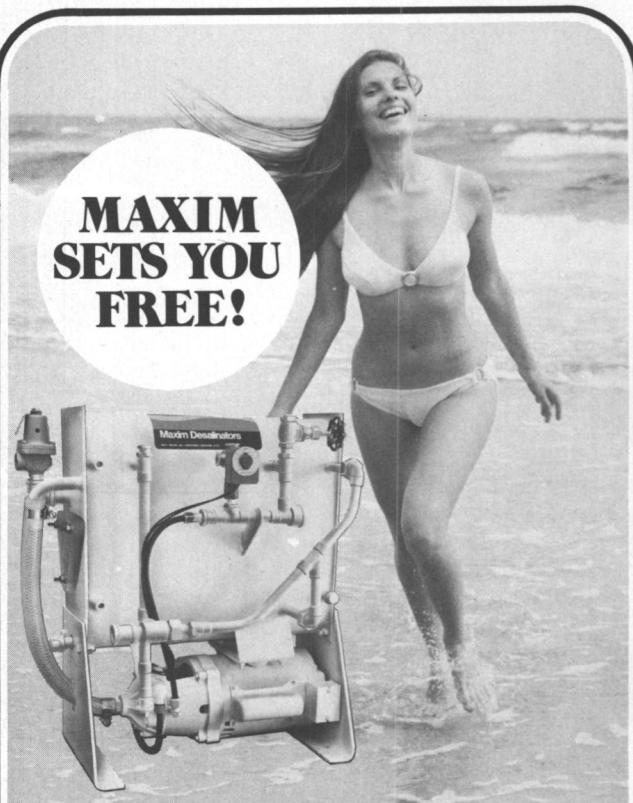
William H. Vaught

Mr. Vaught is a veteran of more than 20 years' management experience in the shipping industry. He has been associated with Gulfcoast Transit Company since 1959, most recently as executive vice president. He replaces Capt. Noble L. Gordon, who is retiring from Gulfcoast Transit Company, but will serve the company as chairman of the board.

Affiliated with Mid-South Towing Company, also based in Tampa, Gulfcoast Transit is a contract carrier operating tugboats and oceangoing covered hopper barges on the East, West, and Gulf Coasts, Hawaii and the Caribbean. Mid-South operates towboats and open hopper barges on the lower Ohio and Mississippi Rivers.

Coastal Marine Names Robert W. Dickieson

Coastal Marine, Inc., 126 Queen Street, Suite 109, Honolulu, Hawaii 96813, has announced the appointment of Robert W. Dickieson as its president and chairman of the board of directors. Mrs. Nelson K. Tanaka was appointed as treasurer. Coastal Marine, Inc. is engaged in dredging operations and related marine activities in the state of Hawaii.



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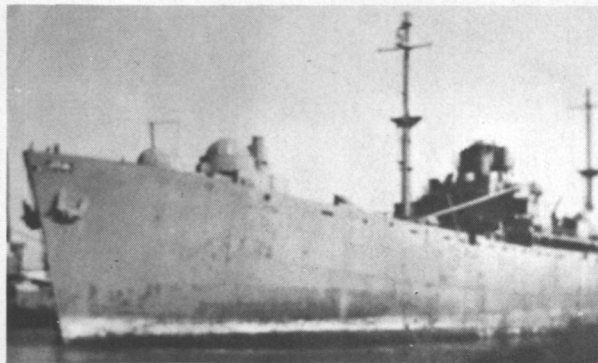
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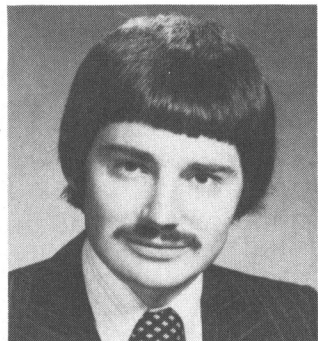
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Waukesha Engine Names Donald E. Bates To Sales Post in Kuwait

Donald E. Bates has been appointed sales engineer in the International Sales Group of Waukesha Engine Division, Dresser Industries, Inc.



Donald E. Bates

Based in Kuwait, Mr. Bates will cover Egypt, United Arab Emirates, Bahrain, Oman, Yemen, Pakistan and Afghanistan. He is responsible for distributor sales of the division's complete line of diesel and gas engines and power generation equipment in those countries.

Mr. Bates came to Waukesha Engine from GEC Gas Turbines, Whetstone, England, where he was project engineer. His background also includes technical marketing experience with an Australian distributor for the English firms of Mirrlees-Blackstone and Brush Electrical Equipment.

A 1970 honors graduate of Cambridge University, Mr. Bates holds a degree in engineering.

Waukesha Engine Division is a manufacturer of heavy duty diesel and gas engines for the petroleum, marine, off-highway, and power generation markets. It also makes power generation equipment for prime and stand-by use.

APL Names Kenneth Passe Mgr. Offshore Operations

Kenneth H. Passe has been named manager, offshore operations-Pacific Northwest for American President Lines, Ltd., assuming the position held by Capt. Harry Greenwood, who has retired after almost 27 years of service with APL and its former subsidiary, American Mail Line. The announcement was made by APL vice president-Marine Operations Charles M. Deering.

A native of Seattle, Wash., Mr. Passe returns to the Pacific Northwest after serving four years in APL's headquarter offices in Oakland, Calif., as system-wide manager of facilities maintenance and repair. A 1969 graduate of the California Maritime Academy, he sailed with Grace and AML until returning to the University of Washington, where he received his B.A. degree in business. In 1973, he joined AML's Engineering Department, and following AML's merger into APL, he was transferred to San Francisco.

Captain Greenwood began his career as a cadet on the Canadian Pacific Railway's Empress passenger ships in the mid-1930s. Acquiring his deck officer's license, he sailed on the China coast with the Indo-China Steam Navigation Company until taken prisoner during World War II. He returned to the company in 1944, sailing out of Bombay to South Africa until the China coast opened again in 1945. He received

his master's license in 1946 and his first command in 1948. In 1952, he returned to Vancouver, British Columbia, then emigrated to Seattle to begin his long career with AML/APL.

In announcing Captain Greenwood's retirement, Mr. Deering commented that we all wish to thank him for the many years of dedicated service he has contributed, first to American Mail Line, then to American President Lines.

Planning Research Promotes Paul Coyle

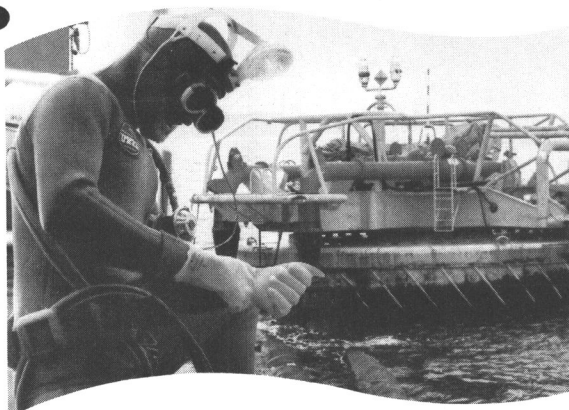
Lt. Comdr. Paul D. Coyle, USN (ret.), was promoted recently to site manager of Planning Research Corporation, Maintenance Systems Group, 4898 Ronson Court, San Diego, Calif. 92111.

Mr. Coyle is presently serving as secretary-treasurer of the San Diego Section of the American Society of Naval Engineers.

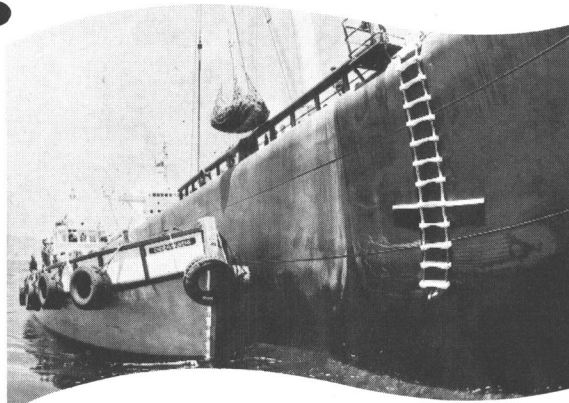
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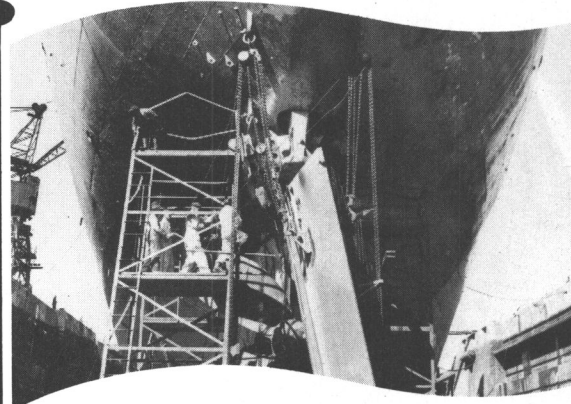
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Tokyo Marine Services Starts Trans-Pacific Drydock Tow

Launching ceremonies for the Port of Portland's giant 982-foot Dry Dock 4 were held on August 8 in Kure, Japan, at Ishikawajima-Harima Heavy Industries' (IHI) shipbuilding center.



The Port of Portland's new, 982-foot-long floating drydock is shown nearing completion in Kure, Japan.

A delegation of Oregon public and labor officials, port commissioners and key port staff personnel were on hand for the launching.

Tokyo Marine Services started the 5,200-mile trans-Pacific tow on August 13. A direct route will be followed from Japan to the northern California coast and up the Pacific Coast to the Columbia River. Willamette Tug and Barge Co. will take the drydock under tow outside the Columbia River bar and complete the journey up the Columbia and Willamette Rivers to the port's Swan Island Ship Repair Yard. Arrival in Portland is scheduled for October 1.

When the drydock arrives in Portland, it will undergo a \$2.6 million outfitting by Northwest Marine Iron Works, including installation of dewatering pumps, major electrical equipment, utility line connections, access equipment and touch-up painting.

While the drydock undergoes outfitting, work will continue on the Peter Kiewit Sons' contract for the 3,000-foot-long outfitting pier and ship repair berths at Swan Island. Also underway by mid-October will be erection of six Hitachi cranes. Five of these will be positioned on the new finger pier and one will be on the new drydock wing wall.

Work will be underway on the new ballast water treatment plant and on completion of the new utility plant to serve the expanded shipyard.

Dry Dock 4 will go into service on February 1, 1979, when the S/S Overseas Chicago goes up on the blocks for maintenance and inspection. The ship is owned by Overseas Shipping Group Inc., and is 894 feet long and 105 feet wide. It is involved in the movement of Alaskan crude oil, as are four other large ships that already are booked for Dry Dock 4 during 1979.

Dry Dock 4 will be the largest floating drydock on the West Coast and the third largest in the world. It is 982 feet long with 185 feet clear width between fenders and will lift 81,000 long tons. The drydock has been designed to serve ships in the 120,000 to 275,000-deadweight-ton class.

Construction of Dry Dock 4 involved use of 19,300 tons of steel, 420 tons of paint, 300 tons of piping, 1,300 tons of machinery, 600 tons of electrical equipment, and approximately 1,100 tons of ship service equipment.

The shipyard expansion project was authorized by tri-county voters in November 1976, with approval to issue \$84 million in general obligation bonds. This obligation is

expected to come off the tax rolls in three to five years, when the facility becomes self-supporting.

IHI's successful bid on the floating drydock portion of the Swan Island expansion was \$17.5 million. About half of this amount was spent by IHI in the United States, with Oregon companies providing parts and components, outfitting and transportation.

The Oregon firms sharing in drydock contracts include Northwest Marine Iron Works, \$2.6 million drydock outfitting; Willamette Tug and Barge Co., \$145,000 (estimated), transportation; and Fabri-Valve, components, \$380,000.

The Swan Island Ship Repair Yard is the only major publicly owned, privately operated shipyard in the country. While the yard is owned and maintained by the Port of Portland, all actual ship repair is performed by local private contractors on a competitive bid basis.

Quaker Chemical Corporation Acquires Selby, Battersby—David Kollock Named President

Quaker Chemical Corporation, Conshohocken, Pa., has acquired all outstanding common and preferred stock of Selby, Battersby & Co. of Philadelphia. Selby, for more than 50 years, has been a manufacturer of flooring systems for industrial, commercial, and institutional buildings, marine decking materials, as well as a deck covering contractor for the marine industry.

Quaker Chemical Corporation produces a wide range of chemical specialty products for use in industrial processing and has international affiliates in Great Britain, Holland, Spain, Italy, Japan, South Africa, Brazil, Australia, and Mexico.

The purchase of Selby, Battersby is the first major U.S. acquisition by Quaker and is viewed by Peter A. Benoliel, Quaker president, as an entrance into the dynamic resin specialty field.



Joseph F. O'Donnell, senior vice president (left), and David P. Kollock, president (right), Selby, Battersby & Co.

David P. Kollock, who succeeds James M. Selby as president and chief executive officer of Selby, Battersby, has an extensive background in resin specialties and over 14 years' experience in the international marine industry. He is a graduate of the Wharton School of the University of Pennsylvania, a member of The Society of Naval Engineers, and was formerly executive vice president of Philadelphia Resins Corporation.

Mr. Selby, son of the company founder, will serve as a consultant to Selby, Battersby, and has been named to the Selby, Battersby board of directors.

Joseph F. O'Donnell will remain as senior vice president, and Dean S. Champlin as vice president, marine. James J. Costigan, treasurer, will take on the additional position of vice president, administration and contracts, with primary responsibility for administer-

ing Selby, Battersby's major application contracts on Navy shipbuilding programs.

Quaker Chemical's products are sold on a worldwide basis through an extensive network of sales engineers supported by overseas manufacturing and technical laboratories. Selby, Battersby will now be able to offer the international marine market more timely delivery of their specialty products. In addition, Selby will market specialty products of Quaker that have marine application. Foremost in this category will be Quaker's fire-resistant hydraulic fluids which have important advantages over phosphate ester and water glycol-based materials.

Shell Int'l Marine Contract For British Ship Research Assn.

An important contract to carry out ship motion calculations in respect of numerous different types of vessels in the Shell fleet has been won by the British Ship Research Association. This data will be used in studies covering the performance of ships in different ballast conditions (including IMCO minimum drafts), the use of tankers in the off-shore industry, such as floating storage units and offtake vessels, and in other miscellaneous work.

On behalf of Shell International Marine, BSRA will calculate longitudinal and lateral motions—such as pitch, heave, roll, yaw and sway—for the various categories of vessel in the fleet, ranging in size from 5,000 to 500,000 deadweight tons and including LNG and products carriers as well as VLCCs. The calculations are designed to predict behavior in several load conditions for a series of sea states, speeds, and headings.

Amber Line, Inc. Formed To Operate Container Service New York To Hamilton, Bermuda

G.P. Toomey & Associates, Inc. of Elizabeth, N.J., and Wm. E. Meyer & Co. Ltd. of Bermuda jointly announce the formation of Amber Line, Inc., a new containerized ocean shipping company. Amber Line will provide a regular weekly service between Howland Hook, Staten Island, N.Y., and Hamilton, Bermuda.

Sailing every Thursday from New York, commencing August 10, with Sunday arrival in Bermuda, the motor vessel Nordbalt will serve the trade with a capacity of 111 dry and refrigerated 20-foot boxes.

The senior management of Amber, headed by Gerald P. Toomey, are all former executives of Sea-Land Service and Puerto Rico Management, Inc.

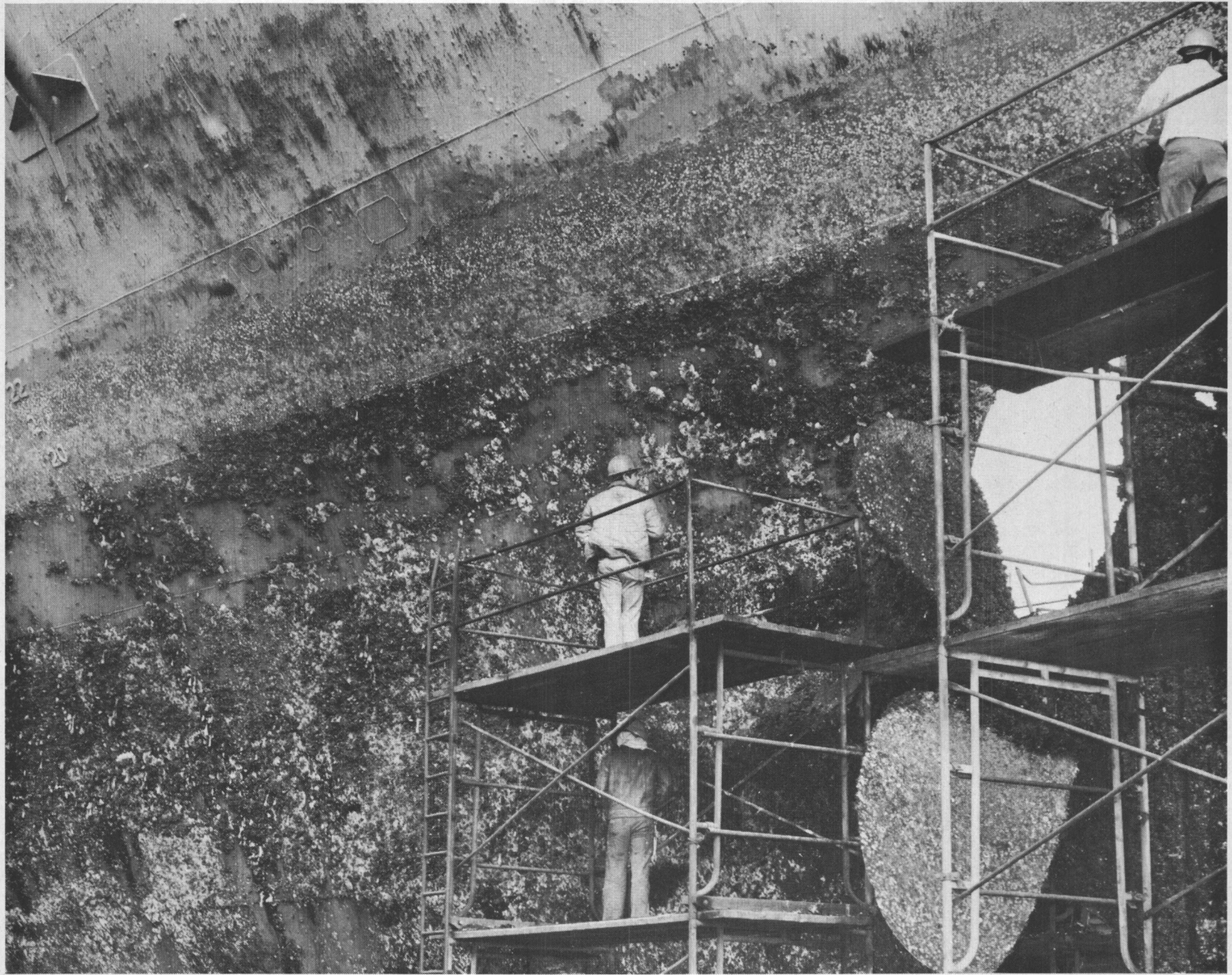
Texaco Overseas Announces Oil Discovery Offshore Nigeria

An oil discovery, approximately six miles offshore and 90 miles west-southwest of Port Harcourt, Nigeria, has been announced by Texaco Overseas (Nigeria) Petroleum Co.

Texaco Overseas (Nigeria) is operator of the offshore license totaling 123,000 acres, held jointly with the Nigerian National Petroleum Corp. and Chevron Oil Co. (Nigeria).

The discovery well, Funiwa No. 1, flowed at a rate of 1,007 barrels of oil per day. It is located in 40 feet of water three miles southeast of the North Apol Field. Its commercial potential will be determined following delineation drilling and economic evaluation.

The Nigerian National Petroleum Corp. holds a 55-percent interest in the concession, and Texaco Overseas (Nigeria) and Chevron Oil Co. (Nigeria) each hold 22.5 percent.



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Largest Vertical Submerged Screw Pumps Successfully Tested At Delaval Turbine

Performance tests were recently completed at Delaval Turbine Inc., on the largest vertically submerged screw pump systems ever built. Designed by engineers at the IMO Pump Division of Delaval and built at Delaval's Trenton, N.J., plant, the three units are each over 40 feet (12.2 meters) in length and are to be shipped to a Gulf Coast location for installation on an ocean barge for unloading and stripping service.



Fifty-foot Delaval GTS vertical pump system on the manufacturing floor at IMO Pump Division.

Each of the pumping systems comprises a right-angle drive, ratio 1.2:1, mounting bracket and discharge flange, discharge pipe, stainless steel three-piece drive shaft and GTS™ geared twin-screw pump with independent seal balance and lube systems. The pump is driven by a 1,000-hp diesel engine through a 4:1 control fluid coupling to supply a capacity of 5,500 U.S. gallons per minute (approximately 7,860 barrels per hour) (1,250 cubic meters/hour). The pump is rated for speeds up to 1,000 rpm, and a maximum discharge pressure of 165 pounds per square inch (1,100 kPa) for liquids ranging from seawater up to crude at 8,000 SSU (190 cst).

The unloading systems feature the use of external timing gears and bearings which are isolated from all pumpage. A unique pressure balancing and lubricating system serves to lubricate and cools the external gears and bearings, as well as to control differential pressure across the mechanical seals. The working fluid therefore cannot contaminate the lube oil.

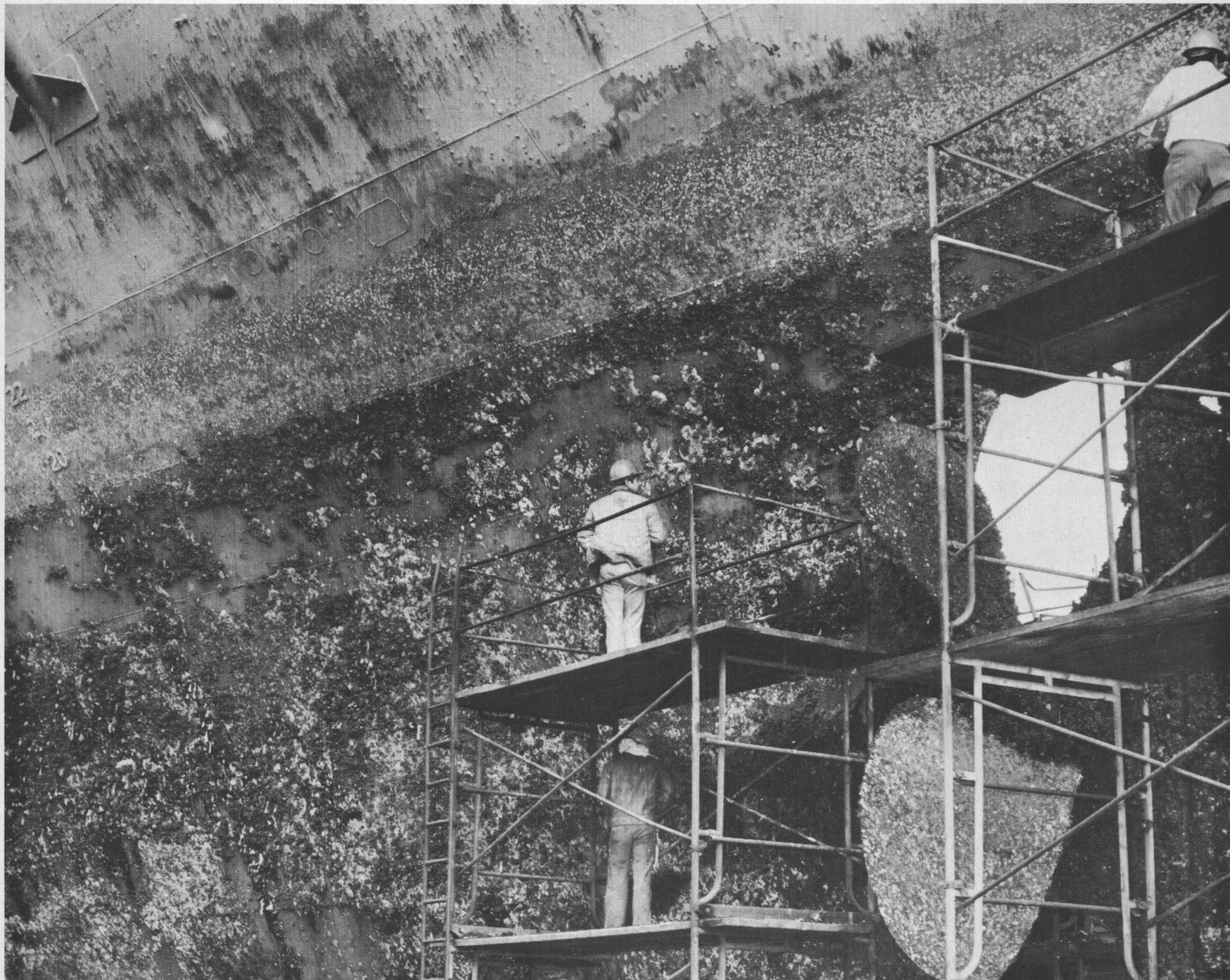
Delaval Turbine Inc., a Transamerica Company, has 15 operating divisions at 18 manufacturing locations worldwide. The company makes a line of industrial products, including compressors, condensers, connectors, controls, diesel engines, fasteners, filters, forgings, gearing, pumps, sensors, turbines and valves.

Quick Release Mooring Hooks Brochure Available

Alexander Marine Associates Inc. have announced that they have been appointed exclusive sales representatives for the East Coast of the U.S.A. by Kimman B.V. Kimman design and manufacture quick release mooring hooks presently up to 200 tons capacity.

For a copy of the quick release mooring hooks brochure, write to Alexander Marine Associates Inc., P.O. Box 1048, Port Washington, N.Y. 11050.

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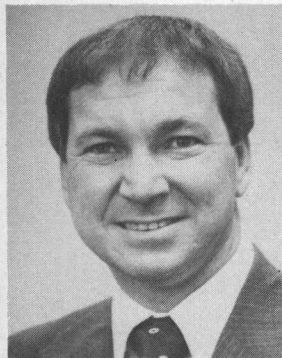
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For a copy of the quick release mooring hooks brochure, write to Alexander Marine Associates Inc., P.O. Box 1048, Port Washington, N.Y. 11050.

Sea-3, Inc. Names Two New Vice Presidents

In its further commitment to handle substantial increases of oceanborne imports of LPG in the near future, Sea-3, Inc., Houston, Texas, a Gazocean Group Company, has appointed two new vice presidents.



Jerome W. Jackson



W. Roger Roark

Jerome W. Jackson has been named vice president of marketing for the East and West Coasts, with primary emphasis on butane and propane market development to the East Coast suppliers. He will also be concerned with the terminal operations at Newington, N.H., and the further development of two additional import facilities.

Mr. Jackson, who holds a B.S. degree in general engineering from the University of Portland, Ore., recently left Shell Oil Company's head office, where he had been the senior account representative for LPG sales.

W. Roger Roark, as vice president of marketing for the mid-continent, will be responsible for marketing into the Midwest area, principally by exchange. His duties will also include the increasing of Sea-3's trading activities in natural gas liquids and associated petroleum products.

Mr. Roark, a graduate petroleum engineer from the University of Kansas, is a native of Tulsa, Okla., and was most recently the LPG coordinator for Petroleum Trading and Transport Company in that same state.

Sea-3, Inc., a Gazocean Group company, handles the group's U.S. marketing of imported LPG and domestic trading. It first became committed to the importation of LPG when it opened its 400,000-barrel marine terminal at Newington, N.H., in 1975.

Gazocean, a Paris, France-based company, started shipping LPG in 1954, and currently handles over 25 percent of the world's growing LPG ocean transport market through its 30 different shipping, trading, storage, and engineering companies around the world. Its fleet of 60 sophisticated gas-carrying ships, which represents the largest such fleet in the world, is well positioned to deliver the substantial increases of LPG imports projected for the U.S. and other major industrial countries.

Dart Containerline Appoints Richard Shellenbach

Conrad H.C. Everhard, president and chief executive officer of Dart Containerline Inc., announced the appointment of **Richard J. Shellenbach** as vice president of U.S. sales and an officer of the company. **Mr. Shellenbach**, a graduate of Holy Cross College, has spent 27 years in the transportation field.

After a brief career in professional baseball, he held several sales and operations positions with McLean Trucking Co. over a period of 16 years. In 1967, he joined Sea-Land Service, where he was general sales manager of various divisions, and a director of corporate accounts.

He joined Dart Containerline in early 1978 as assistant vice president of corporate accounts, and special assistant to the president.

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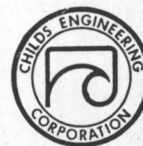
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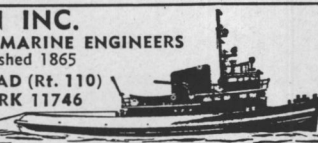
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**Marinette Marine Corp
Promotes Robert Sunstrom**

Marinette Marine Corporation, Marinette, Wis., has announced the appointment of **Robert Sunstrom** to the position of personnel manager. His operational responsibilities will include shipyard manpower recruitment and administration, as well as grievance procedure and union relations.

Mr. Sunstrom has been employed by Marinette Marine since February 1976, and had served as supervisor-employee relations prior to his recent appointment.

He received a Bachelor of Arts degree and a Master of Arts degree from Michigan State University in 1973 and 1975, respectively, and graduated from Menominee High School in 1969.

Mr. Sunstrom is an advisory board member of Alpha Omega Halfway House, and serves on the Marinette United Fund board of directors.

**British Shipbuilders Appoint
C.L. Hudson To Hong Kong Post**

State-owned British Shipbuilders has appointed a director for its branch office in Hong Kong. He is **C.L. Hudson**, a marine consultant who has been directly associated with the U.K. shipbuilding industry since 1951.

Until 1970, Mr. Hudson was the Far East sales director of the Upper Clyde Shipbuilders, a post from which he resigned to take up a position with a prominent Hong Kong shipping and shipbroking company. He left this post in 1975 to set up his own consultancy.

The Hong Kong office of British Shipbuilders, which will be opened shortly, will be responsible for winning orders for the British shipbuilding industry from the Far East and Australasia, as well as from the vast shipping interests of Hong Kong itself. Special attention will also be given to the shipbuilding needs of developing nations within the area.

Until permanent offices are opened, Mr. Hudson will operate from his existing office in Room 301, Rediffusion House, 77 / 79 Gloucester Road, Hong Kong.

**Harland And Wolff To Build
Iron Ore Carrier For Orion**

Harland and Wolff, the Belfast, Northern Ireland shipbuilder, has received an order to build a 120,000-dwt bulk iron ore carrier to be delivered toward the end of 1979.

The vessel, ordered by Orion Leasing of London, has been specifically designed for the carriage and discharge of iron ore. It is to be chartered to the British Steel Corporation.

Harland and Wolff states that, though geared specifically for the iron ore trade, the vessel will retain the flexibility of a bulk carrier.

It will be 261 meters length overall (about 856 feet) with a breadth of 40 meters (131 feet), and will have a service speed of around 15 knots.

The carrier will be powered by a Harland and Wolff-Burmeister and Wain marine diesel engine developing 24,800 horsepower. The engine will also be built in Belfast.

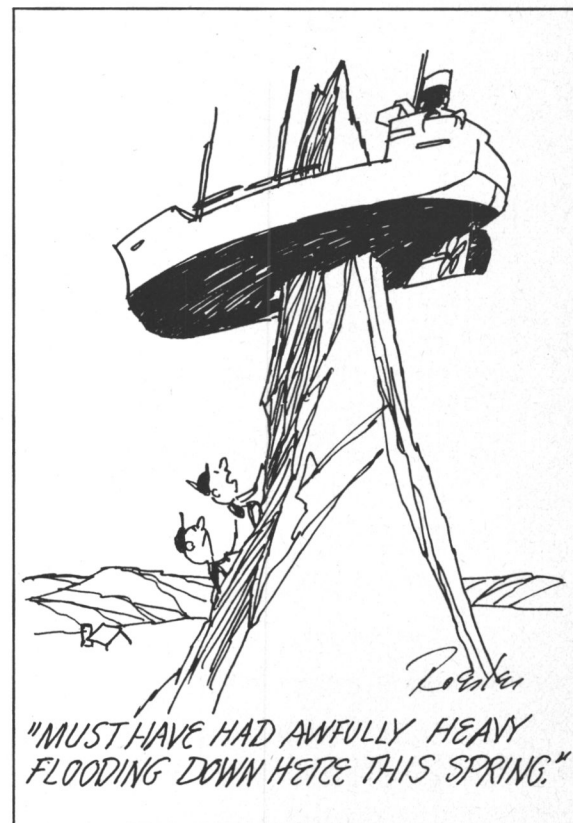
**Brochure Describes TBC/EW
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Tacoma Boatbuilding Co., Inc., U.S. licensee for the marketing and fabrication of the Escher Wyss Controllable Pitch Propeller, has available a well-illustrated 30-page full-color brochure which describes the unique features of their system. Included are photographs of installations, system description with cutaways, and design data for proper propeller and material selection.

Escher Wyss has been a major manufacturer of controllable pitch propellers for over 40 years. Presently, over 1,300 Escher Wyss CP propellers are in service, including the world's most powerful, a 24-foot-diameter system which absorbs 46,000 horsepower.

Tacoma Boatbuilding Co., Inc. has developed considerable experience and capability with controllable pitch propellers through the manufacture, installation and testing of such systems over the past several years.

For a copy of the brochure, write **Herb Streb**, Chief Engineer, Tacoma Boatbuilding Co., Inc., 1840 Marine View Drive, Tacoma, Wash. 98422.



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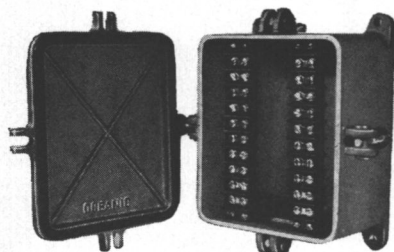
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California SNAME Sections Announce Joint Meeting

The Los Angeles Metropolitan Section of The Society of Naval Architects and Marine Engineers (SNAME) has announced details of the California Sections joint meeting, to be held in conjunction with the Northern California Section and the San Diego Section on October 13, 14 and 15. The meeting place is the Marriott Biltmore Hotel in Santa Barbara.

This is an annual affair for the California members of the Society, at which one of the sections acts as the host. For this year, it is the Los Angeles Metropolitan Section, and once again the committee selected the familiar site where they have gathered before. The theme for the joint meeting is "ENERGY—Transportation, Estimation and Regulation." The papers to be presented on Saturday morning will address these matters in a reverse order to that indicated by the theme statement.

1. "Regulatory Process for New Marine Related Energy Projects," by **Joseph W. Kock Jr.**, supervisor-Marine Transportation, Pacific Marine Associates, and Western LNG Terminal Associates.

2. "Estimating for Offshore Energy Development," by **Harold D. Ramsden**, manager-Program Development, Global Marine Development Inc.

3. "Alaskan Transportation—An overview of some aspects of transporting Alaskan crude oil," by **Stanley Factor**, senior naval architect, and **Sandra J. Grove**, senior evaluation analyst, Atlantic Richfield Co.

These meetings also have a social aspect associated with them. Those attending, members, guests and visitors are all encouraged to invite their wives. The arrival and registration on Friday evening is usually the occasion for meeting friends, renewing acquaintances and making new ones. The following morning, while the formal events of the meeting are in session, separate activities will be arranged for the ladies, followed by a joint luncheon with the members at noon. In the evening, there will be a dinner-dance, to which all are invited. For Sunday morning, a special brunch is planned at a prominent local restaurant.

Robert T. Young, national president of SNAME, will be the guest speaker at the Saturday afternoon luncheon. Another distinguished guest at the meeting will be **Robert G. Mende**, secretary and executive director of SNAME.

The acting chairman for this meeting is **Robert R. Rourke**, West Coast represent-

ative, J.J. Henry Co. His assistants for papers and arrangements are **John R. Malone**, General Electric Marine, and **C. Richard Schaeffner**, Global Marine Development Inc.

For more information, contact **William A. Hood**, West Coast Shipping Co., 1052 West Sixth Street, Los Angeles, Calif. 90051.

Dravo International

Appoints Richard Parsons

Richard E. Parsons has been appointed area director, Europe, for Dravo International. Based in Pittsburgh, Pa., he will be responsible for coordinating Dravo Corporation's marketing and sales efforts with regional representatives in that area.

Mr. Parsons has been with Dravo for 17 years, primarily in engineering and project management for the company's Minerals & Metals Division. A 1961 graduate of Lehigh University in mechanical engineering, **Mr. Parsons** holds an MBA degree from the University of Pittsburgh, and is a registered professional engineer in Pennsylvania.

Headquartered in Pittsburgh, Dravo is a diversified engineering, construction and manufacturing firm involved in power generation, pollution control, chemical processing, petroleum, mining, minerals and metals processing, heavy construction, bulk materials handling, urban development, river transportation and shipbuilding.

Propeller Club Collecting

Funds To Send Liberty Ship Engine To Mariners Museum

Horne Brothers, Inc., a ship repair firm at Newport News, Va., has donated a Liberty ship engine from a vessel now being dismantled by them to the Mariners Museum, also at Newport News.

The Propeller Club, Port of Newport News, is sponsoring the drive to collect funds for the transportation of the engine to the Museum and installation of same in a suitable building.

The Mariners Museum is one of the largest marine museums in the United States, and the installation of this engine, along with other artifacts, would be a valuable acquisition for the museum and future generations. Donors will be suitably recognized.

Donations are tax deductible and should be sent directly to the Mariners Museum (Liberty Ship Engine Fund), Museum Drive, Newport News, Va. 23606.



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Participants will receive comprehensive documentation before a seminar. Only summary papers will be presented at the seminar to leave the maximum time for question and discussion.

The seminar team: directors of H.P. Drewry (Shipping Consultants) Ltd. London, assisted by Professor Victor Norman of the Norwegian School of Economics and Business Administration in Bergen.

Registration: to encourage active participation, to create an informal atmosphere and to promote meaningful discussion, the number of participants at each venue will be restricted to 100. Fees are \$425 per delegate, \$360 for subsequent registrations from the same company for attendance at one venue. Fees include all documentation, refreshments, two lunches and an evening social function.

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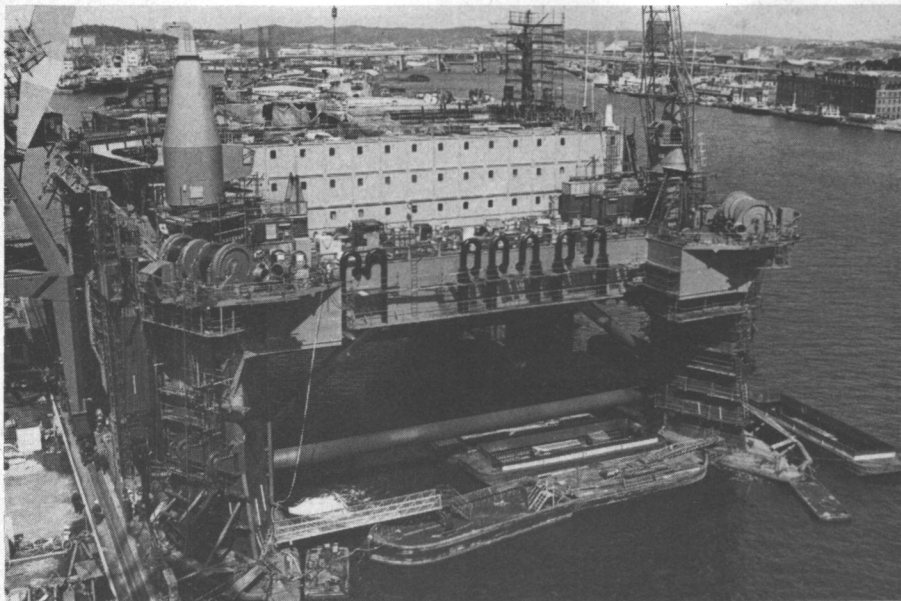
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Offshore Floatel To Accommodate 600 Workers



The Safe Astoria accommodations consist of 300 twin-berth cabins installed in container modules on three decks.

The first purpose-built accommodation platform in the world, ordered by Consafe Offshore AB of Goteborg, was recently named Safe Astoria at Gotaverken Cityvarvet, Goteborg, Sweden.

The Safe Astoria was named by Mrs. Lorraine Henderson, wife of J.H. Henderson, offshore construction manager at Chevron Petroleum (UK) Ltd., Aberdeen, Scotland.

The Safe Astoria is chartered by a British subsidiary of the American Chevron Group, Chevron Petroleum (UK), Ltd., for operation in the Ninian Field of the North Sea British Sector, south of the Norwegian Statfjord Field.

The Safe Astoria is to be used as a floating hotel (for which the word "floatel" has been coined) to

accommodate about 600 offshore workers on the North Sea, and has been designed and built to meet the new demands made for an even higher level of safety and comfort for offshore personnel at work on the oil rigs. Today, most of the offshore workers are located in installation platforms consisting of rebuilt drilling rigs.

The accommodation section of the Safe Astoria consists of 300 double-berth cabins installed in container modules at three deck levels on top of the platform. There are also living quarters for a crew of about 20 men. Inside the actual platform itself are facilities including the machinery, the galley, messrooms, recreation room, a cinema, a sauna and also offices and stores. The platform

is self-propelled and fitted with twin screws driven by four electric motors. Each of the pontoons is also fitted with bow thrusters. Electric power is produced by five diesel generators.

The platform is of the semisubmersible type and is of modified Aker/SRS construction, about 80 meters long (262 feet) and 53 meters wide (174 feet).

The Safe Astoria is the first semisubmersible unit ever built by a Swedish shipyard. Gotaverken Cityvarvet—responsible for building the platform itself and the accommodation modules—as a result of its skill acquired over many years and its modern facilities, has managed to complete this extremely sophisticated vessel in less than 12 months from the signing of the contract.

Biehl & Company Opens Tenth Office In Atlanta, Georgia

Biehl & Company, Inc.—ocean shipping company agents with nearly three-quarters of a century experience in all forms of overseas and inland cargo transit—have opened a 10th branch office, the most recent in Atlanta, Ga.

This was announced by George McCammon, marketing vice president for the company, headquartered in New Orleans, La. Mr. McCammon said that Bill G. Jones, former U.S. Gulf sales manager for a major steamship line, has been appointed area manager for the new Atlanta office, which will be responsible for Biehl & Company interests in the South

Atlantic area, as well as sales efforts in north and central Alabama, handled previously by the company's Mobile office.

Other Biehl & Company offices and services are located in Houston, Beaumont, Galveston, and Dallas, Texas; Savannah, Ga.; Memphis, Tenn., and St. Louis, Mo.

Mr. Jones, the area manager of the new Atlanta office, is coming back to his home town after a broad educational and shipping background. He attended the University of California at Los Angeles.

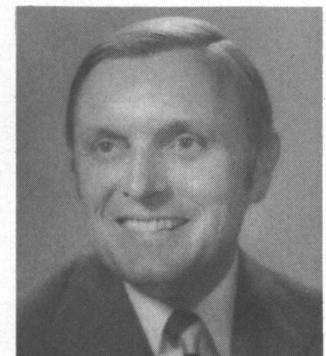
Biehl & Company serves as U.S. general agents for South Atlantic and U.S. Gulf operations of major ocean shipping companies whose operations are worldwide in scope.

According to Mr. McCammon, Biehl & Company is experienced with the handling of LASH (lighter aboard ship), container, roll-on/roll-off, as well as conventional shipping.

The address of the company's new Atlanta office is Suite 405, 1900 The Exchange.

Krupp International, Inc. Elects Helmut Schwarz

Carl G. Brimmekamp, president and chief executive officer of Krupp International, Inc., has announced that the board of directors has elected Helmut L. Schwarz to the positions of corporate vice president and acting deputy general manager of Krupp International, Inc. In addition to his new duties, Mr. Schwarz will continue to manage the company's Plants Division.

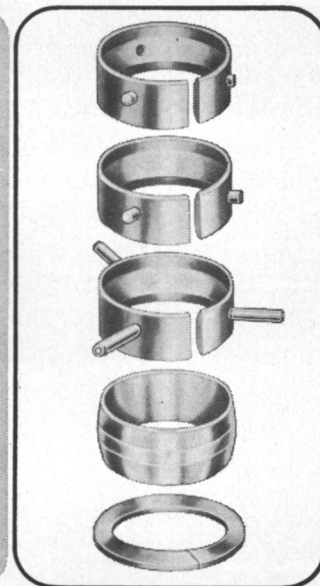
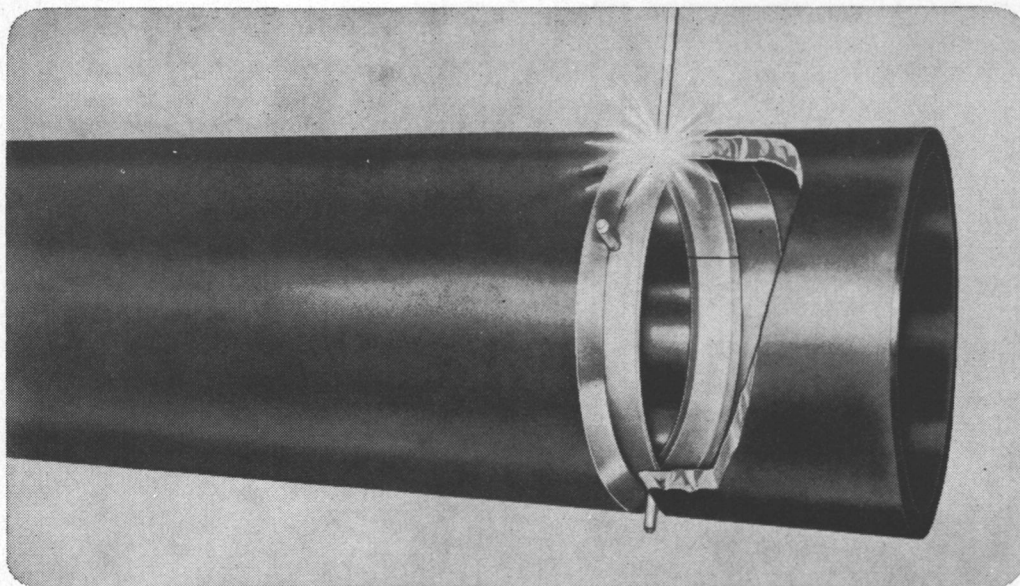


Helmut L. Schwarz

Mr. Schwarz joined Krupp International, Inc. in August 1977, after having served in various senior management positions with the Ogden Corporation, Litton Industries, and Kaiser Industries. His academic credentials include degrees in mechanical engineering, naval engineering, and a master's degree in business management from the University of California in Los Angeles.

Krupp International, Inc., headquartered in Harrison, N.Y., and regional offices nationwide, is a wholly owned subsidiary of Fried. Krupp GmbH of Essen, Germany, a diversified manufacturer of industrial products and services with worldwide operations.

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Acadian Supply Files Amended Application For Towing Vessels

Acadian Supply Ships Associates, Suite 1515, 225 Baronne Street, New Orleans, La., has filed an amended application for a Title XI guarantee to aid in financing the construction of six towing vessels. Acadian's original application, dated July 1, 1976, was for two oceangoing tug/supply vessels.

The six towing vessels will be used in the coastwise trade in the support of the petroleum industry's offshore exploration and production of oil and gas fields. Each of the vessels will measure 217 feet in length and 44 feet in breadth.

Three of the vessels will be constructed in the standard towing mode, and will be capable of handling smaller semisubmersible drilling rigs, heavy construction barges, and jackup drilling rigs in the 8,000-ton range. The other three vessels will be in the heavy duty towing mode, and will be capable of handling semisubmersible rigs in the 15,000-ton range.

Halter Marine, Inc., New Orleans, La., has been designated as the shipbuilder for the six towing vessels.

The combined estimated cost of the six vessels is approximately \$20.2 million. If approved, they would be eligible for guarantees of up to 87½ percent of the actual cost.

Port Everglades Propeller Club Installs Officers

The 1978-79 officers and board members of the Port Everglades Propeller Club were installed by **Jasper Baker**, past National Propeller Club president, at the organization's monthly dinner meeting at the Sea Port Restaurant in Port Everglades, Fla., on July 27, 1978.

Mr. Baker flew in from Washington, D.C., national headquarters of The Propeller Club of the United States, to install as president **Lloyd E. Murdock**, director of marketing at Tracor Marine, Inc. Other club officers installed at the meeting were **Jack E. Tingle**, business development officer, the Dania Bank, first vice president; **Capt. Robert I. Jackson**, Harbor Pilot, second vice president; **Jess L. Moore**, president, Jackson Marine Electronics, treasurer; **Martin A. Mets**, assistant to the director of port development, Port Everglades Authority, secretary.

Members of the board of governors installed by Mr. Baker were: **Nicholas B. Bellissimo**, Union Oil Co.; **David Faulkner**, Exxon; **Otto A. Holmedal**, Landmark First National Bank; **Wesley Kurtz**, Dant & Russell; **George**

Miller, Cities Service Oil Co.; **Robert Santos**, Port Everglades Towing; **Fred J. Stevens**, Commissioner Port Everglades Authority; **Carl Thorsen**, Eller & Co.; **Capt. Thomas G. Nelson**, Hvide Shipping; **C.L. Schandelmayer**, past president of the club, and **Gary L. Waldron**, Waldron Petroleum Tank Service, Inc. Immediate past president **Paul D. deMariano** became an ex officio member of the board.

Motorola Marine Promotes Emory Durrett

Emory Durrett has been promoted to Western area sales manager, Motorola Marine Communications, according to **Ed Vaughan**, national sales manager. In his new capacity, Mr. Durrett will be responsible for all Triton marine sales and merchandising programs in an 11-state area, including Hawaii and Alaska.

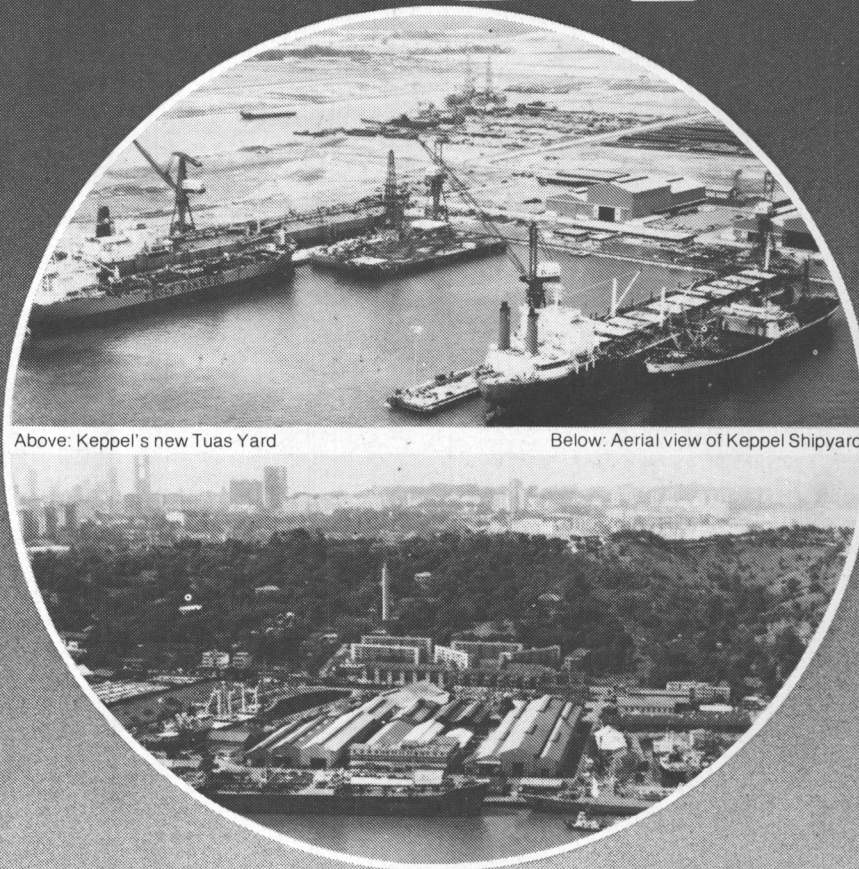
Mr. Durrett will spearhead sales and merchandising efforts for the entire Triton line of VHF and SSB marine radios, including Motorola's new Triton Nautilus 220 and 440 VHF marine radios.

Mr. Durrett has been with Motorola for over 16 years in a number of different positions, most recently as Western regional manager, Automotive Products Division.

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Above: Keppel's new Tuas Yard

Below: Aerial view of Keppel Shipyard

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Italian Government Honors Worthington Pump Chief Executive

Paolo A. Gamboni, chairman and chief executive officer of Worthington Pump Inc., has been selected to receive the highest honor Italy awards to businessmen for contributions to economic development, industrial advancement and social improvement of Italy.

The honorary title "Cavaliere del Lavoro" is conferred every year on the anniversary of the foundation of the Republic. It is awarded to the year's most distinguished leaders of Italian industry, commerce and finance. Mr. Gamboni was awarded the honor in recognition of the high reputation achieved by Worthington S.p.A. in the industrial field, the excellent performance of its stock on the Milan Stock Exchange, and the social poli-

cies of the company's top management in increasing ownership by employees of the company's stock.

Mr. Gamboni has been chairman and chief executive officer of Worthington Pump Inc. since 1974. His career with Worthington began in 1964 as general manager of Worthington S.p.A. He was named Group vice president of Worthington Pump's European Region in 1972, a position he continues to hold. Mr. Gamboni is also chairman and managing director of Worthington S.p.A., as well as a member of the internal board of Studebaker-Worthington Inc.

Prior to joining Worthington Pump, Mr. Gamboni was general manager of AGIP-USA in New York, and manager of Operations Analysis Services for the ENI Group. A native of Rome he is an engineering grad-

uate of the University of Naples. He was trained as a pilot in San Marcos, Texas, in preparation for duty with NATO.

The title of Cavaliere del Lavoro will be awarded to Mr. Gamboni and other 1978 recipients by the president of the Italian Republic in Rome in October 1978. The ceremony will be attended by members of the Italian Government and leading industry officials.

Worthington Pump is the world's largest pump company, with 21 manufacturing locations in 13 countries. Its North American facilities are located in Harrison and East Orange, N.J., Taneytown, Md., Shawnee, Okla., and Brantford, Ontario, Canada. They manufacture pumps for the electric utility and public works, petroleum, chemical and petrochemical, mining, pulp and paper, marines, agriculture and general industries.

Overseas Shipholding Group Reports Increased Earnings

Overseas Shipholding Group, Inc., 1114 Avenue of the Americas, New York, N.Y. 10036, has reported increased net operating income and net income for the three months and six months ended June 30, 1978.

Net operating income in the second quarter rose to \$13,472,000, or \$1.22 per share, from \$11,852,000, or \$1.08 per share, in the corresponding 1977 quarter. For the first half of 1978, net operating income was \$26,405,000, or \$2.40 per share, up from \$23,358,000, or \$2.13 per share, in the first half of 1977.

Including a gain from the sale of a vessel in 1978 and unrealized results of foreign currency translation, 1978 net income amounted to \$14,683,000, or \$1.33 per share, in the second quarter and \$28,125,000, or \$2.56 per share, in the first half, compared with 1977 net income of \$11,867,000, or \$1.09 per share, in the second quarter and \$23,211,000, or \$2.12 per share, in the first half.

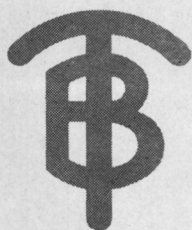
The 1978 results reflect the accounting for leases prescribed by Financial Accounting Standards Board Statement No. 13, and 1977 results have been adjusted accordingly. The U.S. tax provision for each period is net of applicable investment tax credits resulting from the addition of new vessels to the company's U.S.-flag fleet, three in 1978 and one in 1977. The 1977 per share figures have been adjusted to reflect a 4-percent stock dividend distributed in March 1978.

The major bulk shipping company, which places continuing emphasis on medium- and long-term charters, reported that 92 percent of its operating fleet is chartered through at least the end of 1978.

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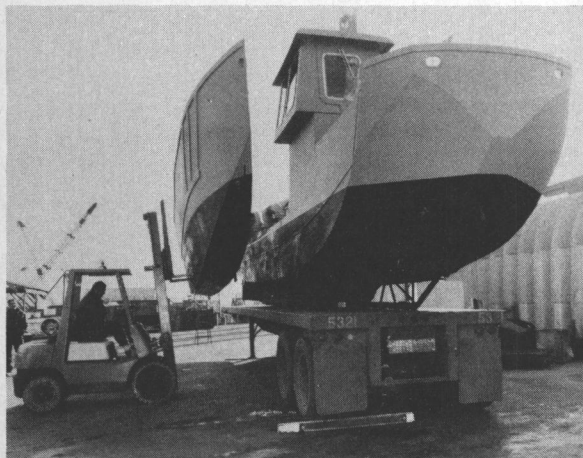
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MARCO 'Modularizes' U.S. Navy Oil-Spill Skimmers For Easy Transport By Aircraft And Truck

Half of a 24-boat "fleet" of oil-spill skimmers for the U.S. Navy previously built by Marine Construction and Design Co. (MARCO), 2300 West Commodore Way, Seattle, Wash. 98199, are being "modularized" so they can be transported by aircraft.

The work is being done under a \$1.8-million modification contract awarded to the company by the Naval Sea Systems Command.

Rather than purchase additional skimmers to complete stationing with fleets and facilities around the world, the Navy instead worked with MARCO on the idea of cutting 12 of the 36-foot skimmers into four modules that could be air transported and then reassembled at a spill site.



Skimmer hull was cut into three lengthwise modules. The fourth module is the top portion of pilothouse.

The Navy skimmers, based on the MARCO "Class V" design, recover spilled oil in the open ocean as well as in harbors and bays. Oil is recovered by a conveyORIZED "Filterbelt" material that collects oil from the surface but allows water to flow through.

Completion of the refitting is scheduled for April 1979. Vessels are being delivered on schedule as completed to Navy facilities in Oakland, Calif., and Portsmouth, Va. The skimmers were constructed at the MARCO shipyard in Seattle during 1976-77.

The modification contract brings the total contracts for the skimmers, including spares and repair kits, to about \$6 million, reported Robert F. Allen, vice president of MARCO and general manager of the company's pollution control division.

Sectionalizing 12 of the skimmers into four modules permits loading into more types of aircraft (C-130A and C-141, for instance) as well as for highway transport on a pair of standard flatbed trailers without need for wide load permit. Skimmer hulls were cut into three lengthwise modules. Mechanical systems were positioned entirely within the center section, and two outboard sections were reconstructed as sealed units for attachment to the main hull module. The fourth module is the top portion of the vessel's pilothouse.

Additional equipment—such as cargo davits, radio mounts, additional non-skid deck grating, and recessed boarding ladders—is being installed on all 24 skimmers. Many of these changes resulted from experience at actual oil spills with these vessels and similar MARCO skimmers operated by private industry, Mr. Allen noted.

The Class V skimmer is a monohull vessel that has a fork-like skimming end in which the company's "Filterbelt" oil-recovery system conveyor is lowered to collect surface

oil and debris. The craft's scow-like bow permits towing to a spill at 12 knots or more. On the scene, the skimmer uses a 360-degree rotatable thruster for propulsion and steering. It recovers up to 300 gallons per minute of heavy oils.

Kirby Exploration Awards Drilling Platform Contract To Omega Marine Services, Inc.

Omega Marine Services, Inc., 10000 Old Katy Road, Houston, Texas 77055, has been awarded a contract by Kirby Exploration Company for engineering and project management for the design, fabrication and installation of a drilling and production platform and related production facilities.

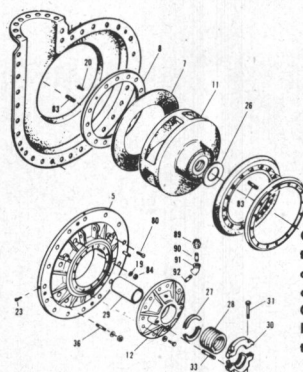
Zim Opens Offices In Houston And New Orleans

Avner Manor, president of Zim American-Israeli Shipping Co., Inc. and Zim Container Service-North America, has announced the opening of Zim offices in Houston, Texas, and in New Orleans, La. Inter-Gulf Agencies, by mutual consent, will cease to represent Zim in these cities.

The offices are located at 1220 Texas Avenue, Suite 204, Houston, Texas 77002, and at 610 Poydras Street, Suite 220, New Orleans, La. 70130.

David Hoelscher has been appointed Southern and Southwestern regional manager and will be in charge of these new offices, as well as the present sales office in Dallas. Mr. Hoelscher has been with the Zim organization for five years and was manager of the Dallas office. He will now be located in Houston. The New Orleans office will be managed by Stanley Guerra.

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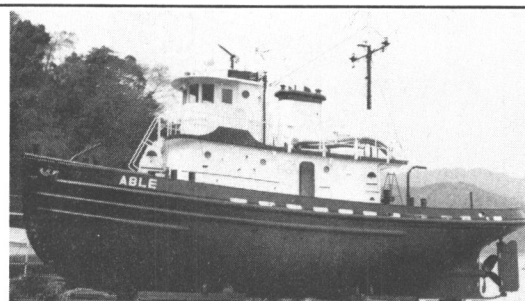
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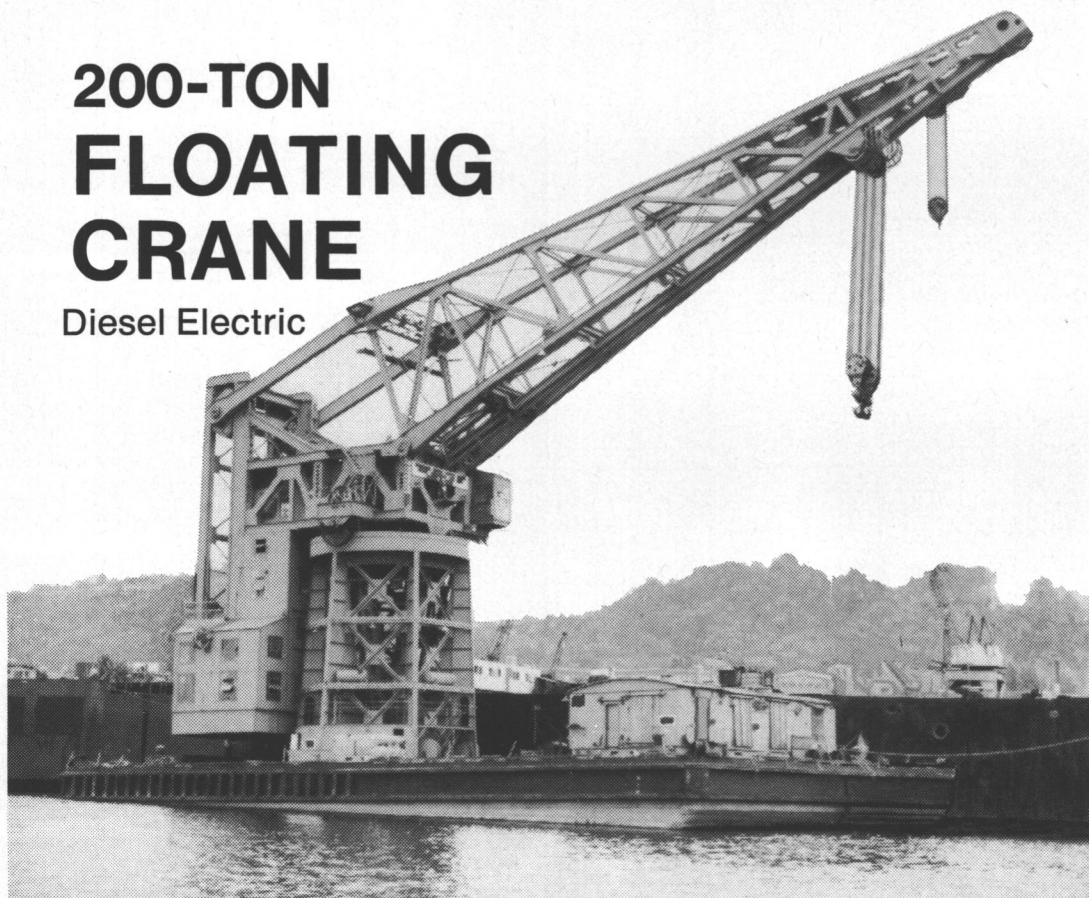


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200-TON FLOATING CRANE

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MR 7601

VESSEL CHARACTERISTICS 200-TON LIFTING CAPACITY

LENGTH OVERALL 140 FT.
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LIGHT DISPLACEMENT 2,334 TONS
ALL STEEL CONSTRUCTION
ELECTRIC REVOLVING TYPE—FULL 360°
WEB BOOM 146 FT.
MAIN HOIST: 200-Ton—By 2 only, 8 part blocks.
Each block carries 2,050 ft. of 1½",
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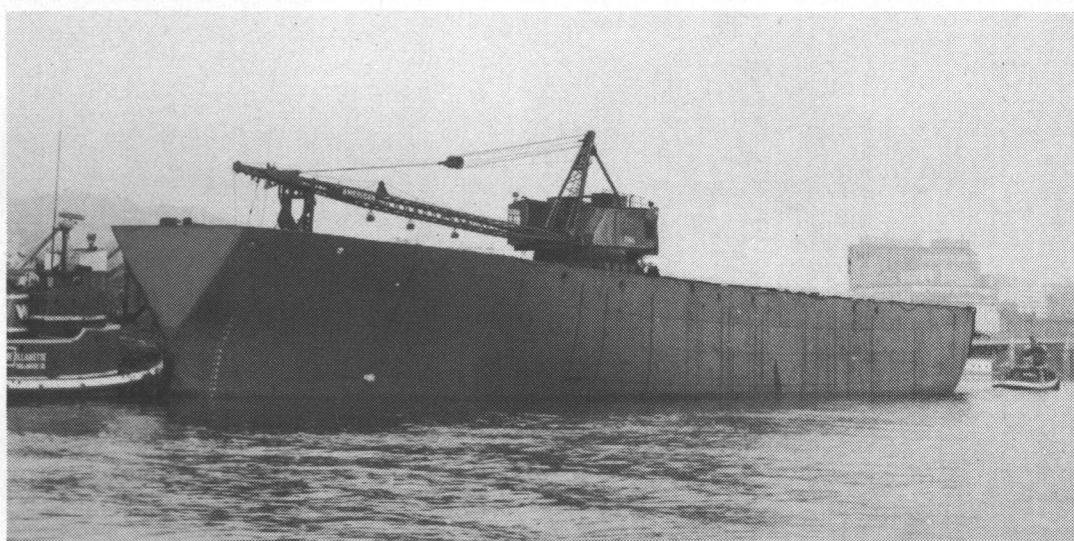
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LENGTH OVERALL 442 FT.
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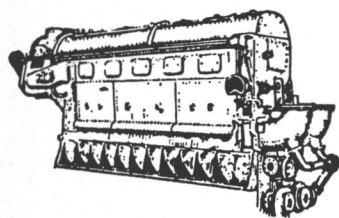
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MARINE DIESEL ENGINES



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MARINE DIESEL GENERATORS

4—COOPER - BESSEMER, Marine . . . Model FSN 6, 6 cylinders, 375 HP, 900 RPM with General Electric generators, 250 KW 440/3/60.

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

4—GENERAL MOTORS, Model 3-268A, marine, 150 BHP, 1200 RPM, 3 cylinders, with 100 KW Generators, 450/3/60.

3—GENERAL MOTORS, Model 3-268A, Marine, 150 HP, 1200 RPM, 3 cylinders, with Allis-Chalmers Generators, 100 KW, 120/240 DC.

Many other units in stock

TURBINE GENERATORS—AC and DC Voltage

A. C.

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

7 — 750 KW, GENERAL ELECTRIC Turbines: Type FN3-FN24, 525 PSI, 10,033 RPM. Generators: 750 KW, 450/3/60, 1200 RPM, Type ATI.

2 — 500 KW, GENERAL ELECTRIC Turbines: Type FN3-FN20, steam 375/425 PSI, 6 Stage, 9987 RPM. Generators: 500 KW, 450/3/60, 1200 RPM, Type ATI.

D. C.

1 — 400 KW, WORTHINGTON Turbine, 200 PSI with Crocker-Wheeler Generator, 400 KW, 120/240 Volts DC, Type CDC, 1200 RPM.

7 — 300 KW, ALLIS-CHALMERS Turbines, 440 PSI, 5645 RPM, with Westinghouse Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

2 — 300 KW, WESTINGHOUSE Turbines, 440 PSI, 5920 RPM, with Westinghouse Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

2 — 300 KW, TERRY Turbines, 440 PSI, Type TM-5, 5965 RPM, with Crocker-Wheeler Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

1 — 300 KW, ALLIS-CHALMERS Turbine, 440 PSI, 470 HP, 8000 RPM, with Allis-Chalmers Generator, 300 KW, 240/240 Volts DC, Type HO, 1200 RPM.

1 — 250 KW, DE LAVAL Turbine, 440 PSI, 360 HP, 10,000 RPM, with Crocker-Wheeler Generator, 250 KW, 240/120 Volts DC, Type CCD, 1200 RPM.

12 — 60 KW, WESTINGHOUSE Turbines, 89.4 HP, 200 PSI, 7283 RPM, Type M-20-EH, with Westinghouse Generators, 60 KW, 120 Volts DC, 1800 RPM.

DELAVAL, 450 PSI, 750°F, 300 KW, 120/240 DC.

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Size A2	Size A6	Size A16

Electro-Mechanical STEERING GEAR

1—SPERRY No. 2, 5 HP, 230 Volts DC, complete with Steering Winch, Controller Panel, Ballast Resistor, Electro-Mechanical Steering Stand—with Steering Wheel (with Pull-out Knob).



AIR COMPRESSORS

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

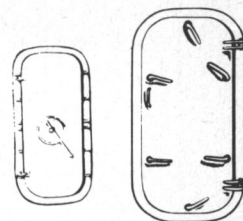
3—INGERSOLL - RAND, Size 5x5x4x4, 50 CFM, 150 PSI, with G.E. Motor, 20 HP, 440/3/60.

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

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

STEEL WATERTIGHT DOORS

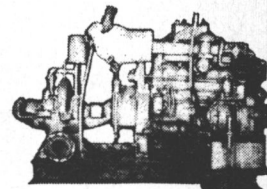
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Frames.



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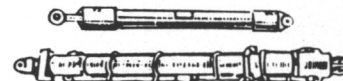
26"x48"-4 Dogs
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 26"x66"-6 Dogs, 8 Dogs
 26"x66"-Q.A. Type

FIRE PUMPS



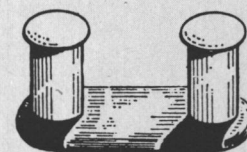
2—BUDA, Model 6-LD-468, Diesel Engine: 6 cylinders, 100 BHP, Marine, Gardner Denver, centrifugal Pumps, Bronze, horizontally split case, 1000 GPM, 280' head, 6 suction and 5" discharge.

HYDRAULIC CYLINDERS

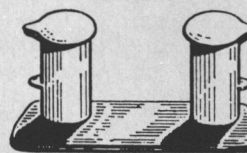


Bore	Overall Stroke	Rod Diameter	Retracted Length	Action
10"	12"	3.75"	45 1/2"	double
10"	26"	3.75"	58 1/2"	double
2"	8"	1 1/2"	20"	double
2.5"	15"	1.12"	25 1/2"	double
3"	8"	1.37"	15 1/2"	double
6"	8"	4"	144"	double

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

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280 KW — 220 V — DC 500 R.P.M.

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Single out 3,957:1

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

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Type ABT-2, 4600 KVA, 4600 KW, 5600 RPM.

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400 RPM, 6000 S.H.P.

4 Ea. — G.E. Turbine Gen. 1250 KW 450 V 3 P.H.

TURBINES — D.C.

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

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

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with or without Continental Electric AC Motors
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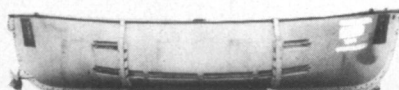
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tanks, safety ropes & hang-on bars.

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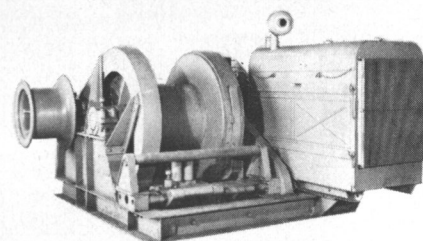
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12,000 lbs at 38.5 feet per minute. 2176 lbs at 170 feet
per minute. Drum diameter 22"—drum width 18 1/2"—
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269' OVERALL — 63' BEAM — 28' DRAFT
DIESEL ELECTRIC — 10,000 SHP — 10.5 KNOTS



Normal Range	38,000 Miles
Range at Maximum Speed	16,000 Miles
Accommodations	250 Persons
Potable Water Capacity	60,382 Gallons
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Also has full galley, (2) 2-Ton deck cranes, large Almon-Johnson
Constant Tension Towing Winch, Helicopter Deck

Displacement 6315 tons. Diesel-electric propulsion with (6) F.M. OP 38D8 1/8 diesel engines driving Westinghouse 1375 KW generators powering two 5000 HP Westinghouse shunt wound DC propulsion motors driving after shafts. 2 Ships service heating boilers. Feedwater capacity 12,872 gallons; lube oil 10,382 gallons; (2) 17' diameter propellers with 11' 10" pitch. Engine spares on board. Steel plate—high tensile 1 1/4 to 1 1/2—ice belt 1 1/2 to 1 1/2—yield point 56,000 PSI. Last drydocking 1973. General condition good. This class of vessel has been satisfactory for 25 to 30 years with no significant structural damage while operating in continuous 3-ft. ice and ramming 11' ice to half its length.

SUITABLE FOR BERTHING OR ACCOMMODATION VESSEL

Offered as she lies where she lies at our pier in Baltimore, Maryland, U.S.A. We are principals and owners.

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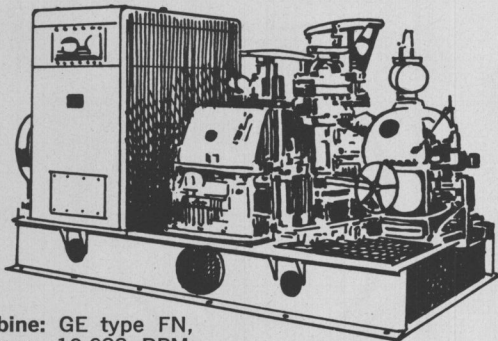
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TURBO GENERATORS

750 KW GENERAL ELECTRIC TURBO GENERATOR UNIT

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

600 KW GENERAL ELECTRIC TURBO GENERATOR UNIT



Turbine: GE type FN, 6-stage, 10,033 RPM

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

538 KW WESTINGHOUSE TURBO GENERATOR UNIT

Complete with L.O. Coolers and exciters. **Turbine:** Westinghouse 538 KW, 5010 RPM. Inlet pressure 435 psi. Temp. 750 degrees F. TT. Exhaust pressure 28 1/2 hg. vac. **Generators:** (1) 400 KW, 450 VAC, 3 pole, 60 cycle, PF 80%, 1200 RPM, ship's service. (2) 32.5 KW, 125 VDC, 1200 RPM, variable voltage exciter. (3) 110 KW, 125 VDC, 1200 RPM, constant voltage generator. (4) 5 KW, 125 VDC, 1200 RPM, ship's service Generator-Exciter. **Reduction Gear:** Ratio 5010/1200 RPM.

535 KW GENERAL ELECTRIC TURBO GENERATOR UNIT

Complete with L.O. Coolers and exciters. **Turbine:** General Electric Mfg. drawing P-8453535, 3 stages, type DORV-325, 5645 RPM, rating 535 KW, inlet pressure 590 lbs., Superheat 325 degrees F., exhaust pressure 1 3/4 ABS. **Reduction Gear:** General Electric, type S-162-D, Class, 535 KW, Mfg. dwg. T-8453535, 5645/1250 RPM. **Generator:** General Electric, Dwg. T-8453535, type ATB-976, KNA 500, 450 volts AC, 3 phase, 60 cycle, 400 KW, 642 amps, 1200 RPM, PF .8, Frame 976, Exciter 120 volts DC. Control panel: General Electric, Dwg. 6367270, Type XF-100492, 6 circuits, 450 volts AC.

525 KW GENERAL ELECTRIC AUXILIARY TURBO GENERATOR UNIT

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

CENTRIFUGES

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

PROPELLER

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

STRIPPER PUMP

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

STRIPPER PUMP

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

ANCHOR WINDLASS

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

MAIN FEED PUMP

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

MAIN FEED PUMP

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

Mission and Standard T2SEA1

MAIN TURBINE

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

MAIN GENERATOR

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

SWITCHBOARD — MAIN

G.E. Model 43A1.

POWER TRANSFORMERS

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

BILGE PUMP

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

MAIN CARGO PUMP

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

MAIN CIRCULATING PUMP

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

MAIN STEERING UNIT

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

EX: SANTA ANA T2SEA2 (MISSION)

- 2 each — Steering Gear, Rams
- 2 each — Steering Gear Pumps & Motors
- 1 each — Refrigeration Compressor, Carrier 7H5, with G.E. Motor
- 2 each — Auxiliary Turbo Generators, G.E. 535 KW
- 1 each — Main electrical control board
- 1 each — Auxiliary Electrical Control Board
- 3 each — G.E. forced draft turbines, 50 HP
- 1 each — Mooring Winch, American Engineering, 9 x 12

★ ★ ALSO AVAILABLE !! ★ ★

DC MOTOR

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

Ideal for drilling rig operation

NEW MAIN MOTOR FOR T2

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

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

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

PUMP — AUXILIARY CIRCULATING

Warren, Size & Type 14-DBV-16, 690 gpm, 25 ft. he., 6500 RPM with motor.

PUMP — FUEL OIL SERVICE

DeLaval Imo Pump, 42 GPM, 1750/870 RPM, 375 psi disch. with motor.

PUMP — BILGE & BALLAST

Warren, Steam reciprocating, 12" x 8 1/2" x 12" vertical duplex, 275 gpm, with motor.

BUTTERWORTH HEATER

Ross heat exchanger, surface 705 sq. ft., salt water heater.

Design press.	tube 250	shell 150
Hydro press.	500	300
Design temp.	300	480

LUBE OIL COOLER

Davis Engineering Corp., "Paracoil", 2X156C, Shell test 120#, Tube test 100#.

PUMP — BILGE & BILGE PRIMER

Buffalo Forge, Size 4", 600 GPM, 1750 RPM, 13.5 BHP, Type or Model SL, Total head 30 psi, 10" dia. imp. 50 psi, with motor.

MAIN CARGO PUMP UNIT

Pump: Ingersoll Rand, type 2 stage horizontal, size 6-GTM, 1750 RPM, 2000 GPM, 12" x 12", 100 psi @ 280 ft. head. With motor.

FUEL AND LUBE OIL PUMP

Pump: Quimby, size 2 1/2 head screw, 1200/600 RPM, 15 GPM @ 325 psi disch. press. **Motor:** General Electric, Model 5KF364PP1, Frame 364, 7.5/3.75 HP, 1160/580 RPM, 440 volts AC, 10/9.7 amps, 3 phase, 60 cycle, complete with controller.

LUBE OIL SERVICE PUMP

Pump: Quimby, Type vertical rotex, size 4-B, 1150 RPM, 175 GPM @ 60 psi with 20 ft. head, 6" x 5". **Motor:** General Electric, Model 5KF365AJX1, Frame 365, 5 HP, 1170 RPM, 440 volts AC, 20 amps, 3 phase, 60 cycle, complete with controller.

MAIN CONDENSATE PUMP

Pump: Ingersoll Rand, size 2VHM, 1760 RPM, 180 GPM @ TDH 165 ft., 5" x 2", disch. press. 67 psi. **Motor:** General Electric, Model 5KF365AJN-1, Frame 365V, 20 HP, 1765 RPM, 440 volts AC, 3 phase, 60 cycle, 25.5 amps, with controller.

MAIN CIRCULATING PUMP

C4, Warren type. 24 MFP, 18000 GPM, 690 RPM, 16 TDH vertical w/150 HP, 440/3/60 motor w/spare parts.

ORIGINATING FROM 70,000 DWT TANKER BARRACUDA CLASS

MAIN PROPULSION TURBINES

Newport News Shipbuilding & Drydock Co., HP 13,500 SHP @ 5851 RPM, LP 10,210 SHP @ 3286 RPM.

ANCHOR WINDLASS

American Engineering Co., 13" x 14", Chain speed 30 fpm, Inlet steam 135-175 psi.

TURBINE-GENERATOR 1000 KW

Turbine: DeLaval, 7 stages throttle steam, 825 psig, 850°F, Exhaust 1.75 in Hg ABS, 9313 RPM, Atmo. relief valve, 2 psig. **Reduction Gear:** DeLaval single reduction, pinion 9313 RPM, Gear 1200 RPM, speed ratio 7.761:1.

DISTILLER PLANTS

Griscom-Russell, Horizontal Low pressure, Double effect. Single effect capacity 9250 gpd, Clean tube capacity 12,000 gpd.

PUMP — CARGO TANK BALLAST

Ingersoll-Rand Centrifugal, Size 10 HLV, hydraulic test 200 **Turbine:** G.E. Marine, Model No. 7TDPY125MR72, 600 HP, 5923 RPM, Steam press. 775-800, Max. 535°F TT, Exh. 17.9. **Reduction gear:** G.E. Type S-233, Form AE, Class 600 HP, 5923/1860 RPM.

PUMP — MAIN CIRCULATING

Warren Pump Co., Size & Type 30-SLMV, cap. 22,500 gpm, 25 ft. head, 500 RPM, with motor.

PUMP — MAIN CONDENSATE

Warren Pump Co., Size & Type 4-2CVP-13, 380 GPM, 280' head, 1750 RPM, with motor.

PUMP — AUXILIARY CONDENSATE

Warren, Size & Type 4-2CV-P-13, 380 gpm, 280 ft. hd., 1750 RPM with motor.

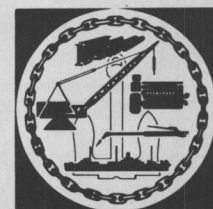
PUMP — MAIN FEED

Pacific Steam Turbo Pump, Size 2" x 6" x 4" x 8", Type TBA, 9600 RPM, 730 HP, 660 gpm, 2625 ft. hd., 35 NPSH. Ft., **Governor:** Woodward #A033304, Drive shaft speed 700-900, RPM control air pressure 25-5 psi.

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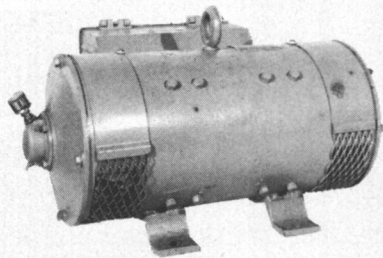
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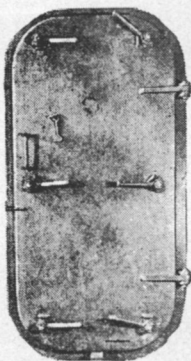
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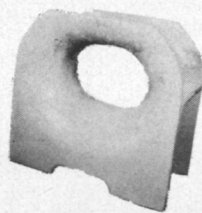
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26"x48" 26"x66"
26"x60" 30"x60"

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IMMEDIATE DELIVERY



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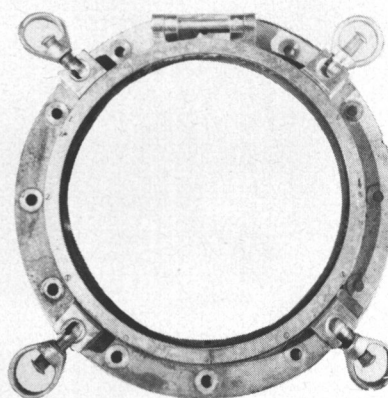
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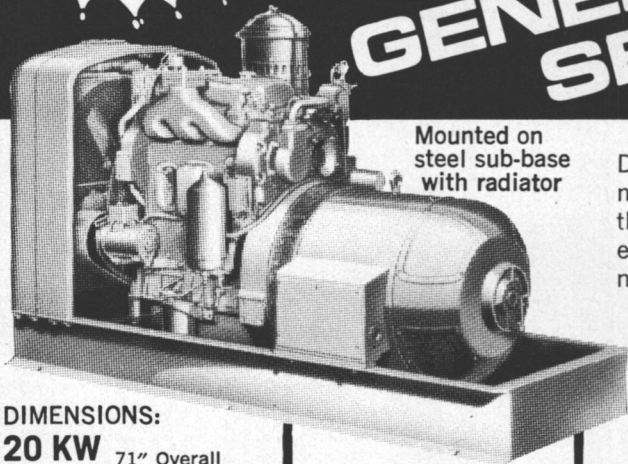
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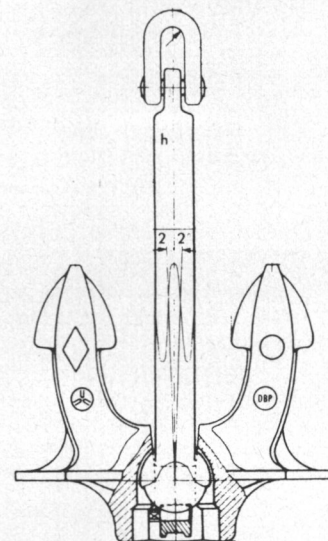
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Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N.Y. 10016

NAVIGATION & COMMUNICATIONS EQUIPMENT

ACR Electronics, Inc., 3901 North 29th Avenue, Hollywood, Fla. 33020

American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526

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

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OIL PURIFIERS—Separators

Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231

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Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Mobil Oil Corporation, 150 East 42nd St., New York, N.Y. 10017
Texaco, Inc. (International Marine) 135 East 42nd St., N.Y., N.Y. 10017

PAINT—Coatings, Protective

Carboline Co., Marine Div., 350 Hanley Industrial Court, St. Louis, Mo. 63144
Devoe & Reynolds Co., Inc., P.O. Box 7600, Louisville, Ky. 40207
Hanline Bros., Inc. (Consol Paint), 1400 Warner St., Baltimore, Md. 21230
International Paint Co., 17 Battery Place North, Suite 1150, New York, N.Y. 10004
Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O. Box 250, Edison, N.J. 08817
Petterson Sargent Co., 1471 Jersey Ave., New Brunswick, N.J. 08901
Products Research & Chemical Corp., (PRC Coating and Sealants Div.) 5430 San Fernando Road, Glendale, California 91203

PETROLEUM SUPPLIES

Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002

PILOT LADDERS—Wood Products

A.L. Don Co., 58 Grant Avenue, Carteret, N.J. 07008

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Hydro-Craft, Inc., 4223 Edgeland, Royal Oak, Mich. 48073
Kubota, Ltd., 22, Funade-cho 2-chome, Naniwa-Ku, Osaka, Japan
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

PLASTICS—Marine Applications

Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231

PLATENS

Welding Wholesale Co., Div. J.A. Cunningham Eqpt., Inc., 2151 Dreer St., Philadelphia, Pa. 19125

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Avondale Shipyards, Inc., P.O. Box 52080, New Orleans La. 70150
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081
The Columbian Bronze Corp., 216 North Main Street, Freeport, N.Y. 11520
Coolidge Propellers, 1601 Fairview Ave. East, Seattle, Wash. 98102
Escher Wyss GmbH, P.O. Box 798, Ravensburg, Germany
Lips BV, Lipsstraat 52, Drunen, Netherlands
LIPS Propeller Works Inc., 420 Lexington Ave., New York, N.Y. 10017
Voith Schneider—U.S. Agent: Krupp International, Inc., 550 Mamaroneck Ave., Harrison, N.Y. 10528

PROPULSION—Marine

Combustion Engineering, Inc., Windsor, Connecticut 06095
Delaval Turbine Inc., Turbine Div., Trenton, N.J. 08602
In-Place Machining Co., 1929 N. Buffman St., Milwaukee, WI 53212
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166
Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523

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Delaval Turbine Inc., IMO Pump Division, P.O. Box 321, Trenton, N.J. 08602
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Worthington Pump Inc., P.O. Box 1250, Mountainside, N.J. 07092

RATCHETS

CM American, Division Columbus McKinnon Corp., P.O. Box 74, McKees Rocks, Pa. 15136

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Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
Port Refrigeration Div., 157 Perry Street, New York, N.Y. 10014
Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 19523

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Superior Switchboard & Devices, Division of Union Metal Manufacturing Company, P.O. Box 590, Canton, Ohio 44701
D. Van Beest En Zn.B.V., P.O. Box 57, Merwestraat 1-5, Slidrecht, The Netherlands

ROPE—Manila—Nylon—Hawsers—Fibers

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Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110
The Cordage Group, Columbian Drive, Auburn, N.Y. 13021
Wall Rope Works, Inc., Beverly, N. J. 08010

RUDDER ANGLE INDICATORS

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Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.

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Patent Scaffolding Co., 2125 Center Ave., Fort Lee, N.J. 07024
Spider Staging Sales Co., P.O. Box 182, Renton, Washington 98055
Trus Joist Corp., P.O. Box 60, Boise, Idaho 83707

SEWAGE—Pollution Control

Argo Marine, Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013
Clear Water, Inc., N. Main Street, Walworth, WI 53184
Colt Industries, Water & Waste Management Operation, Beloit, Wisc. 53511
Demco, Inc., P.O. Box 94700, Oklahoma City, Oklahoma 73109
Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
Marland Environmental Systems, Inc., N. Main Street, Walworth, WI 53184
Microphor, Inc., P.O. Box 490, Willits, CA 95490
Red Fox Industries, P.O. Drawer 640, New Iberia, La. 70560
Research Products/Blankenship, 2639 Andjon, Dallas, Texas 75220
St. Louis Ship FAST Sewage Systems, 611 East Marceau St., St. Louis, Mo. 63111

SHAFTS, SHAFT REVOLUTION INDICATOR EQUIP.

Armco Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45043
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

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American Ship Dismantlers, Inc., Division of Schnitzer Industries, 3300 N.W. Yeon Avenue, Portland, Ore. 97210
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Levin Metals Corp., 1310 Canal Blvd., Richmond, CA 94807
National Metal & Steel Corp., 691 New Dock St., Terminal Island, Cal. 90731
Zidell Explorations, Inc., 3121 S. W. Moody St., Portland, Ore. 97201

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Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Bethlehem Steel Corp., 25 Broadway, New York, N.Y. 10004

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Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085
Bethlehem Steel Corp., Shipbuilding, 25 Broadway, N.Y., N.Y. 10004
Blohm + Voss AG, D-2000 Hamburg 1, P.O.B. 10 07 20
Blohm + Voss Co., 55 Morris Ave., Springfield, N.J. 07081
Blount Marine Corp., P.O. Box 368, Warren, RI 02885
Boston Marine Industrial Park, Public Drydock No. 3, 60 Congress St., Boston, Mass. 02109
Bremer Vulkan Schiffbau und Maschinenfabrik, P.O. Box 70023/24, 2820 Bremen 70, W. Germany
Carrington Slipways Pty. Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322
CCL Shipcare Limited, Easton Lane Winnall Estate, Winchester Hampshire, England SO237QU
Centromor, One World Trade Center, Suite 3557, New York, N.Y. 10048
China Shipbuilding Corp., c/o Allegro Transportation Supply Co., 393 Seventh Ave., Room 234, New York, N.Y. 10001
Conrad Industries, P.O. Box 790, Morgan City, La. 70380
Curacao Drydock Co., Inc., P.O. Box 153, Willemstad, Curacao, Netherlands Antilles
Curacao Drydock, 26 Broadway, Suite 741, New York, N.Y. 10004
Dravo Corporation, One Oliver Plaza, Pittsburgh, Pa. 15222
Dravo Steelship Corp., R.4, Box 167, Pine Bluff, Ark. 71602
Equitable Shipyards, Inc., P.O. Box 8001, New Orleans, La. 70122
FMC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208
General Dynamics, Quincy Division, Quincy, Mass. 02169
Gladding-Hearn Shipbuilding Corporation, 1 Riverside Avenue, Somerset, Mass. 02725
Granges Repair Service GMBH, P.O. Box 3166, Gutenbergring 64, D-2000 Hamburg-Norderstedt Germany
Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189
Harland & Wolff Shipbuilding & Engineering, Queens Island, Belfast, Northern Ireland
Havre de Grace, Havre de Grace, Md.
Hillman Barge & Construction Co., P.O. Box 510, Brownsville, Pa. 15417
Hitachi Shipbuilding & Engrg. Co., Ltd., 47 Edoberi 1-Chome, Nishi-Ku, Osaka, Japan
Hongkong United Dockyards Ltd., Kowloon Docks, Hong Kong
Hyundai Mipo Dockyard Co., Ltd., 456 Cheonha-dong, Ulsan, Korea
Hyundai Shipbuilding & Heavy Industries Co., Ltd., 5 World Trade Center, Suite 679, New York, N.Y. 10048
Jeffboat, Inc., Jeffersonville, Ind. 47130
Kawasaki Heavy Industries, Ltd., Kawasaki Kisen Kaisha, Ltd., 8 Kaigan-dori, Kura-ku, Kobe, Japan
Kockums Shipyard, S-201, 10 Malmo 1, Sweden
Lantana Boatyard, Inc., 808 N. Dixie Hwy., Lantana, Fla. 33460
Lisnave Estaleiros, Navais de Lisboa, Apartado 2138, Lisbon 3 Portugal
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
Marathon Manufacturing Company
Marathon LeTourneau Offshore Company, 1700 Marathon Building, 600 Jefferson, Houston, Texas 77002
Marathon LeTourneau Gulf Marine Division, P.O. Box 3189, Brownsville, Texas 78520
Marathon LeTourneau Marine Division, LeTourneau Rural Station, Vicksburg, Mississippi 39180
Marathon LeTourneau Offshore Pte., Ltd., P.O. Box 83, Taman Jurong Post Office, Singapore 22, Singapore
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Marathon Shipbuilding Company (U.K.) Ltd., Clydebank Dunbartonshire, G81-1YB, Scotland
Marinette Marine, Ely Street, Marinette, WI 54143
Matton Shipyard Co., Inc., P.O. Box 645, Cohoes, New York 12047
Maxon Marine Industries, Inc., P.O. Box 349, Tell City, Ind. 47586
J. Ray McDermott & Co., Inc., P.O. Box 60035, New Orleans, LA 70160
Mercantile Marine Engineering & Graving Docks Co., N.V., Antwerp, Belgium
Misener Industries, Inc., 5353 Tyson Avenue, P. O. Box 13625, Tampa, Fla. 33681
Mitsui Shipbuilding & Engrg. Co. Ltd., 6-4, Tsukiji 5-chome, Chuo-ku, Tokyo, Japan
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Newpark Shipbuilding & Repair, P.O. Box 5426, Houston, TX 77012
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Perth Amboy Dry Dock Co., Perth Amboy, N.J. 08862
Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767
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Sasebo Heavy Industries Co., Ltd., New Ohtemachi Bldg., Chiyoda-ku, Tokyo, Japan
Savannah Machine & Shipyard Co., P.O. Box 787, Savannah, Ga. 31402
Sembawang Shipyard (Pte) Ltd., P.O. Box 3, Sembawang, P.O. Singapore, 27
Sumitomo Heavy Industries, Ltd., 2-1 Ohtemachi, 2-Chome, Chiyoda-Ku, Tokyo, Japan
Sun Shipbuilding, Foot of Morton Ave., Chester, Pa. 19013
Swiftships Inc., P.O. Box 1908, Morgan City, LA 70380
Tampa Ship Repair & Dry Dock Co., P.O. Box 1277, Hookers Point, Tampa, Fla. 33601
Terrin Shipyards, Societe Provencale des Ateliers Terrin, 287, Chemin DeLa Madrague, 13345 Marseille—Cedex 3, France
Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004
Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316
Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087
Vancouver Shipyards Co., Ltd., 50 Pemberton Ave., North Vancouver, B. C., Canada
Wall Shipyard, P.O. Box 419, Harvey, La. 70058
Wiley Mfg., a unit of AMCA International Corp., Suite 200/Stockton Bldg., University Office Plaza, Newark, Del. 19702

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Pacific Marine Products, Inc., P.O. Box 11, Kenmore, Wa. 98028
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.

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McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
McDonough Marine Service, P.O. Box 26206, New Orleans, La.
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Dover Corporation/Norris Division, P.O. Box 1739, Tulsa, Oklahoma 74101
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Mechanical Marine Co., 900 Fairmount Ave., Elizabeth, N.J. 07027
Stow Manufacturing Co., 86 Bump Road, Binghamton, N.Y. 13902
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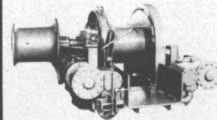
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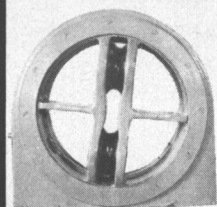
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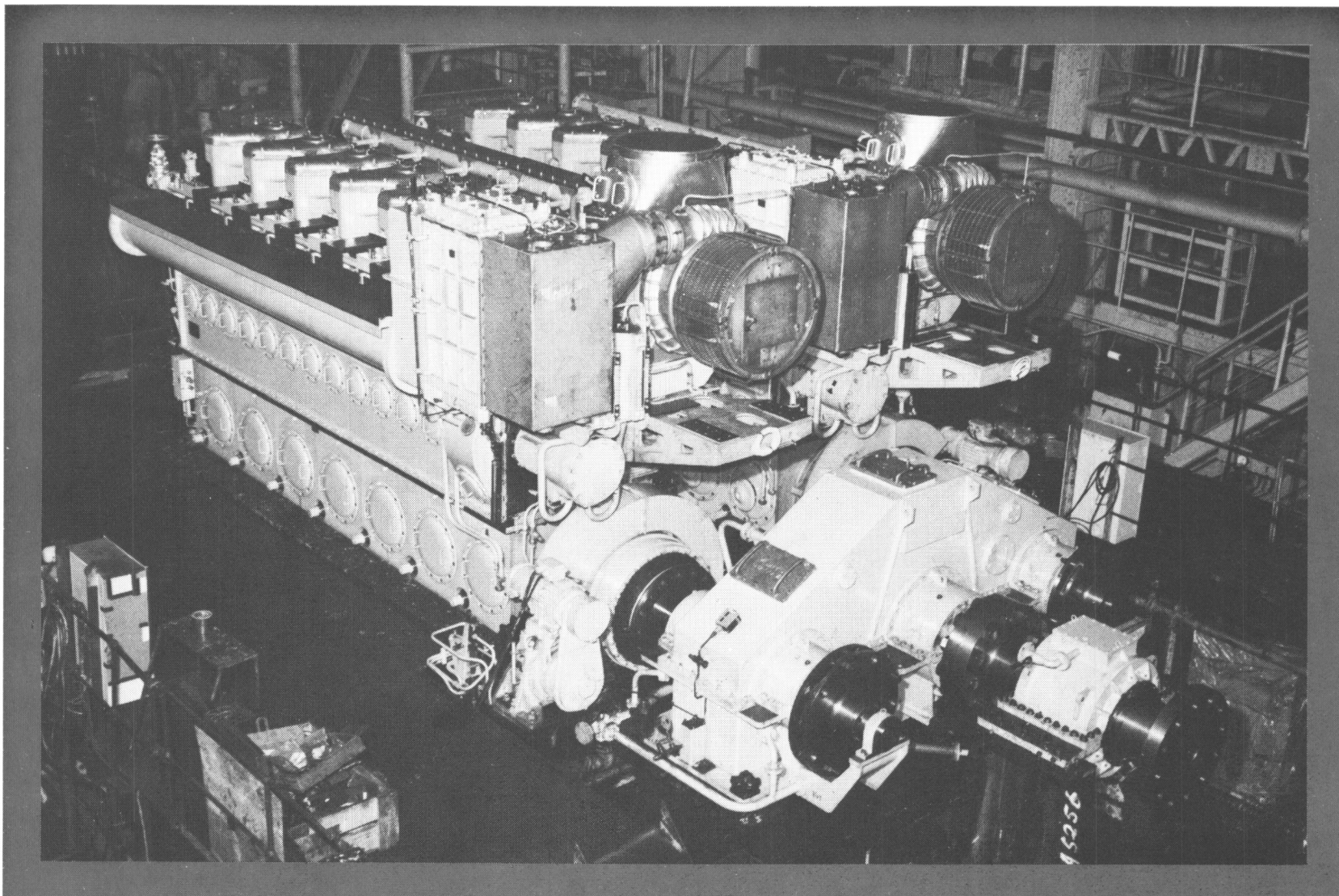


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