MARITIME
REPORTER
AND
ENGINEERING NEWS

Tandanor, S.A., Buenos Aires

World's Largest Syncrolift® Enters Service At Argentina's Tandanor Shipyard

(SEE PAGE 12)

FEBRUARY 1, 1980

The Case for BLENDED ROPES vs. 100% POLYPROPYLENE ROPES

Sure, blended ropes cost more than polypropylene ropes! But, they are more durable, perform better, in some cases are even stronger...so in the long run, THEY COST LESS!

Compare these data for 600′ coils of 8″ rope:

SQUARE BRAID OR 3-STRAND	WEIGHT	MINIMUM TENSILE STRENGTH
POLYPROPYLENE	720 lbs.	81,000 lbs.
PNX	798 lbs.	81,000 lbs.
SSR-300	768 lbs.	98,000 lbs.

PNX costs 50% more than polypro, SSR-300 62½% more but you can expect to receive enough extra service from these blended ropes to make them economical in spite of their higher initial cost.

WHY? Because sun is one of the greatest enemies of polypropylene while our blended ropes are of ultraviolet resistant construction. Blends contain Dacron, nylon and in some cases black polypropylene on the surface, plus an application of RESISTEX, a patented compound developed in our laboratory to increase resistance to wear and abuse. American developed blends to increase heat resistance*, to reduce friction and thereby reduce the possibility of a rope sticking to a bitt or capstan.

SSR-300 is better than most blended ropes because it has surface yarns of 100% DuPont type 77 Dacron, as opposed to a very thin veneer of Dacron in some other blends. Additionally, SSR-300 is very pliable and has a pre-fuzzed surface which gives it a good hand and better wearing properties.

WANT US TO PROVE OUR CASE?
We can guarantee that a blended rope is as economical as any polypropylene rope for most operations. **Contact American for an unusual offer.**

*The melting point of Dacron is 482°F, of nylon 480°F and polypropylene 330°F.

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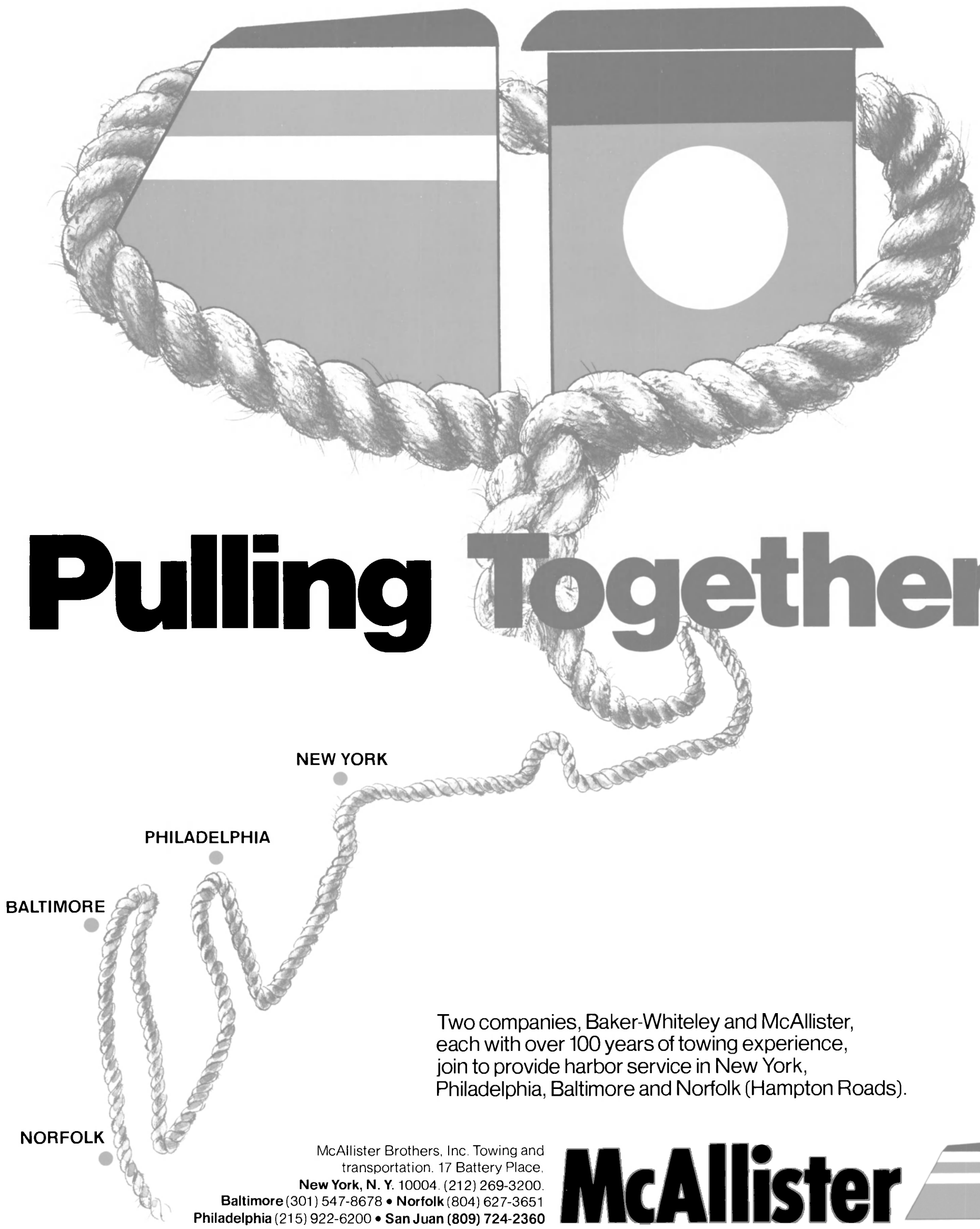

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McAllister

J.F. Lynch Named Executive Vice President At Federal Barge Lines

Pott Industries Inc., St. Louis, Mo., announced recently that **J.F. Lynch** had been promoted to executive vice president and chief operating officer of its wholly owned subsidiary, Federal Barge Lines, Inc. Mr. **Lynch** was formerly senior vice president of Federal. He joined Federal Barge in 1955.

Galveston Signs Port Construction Contract

Port of Galveston, Texas, officials recently signed an agreement with Pelican Terminal Corp., for the construction of a deepwater channel and terminal at Pelican Island.

Ratification of the 30-year agreement with the terminal company will produce for the port between $4.5 and $7.5 million through fees and taxes, according to port officials. Construction of the $350-million facility is scheduled to begin as soon as final permits are received, with dredging hopefully to start by late spring.

1979 REAPS Proceedings Now Available From IIT

The proceedings of the 1979 REAPS Technical Symposium are now available. These proceedings mark the sixth year for the Research and Engineering for Automation and Productivity in Shipbuilding program.

The 550-page volume contains 29 papers and three special interest reports. These papers detail the latest developments in improving shipyard productivity through computer techniques in all phases of ship design and production and through new manufacturing techniques.

The REAPS program, administered by IIT Research Institute, is a cooperative effort of the Maritime Administration and U.S. shipyards.

Proceedings cost $30 (shipped prepaid for orders within the U.S.). To order, send checks (payable to IIT Research Institute) to REAPS Program Librarian, 10 West 35th Street, Chicago, Ill. 60616.

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WARBURG PARIBAS BECKER
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One of four 600-hp pusher tugs recently delivered by Valmet.

Four 600-HP Pusher Tugs Completed By Valmet

The Pansio Shipyard of Valmet Shipbuilding, Finland, recently delivered four 440-kw (600-hp) pusher tugs which are intended to serve the two barge-carrying vessels M/S Yulius Fuchik and M/S Tibor Szamuely in their Interlighter-trade between the Danube and destinations in Southeastern Asia.

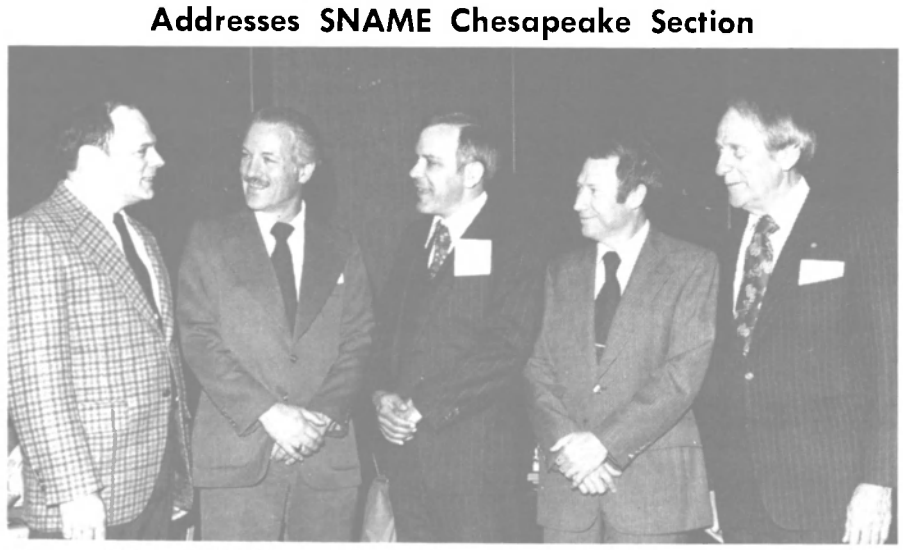
The tugs represent a new type of vessel built in Finland and, although intended to serve along with the mother ships, they are suitable equipment for any port requiring handling capacity for barges.

The pusher is fitted with two 220-kw (300-hp) diesel-powered rudder propellers, giving the best possible maneuverability for the tug/barge combination. In pushing two DM-type barges of 1,070 dwt, a speed of 5 knots can be achieved.

The vessel is also fitted with a telescopic wheelhouse which is a modification of Valmet's own standard-type truck lifting mast and tractor cabin. The electricity is generated by a Valmet 310 DGK unit with an output of 18 kw.

Along with the departure of the M/S Tibor Szamuely, the rest of the 54 DM-type barges built at the Pansio Shipyard for the Interlighter-service have also been delivered. These barges, representing a half-module of the Europa II-type, have a deadweight of 1,070 tons each.

H.J. Ruehsen Of Bethlehem Steel Addresses SNAME Chesapeake Section



Shown at the SNAME Chesapeake Section annual meeting are, left to right: **Frank Slyker,** Bethlehem Steel Corporation, secretary-treasurer, Chesapeake Section; **Walter E. Schmid,** NKF Engineering Associates, outgoing chairman of the Section; **James A. Lisnyk,** MarAd, newly elected chairman of the Section; **Hans J. Ruehsen,** Bethlehem Steel Corporation, author; and **William C. Brayton,** Bethlehem Steel Corporation, moderator.

The annual meeting of the Chesapeake Section of The Society of Naval Architects and Marine Engineers was held at Schrafft's Restaurant in the Quality Inn Colony 7 to elect officers for 1979-80 and to hear the paper entitled "Planning and Scheduling Hull Production Operations." The author, **H.J. Ruehsen** of Bethlehem Steel Corporation, was introduced by the moderator, **William C. Brayton,** also of Bethlehem Steel Corporation.

Mr. **Ruehsen** emphasized the important role planning and scheduling hull production plays in the overall management effort toward achieving a profitable operation. General principles of hull production planning and a method of sequencing activities from the contract award through design and erection of the ship were described. The author introduced the concept of a small-scale "unit production plan" as an effective means of accumulating and communicating production information as it develops. The plan emerges as an important coordinating link between planning, scheduling, hull design and drafting, lofting, material control and the various production departments involved. The compact format also makes it possible to quickly relate the many unit numbers on schedules and production control charts to their respective parts of the ship structure.

In planning for parts fabrication, the author discussed a computer-aided system that transforms a conventional fabrication schedule into a facility loading projection along with associated leveling and facility utilization prediction. More realistic in-process durations, based on a real measure of work content, are almost automatically obtained. Mr. **Ruehsen** suggested dimensional control procedures be established in conjunction with initial production planning as an important possible means of reducing costs.

Keep the boat working

Ring groove fill normal. Number 3 and 4 lands clean.

Liner shows little wear. Honing marks still visible.

Silver trunnion bearing shows normal wear of lead flashing.

Valve deck illustrates cleanliness typical of both engines.

The MV "Mana" does-for Dillingham. Her 12 645 E6 engines, overhauled at 16,753 hours, looked good for many more-on Caprinus® Oil.

During late 1976, the then new MV Mana's engines were filled with high alkalinity *Caprinus** T Oil. Then, in 1978, the switch was made to the even more improved *Caprinus* R Oil. Since 1976 the engines have racked up 16,753 hours before *scheduled* overhaul — without a *single* power-pack replacement. The consensus? The engines looked good enough for 20,000 hours — probably even longer.

Dillingham Tug & Barge Corporation *needs* reliability — there are no repair stations between the Hawaiian islands and the "mainland" or throughout the South Pacific where they operate. Dillingham Tug & Barge runs a top-notch maintenance program with *Caprinus* R to keep the boats working.

Both engines were exceptionally clean. Top ring side clearance averaged 0.013" and the top rings were rated at 2 to 2A — which means the grooves were visible on the top ring on about half the pistons. Silver trunnion bearings were good. Overall engine reliability as shown by maintenance records was excellent.

Low wear rates were especially evident in the top ring side clearances, ring gap clearances, ring faces, piston ring groove widths (pistons were reusable without machining for oversize rings), liners and piston skirts. Shell's premium MVI base oil keeps ring groove deposits soft, friable so deposits are worked out by ring action. Rings compress into the grooves and traverse the ports without breaking or chipping. The result is low ring and liner wear rates.

In addition, Dillingham's use of *Caprinus* R in its Fairbanks Morse engines has eliminated the former expensive task of intake and exhaust port cleaning of those engines three times a year.

Caprinus R Oil is Shell's one oil for big medium-speed marine diesels. Its high alkalinity reserve and dispersancy with Shell's premium MVI base oil fight corrosive wear, keep engines clean and deposits soft — so that normal engine operation keeps deposits from building up. It's been proven — in ALCO, EMD and Fairbanks Morse, as well as other engines.

For more information write: Shell Oil Company, Manager, Commercial Communications, One Shell Plaza, Houston, TX 77002.

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

Come to Shell for answers

Two Japanese Firms Renew License Agreements With B&W Engineering

B&W Engineering and Mitsui Engineering and Shipbuilding Co., Ltd., recently signed a renewal of the license agreement enabling Mitsui to continue to manufacture Burmeister & Wain Low Speed Diesel Engines for another decade. Mitsui has built B&W's Marine Diesel Engines in Japan since 1926.

B&W engines of the type K- and L-GFCA are becoming increasingly popular, not only as a result of their excellent design features but also because of their extremely low fuel oil consumption. This is clearly being substantiated through the steadily increasing worldwide market share.

For 1980, Mitsui has already secured an orderbook of 70 slow-speed engines for a total output of approximately 1 million bhp. There are strong indications that the production in 1980 will reach a total of 1,200,000 bhp.

Hitachi Shipbuilding & Engineering Co., Ltd. has been manufacturing B&W engines since 1951. Hitachi has also signed a renewal of their license agreement for a period covering the next 10 years.

Hitachi manufactures both 2- and 4-stroke B&W engines for a total of approximately 500,000 bhp a year.

Offshore Rig Market Outlook Published

According to a report surveying the offshore rig market, rig owners in most areas of the world are earning high profits as oil companies and others desperately search for new oil finds. The report published recently in Lloyd's Shipping Economist says: "Since world crude prices shot up from around $14 per barrel in 1978 to their current level, semisubmersible charter rates in the North Sea have jumped from under $20,000 per day to £35,000 or more. During the same period, about 30 jackup rigs have been ordered . . . many from yards in the U.S. Gulf, where exploration is set to expand rapidly as America seeks to reduce her dependence on oil imports."

For a copy of the report, write **Nedda Bradbury**, Lloyd's Shipping Economist, Sheepen Place, Colchester, Essex, England CO3 3LP.

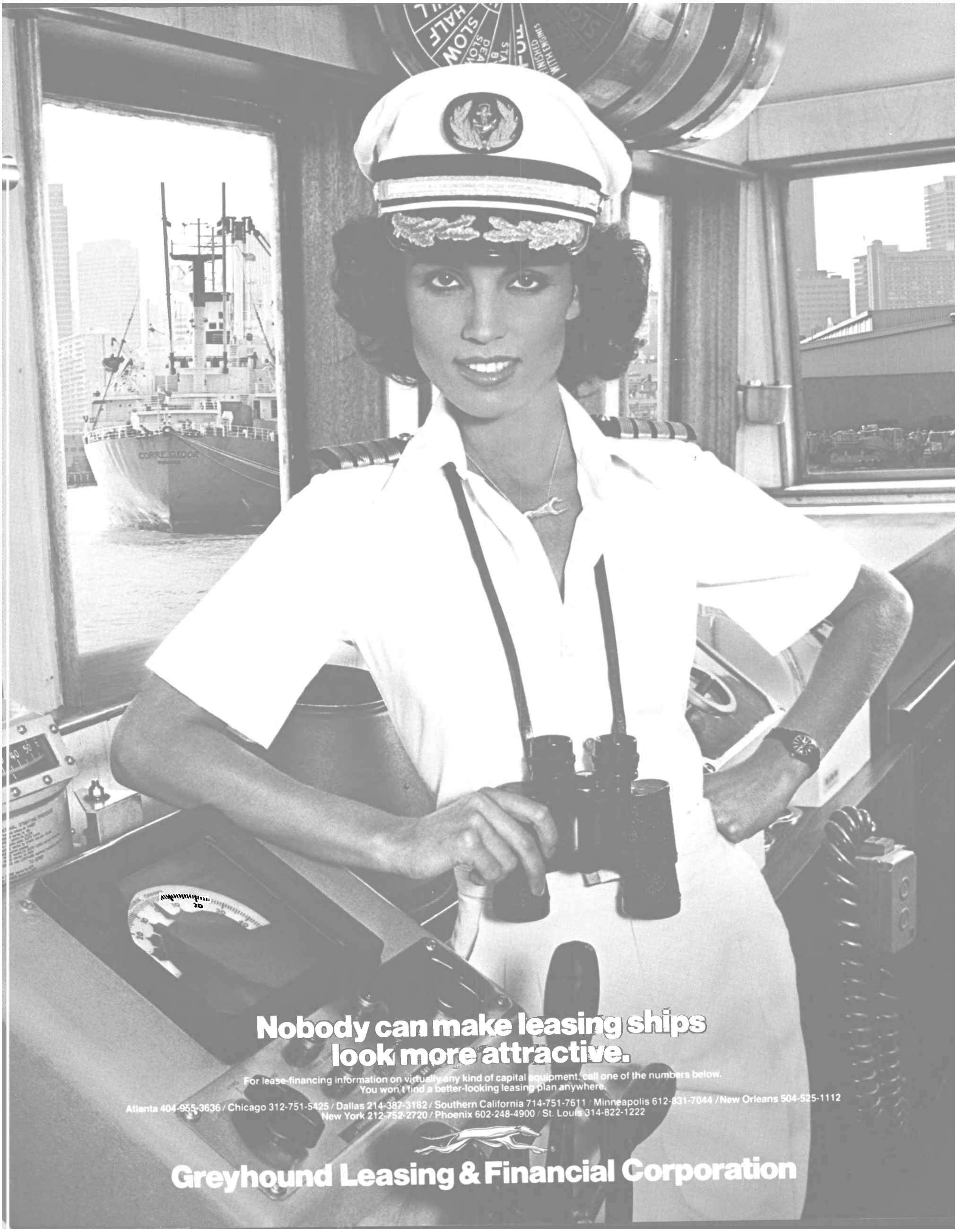
Mid-America Names Capt. J. Tinkey VP-Operations

Mid-America Transportation Company president Capt. **W.B. Fouts** has announced the promotion of Capt. **Jerry Tinkey** to vice president-Operations.

Capt. Jerry Tinkey

In his new position, Captain **Tinkey** will be responsible for the total company operations involving barge shipping on the Mississippi, Kaskaskia, Ohio, and Illinois Rivers.

Captain **Tinkey** started working the Mississippi out of Nashville, Tenn., where he joined Mid-America as a mate. After earning his master's rating, Captain **Tinkey** transferred to corporate management and has dealt with all phases of barge maintenance, traffic and personnel matters. Captain **Tinkey** is president of the St. Louis Propeller Club, is on the board of governors, National River Academy, and is chairman of the Government Industry River Advisory Committee.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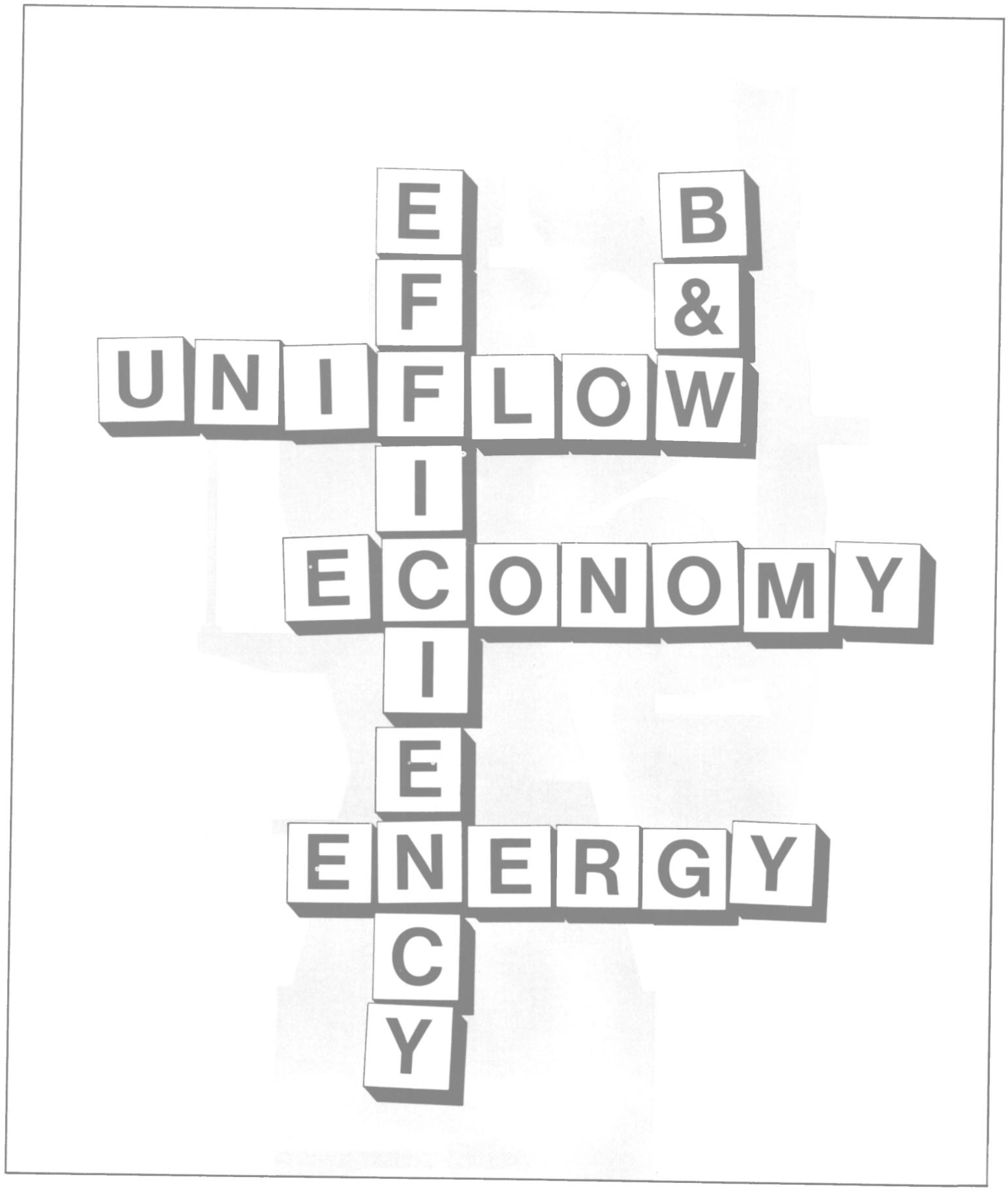
Solving the puzzle



Andino Appointed VP At Crowley Maritime International Division

Richard F. Andino has been appointed vice president and general manager of Crowley Maritime Corporation's International Division, San Francisco, Calif., according to a recent announcement by **Leo L. Collar,** CMC executive vice president.

Richard F. Andino

The appointment was made as part of a reorganization within the Crowley Operations Group to accommodate expanding operations and new business development. **G.A. Watkins,** who previously headed the International Division in addition to his responsibilities as vice president of marketing for CMC, will now be able to devote full time to increased corporate marketing requirements.

In his new position, Mr. **Andino** is responsible for international contract towing, ocean salvage and Crowley joint venture operations in the Middle East, Japan, Mexico, and Central America.

Mr. **Andino,** a graduate of the U.S. Merchant Marine Academy at Kings Point, N.Y., was previously director of marketing for CMC. Prior to joining Crowley, he was involved in the transportation business for more than 20 years, with assignments in operations, traffic and marketing.

New Literature Offered On Gems Level Switch For Corrosive Media Use

Literature is available describing a new high-performance, single station level switch from GEMS designed to operate a remote alarm or indicator, or to control pumps or other equipment. Made of all PVC, including wire leads, the switch is ideal for use in chemical applications where there is corrosive media.

Called Model LS-19735, this switch is compact and simple in design. It offers a high degree of versatility in indicating liquid levels in almost any tank or vessel, from very small to very large. The switch is compatible with a variety of acids, fuels and other chemicals. It is easy to install in various mounting methods, and maintenance is virtually unnecessary. GEMS also makes a line of multi-station level switches in PVC.

This simple design incorporates only one moving part, the float. This magnetic float will only respond to the surfaces of the liquid. The output signal is a direct level measurement as opposed to inferred or indirect measurement.

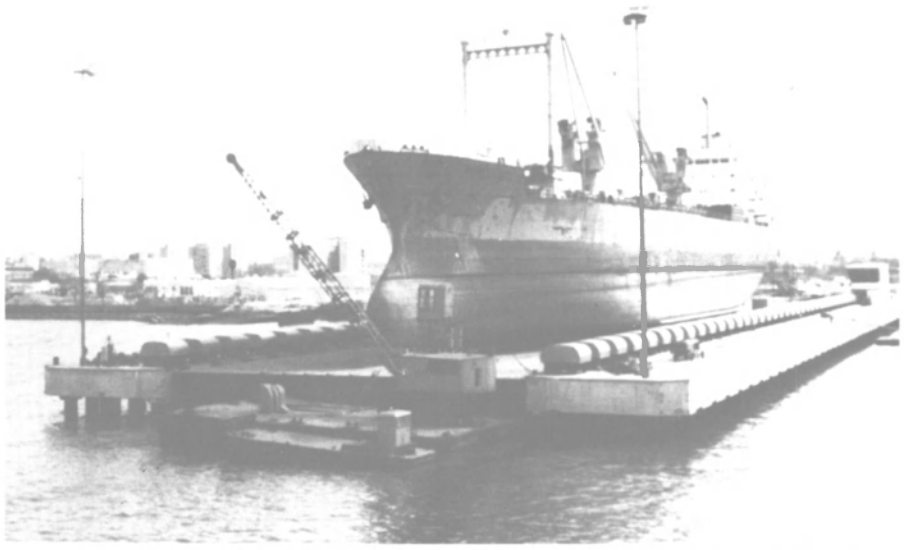
For complete literature, write to **George Angelovich,** Gems Sensors Division, Transamerica Delaval Inc., Farmington, Conn. 06032.

Collins Named Treasurer Of Trinidad Corporation

Barber Oil Corporation recently announced that **James C. Collins Jr.,** who has been director of internal auditing as well as assistant treasurer of Barber, will join the corporation's marine subsidiary, Trinidad Corporation, as treasurer, effective January 1.

Trinidad, headquartered in Philadelphia, Pa., controls a fleet of 19 U.S.-flag petroleum tankers. The company is a major transporter of Alaska pipeline oil for Standard Oil of Ohio, and operates a fleet of nine tankers for the U.S. Military Sealift Command.

Mr. **Collins** has public accounting experience with Price Waterhouse, is a certified public accountant, and has worked in the financial and internal audit departments of Merck & Co., Johnson & Johnson, and McGraw Hill. He joined Barber Oil in 1978.



Largest Syncrolift installation in the world, in operation at Tandanor, S.A., has a lifting capacity of about 40,000 dwt.

Fitzgerald To Head MarAd Title XI Program

The appointment of **Edmond J. Fitzgerald** as Director, Office of Ship Financing Guarantees at the Maritime Administration (MarAd) has been announced by **Samuel B. Nemirow,** Assistant Secretary of Commerce for Maritime Affairs.

Mr. **Fitzgerald** will be responsible for administering MarAd's Ship Financing Guarantees Program. He replaces **Gerard E. Neumann,** who has been appointed to the newly established position of Deputy Assistant Administrator for Maritime Aids (Finance).

Mr. **Fitzgerald** has served as Assistant Division Chief of the Division of Ship Financing Guarantees, and most recently as Senior Maritime Aids Specialist and Special Assistant to the Assistant Administrator for Maritime Aids.

In 1960, Mr. **Fitzgerald** joined MarAd as a Marine Insurance Examiner Trainee, and was subsequently promoted and transferred to the then Division of Mortgage Insurance Contracts. He left MarAd in 1966 to accept a position as senior financial analyst at Ford Motor Company, before rejoining the Federal Agency in 1971.

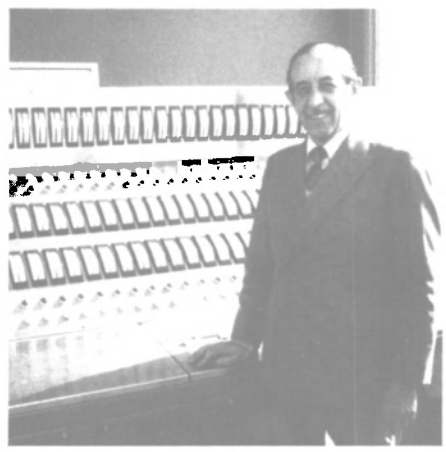
Mr. **Fitzgerald** holds a Bachelor of Science degree from the U.S. Merchant Marine Academy and a master's degree in business administration from American University.

Tandanor, S.A. Installs World's Largest Shiplift

The largest shiplift in the world recently began operations at the Tandanor, S.A., shipyard, Rio de la Plata, Buenos Aires, Argentina. The Syncrolift® shiplift platform is 185 meters long by 32 meters wide (about 607 feet by 105 feet), and has a lifting capacity of about 40,000 dwt. Completed only 18 months after construction began, the Tandanor Syncrolift was commissioned in late 1979.

The Rio de la Plata Shipyard is a state-owned facility which began its activities in 1879. The original yard was a Navy repair facility, and the present company continues this tradition as well as serving commercial vessels. Because of its prior success in repairing and building ships, Tandanor several years ago decided to expand its docking facility. Tandanor's engineers did an in-depth study of the various available drydocking systems to determine which would give the most efficient, economical operation and meet the unique requirements of their yard. Due to the lower construction cost, decreased construction period, space availability, possibility of immediate enlargement at low cost and reduced time of operations, the Syncrolift system was selected.

The on-shore transfer system permits the yard to handle as many as six full-capacity vessels, or 12 smaller vessels simultaneously, and still have the Syncrolift platform free for docking Naval vessels. The transfer system has two sections; the larger work berths are for commercial vessels, and the smaller ones, including covered work areas, are for repairing and refitting Naval ships.

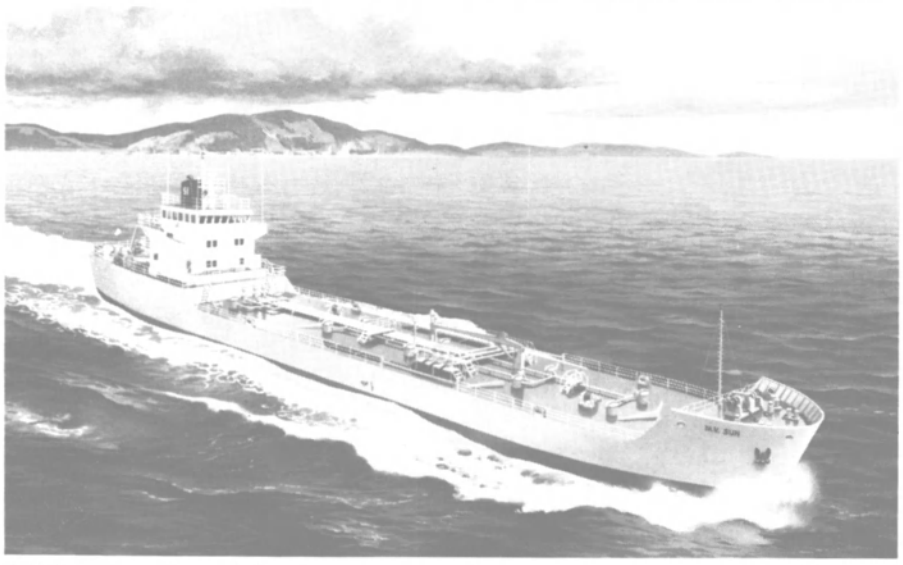


Juan Luis Poggi, president of Tandanor, S.A., shown at the Syncrolift console activating the shiplift for the first time during initial testing of the new installation.

In the brief time since the new Syncrolift installation was commissioned, Tandanor reports it has already generated over a million dollars in revenue despite the fact that the transfer system is only partially completed.

Tandanor anticipates once the full facility is operating, the increased economic effect of the Syncrolift shiplift and transfer system will be approximately $20,000,000 a year.

Pearlson Engineering Company, a member of the NEI Group of Miami, Fla., supplied the Syncrolift equipment and design. There are presently 138 Syncrolift installations in 57 countries, including 26 which belong to national navies.



Artist's conception of Sun Transport vessel now under construction at Mangone Shipbuilding Company, Houston, Texas.

Mangone Building New Special Purpose Tanker For Sun Transport

Sun Transport, Inc., a division of Sun International, Inc., has contracted with Mangone Shipbuilding Company for a 245-foot 6-inch (74-meters) vessel designed specifically as a Twin Screw Motor Tank Barge to work in Sun's Northeast coastal operations.

The new vessel is the first such carrier designed for the special purpose of transporting oil products in both offshore and inland waters, according to **Don L. Godeau,** vice president and general manager of Mangone Shipbuilding, Houston, Texas. The vessel will combine offshore/oceangoing capabilities with the small size and maneuverability necessary to navigate inland waterways and canals. It is scheduled for completion in July 1980.

Classed ABS A-1 Oil Carrier Maltese Cross AMS, ACCU, and USCG, EPA and USPHS certified, the new vessel will have a cargo capacity of approximately 21,549 barrels. Ten tanks segregated into three sections will transport grade B oil products.

The vessel will measure 45 feet (13.5 meters) across the beam, with 19-feet 3-inches (5.8-meters) depth, and design draft of 14 feet 6 inches (4.4 meters). Powered by twin EMD 8-645 E7 diesels developing 1,900 total horsepower, it will travel at a service speed of approximately 12 knots. Deadweight of the ship will be approximately 2,750 long tons. It will have accommodations for eight people.

Mr. **Godeau** said the Sun Transport vessel will be equipped with three Goulds diesel-driven deepwell pumps rated at 3,000 bbl/hr handling of cargo.

Other equipment will include two 125-kw diesel-driven generators and a 35-kw standby generator. Electronic equipment includes Sperry gyrocompass, Sperry autopilot, Loran-C, Fathometer, two radar units, ADF, two VHF radios, SSB, and E.P.I.R.B.

The ARCO Alaska, 188,500-dwt San Diego-class tanker, built by NASSCO for Arch Tankers, Inc.

NASSCO Delivers 188,500-DWT ARCO Alaska To Arch Tankers

The ARCO Alaska, a 188,500-dwt San Diego-class tanker built by National Steel and Shipbuilding Company (NASSCO), San Diego, Calif., was recently received by Arch Tankers, Inc., a wholly owned subsidiary of Atlantic Richfield Company. **John M. Murphy,** vice president for NASSCO Corporate Relations, formally turned over the tanker to ARCO Transportation Company vice president Capt. **Charles M. Lynch.**

The keel for the 952-foot ARCO Alaska was laid May 9, 1978. The vessel was launched February 24, 1979, and christened September 7, 1979. A sistership, ARCO California, will be launched in January and delivered in mid-1980.

Both tankers will be used to transport Alaska oil, principally to Long Beach, Calif., where ARCO has offloading and storage facilities to supply its 185,000 barrel-per-day refinery nearby. Each tanker can carry about 1.3 million barrels.

The ARCO Alaska is the third NASSCO-designed San Diego-class tanker to be delivered. The company delivered two identical vessels to Shell Oil Company in 1978. The tankers are the largest ever built on the West Coast.

The ARCO Alaska and ARCO California will be the largest vessels in ARCO's fleet of 14 vessels, and the first ones to have double bottoms which will also be used to carry segregated ballast. The vessels are also fitted with a collision-avoidance radar system, satellite communications system, plus a satellite navigator.

An inert gas system maintains all cargo spaces in a noncombustible condition, thus minimizing the chances of shipboard fires or explosions. The cargo system is designed with a holding tank to collect oil from tank washings for discharging to shore facilities. The bilge oily-water separation systems will effectively separate and retain oil from the bilge waters for discharge to shore, in accordance with U.S. Coast Guard requirements.

National Steel and Shipbuilding Company is a wholly owned subsidiary of Morrison-Knudsen Company, Inc.

MarAd Appoints Neumann Maritime Aids Deputy

Samuel B. Nemirow, Assistant Secretary of Commerce for Maritime Affairs, Maritime Administration, has announced the appointment of **Gerard E. Neumann** to the newly created post of Deputy Assistant Administrator for Maritime Aids (Finance).

For the past seven years Mr. **Neumann** had been Director of the Office of Ship Financing Guarantees. He has been succeeded in that position by **Edmond J. Fitzgerald.**

In his new position, created by a recent reorganization of the Office of the Assistant Administrator for Maritime Aids, "Mr. **Neumann** will be responsible for reporting to the Assistant Administrator for Maritime Aids on all matters relating to the financial assistance programs administered by the Maritime Administration," Mr. **Nemirow** said.

A second new position, Deputy Assistant Administrator for Maritime Aids (Trade), now vacant, has also been established.

Mr. **Neumann** joined MarAd in 1961 as a Trade Route Examiner, and transferred to the then Division of Mortgage Contracts in 1967. Mr. **Neumann** is a graduate of the New York State Maritime Academy.

Tracor Receives Navy Order For $5.5 Million

Tracor, Inc., Austin, Texas, is being awarded a $5,533,717 cost price fixed fee contract for support services for SSBN unique Sonar Program. Work will be performed in Rockville, Md. The Naval Sea Systems Command is the contracting activity. (N00024-80-C-6000)

Norwegian Order For Cargo Carrier To IHI

IHI (Ishikawajima-Harima Heavy Industries Co., Ltd.) recently received an order for a 22,000-dwt Fortune-type multipurpose dry cargo carrier from Paal Wilson & Co., A/S, Hop (Bergen), Norway, through intermediation of Arvid Bergvall Shipbroking A/S & Co., Oslo, Norway.

The contract was signed by **Daniel Lunde Jr.**, director of Paal Wilson & Co., A/S, and **Taiji Ubukata**, president of IHI, at IHI's head office in Tokyo.

The vessel will be built by IHI's Tokyo Shipbuilding & Crane Works, and is scheduled for delivery at the end of February 1981. To date, IHI has completed and delivered 58 Fortune-type vessels to its customers since the introduction of the Fortune-class vessel in June 1971. The vessel ordered by Paal Wilson & Co. will be the first Fortune flying the Norwegian flag.

Principal particulars of the Fortune are: classification, Det Norske Veritas; gross tonnage, about 14,000; deadweight, about 22,000 tons; length between perpendiculars, 155.448 meters (about 510 feet); breadth, 22.860 meters (75 Feet); depth, 13.560 meters (44 feet); draft, 9.848 meters (32 feet); main engine, IHI-S.E.M.T. Pielstick 16 PC2V-type diesel engine developing a maximum output of 8,000 bhp; and speed, 15 knots.

Kerr Steamship Names Holmes Assistant VP

Carl L. Holmes has been appointed assistant vice president by Kerr Steamship Company, Inc.

Born in San Francisco, Calif., Mr. **Holmes** joined Kerr in 1974, after extensive marketing management experience with McCormick & Co., Inc. Most recently, he has served as general sales manager, domiciled in Kerr's San Francisco office.

Acadian Will Build Up To Four Clipper-Class Container Feeder Ships

The Acadian Marine group of companies based in New Orleans, La., has announced the signing of contracts valued at $18 million and its construction plans for several 350-foot "Clipper-Class" feeder containerships.

The Acadian Group recently inked contracts for the charter of 10 of its ships. The charters are long-term contracts for its ships in different parts of the world, including Mexico, Nigeria, Bermuda, and the Caribbean area. The charters are with major oil companies, governments, and national oil companies for offshore oil service, seismograph, and container service.

Prieur J. Leary Jr., president, stated that the year-end record backlog for the group is the result of the worldwide demand for energy and the recognition of the need for small and medium-sized container vessels. Mr. **Leary** stated that at the present time, the value of The Acadian Group's fleet, including four 230-foot Mariner-Class, SCR Diesel Electric vessels under construction, has swelled to 42 million dollars.

Acadian owns and operates ships in the offshore oil industry, the container trade, and the seismograph and research trades off the coast of 20 different countries. In addition, it has a container division which utilizes containers, trucks, and cranes, to load and unload its vessels.

Mr. **Leary** also announced the group's plans to build up to four Clipper-Class feeder container vessels; proposals are presently in the hands of U.S. shipyards. The 350-foot, high-speed coastal traders will offer major shipping companies the use of smaller vessels to economically feed the larger trans-Atlantic containerships, the same way smaller airplanes feed jumbo aircraft. The Clipper-Class vessels will measure 350 feet by 62 feet by 26 feet and will make 18 knots. These vessels will be able to carry 200 forty-foot containers and will also have roll-on/roll-off capability. They will be U.S.-flag, built in U.S. shipyards and will trade in and around the North Sea, the East Coast of the United States, and the U.S. Gulf Coast.

B.T. Kelley Retires From Hillman Barge

Bernard T. Kelley, chairman of the board of Hillman Barge and Construction Company, Brownsville, Pa., has retired effective January 1, 1980.

Mr. **Kelley's** accomplishments in the marine industry helped Hillman Barge and Construction Company in becoming a leading shipyard on the inland waterways.

Mr. **Kelley** was with Hillman his entire business career.

National Marine Adds Drydock And Fabrication Shop To Shipyard

Substantial equipment additions consisting of a new 3,500-ton drydock and large steel fabrication shop are now in use at National Marine Service's Hartford, Ill., shipyard, **D.A. Wright,** president of the company, has announced.

"The new facilities complement each other and permit the shipyard to offer faster hull repair service with greatly reduced downtime for damaged river vessels," adds **Eugene E. Ahlemeyer,** president of the Shipyard Division.

The shipyard facility, located just north of St. Louis near the confluence of the Missouri, Illinois and Mississippi Rivers at Hartford, Ill., has four additional drydocks, a modern diesel engine repair shop, a complete machine shop, an extensive marine parts inventory, harbor fleeting and shifting service, a cleaning plant for towboats and barges, and a wheel shop.

The new drydock at the National Marine Service shipyard can handle the largest towboats on the Rivers, loaded barges or two vessels at once.

The new drydock lifting capacity of 3,500 tons permits underwater repair of the largest towboats on the inland waterways, including triple-screw 10,500-hp towboats and even loaded barges in emergencies.

The 16,000-square-foot steel fabrication shop, containing the most modern welding and steel cutting equipment, houses a 600 ton press which is capable of forming 41-foot sections of steel plate up to ½ inch in thickness.

A new steel-plate fabrication shop is now forming steel plate up to ½ inch thick and up to 41 feet long at the National Marine Service shipyard at Hartford, Ill.

An overhead crane transports steel plate from an outside storage area into the shop. After fabrication, a second overhead crane conveys the completed sections through the shop and then, via curved rails, to the repair docks.

The ability to handle larger fabricated steel sections, and the addition of the high-capacity drydock, greatly increases the capacity of the shipyard to service the marine industry. **Robert E. Carroll,** vice president and general manager of Operations, says, "These additions are our answer to the growing need for faster service for larger towboats and barges." Mr. **Carroll** added that future programs include a new machine shop, and facilities for expanding the diesel engine services.

National Marine will also open a diesel engine repair facility in New Orleans, La., in the near future. "This new branch responds directly to the rapidly growing Gulf Coast marine and offshore industries," says **Glennon G. Bequette,** vice president for Business Development of the Shipyard. "Large General Motors EMD diesel engines are often specified for powering oilfield supply vessels, drilling rigs and generators, and parts and service for EMD engines are one of our specialties."

National Marine is a subsidiary of NICOR Inc., and is headquartered at 1750 Brentwood Boulevard in St. Louis, Mo.

De Laval Separator To Become Alfa-Laval, Inc.

The De Laval Separator Company, well-known in the marine industry, will change its name to Alfa-Laval, Inc., and simultaneously move its corporate and industrial, food and dairy marketing headquarters to Ft. Lee, N.J., March 1, 1980.

The name change, according to **Kees Sonius**, president, emphasizes the U.S. company's close relationship with its parent corporation, Alfa-Laval, the world's largest producer of centrifuges for marine and industrial use, compact heat exchangers, and milking machines. The company is also well-known for its chemical process systems and liquid processing equipment for industrial plants. Alfa-Laval AB is headquartered in Tumba, Sweden.

Along with Alfa-Laval, the company will continue to utilize its well-known trade names including De Laval® centrifuges and agricultural equipment, American Heat™ compact heat exchangers, Contherm® scraped-surface heat exchangers, and G&H® valves, pumps and fittings.

At the time of the name change to Alfa-Laval, Inc., the company will move its corporate and industrial divisions to 2115 Linwood Avenue, Ft. Lee, N.J. 07024. The Ft. Lee location, a new five-story building, is adjacent to Interstate 80/95 at the western end of the George Washington Bridge. This move will allow the company to centralize its many industrial divisions in one headquarters location.

Artist's conception of the new Alfa-Laval corporate headquarters in Fort Lee, N.J.

Alfa-Laval, Inc. will continue to operate its manufacturing plants in Poughkeepsie, N.Y., Somerville, N.J., Lykens, Pa., Newburyport, Mass., and Kenosha, Wis.

$6 Million Florida Terminal Expansion

McDowell-Wellman Company, Cleveland, Ohio, has been authorized to proceed with design and detailed engineering plans for the expansion of a major Florida phosphate shiploading terminal by Seaboard Coast Lines Railroad, owner and operator of the terminal in Tampa. The expansion project, when completed, would be valued in excess of $6 million.

Phosphate throughput capacity at SCL's Rockport Terminal will be expanded to 8.5 million tons annually. New plant facilities will include a unit-train rotary car dumper, additional storage and reclaiming conveyors, expanded dock area and a new ship berth. Travel distance of the traveling shiploader will be lengthened as well, so that either of two berthed vessels may be loaded.

The McDowell-Wellman engineering phase of the expansion project is expected to be completed in nine months.

Hitachi Delivered 22 Ships In '79

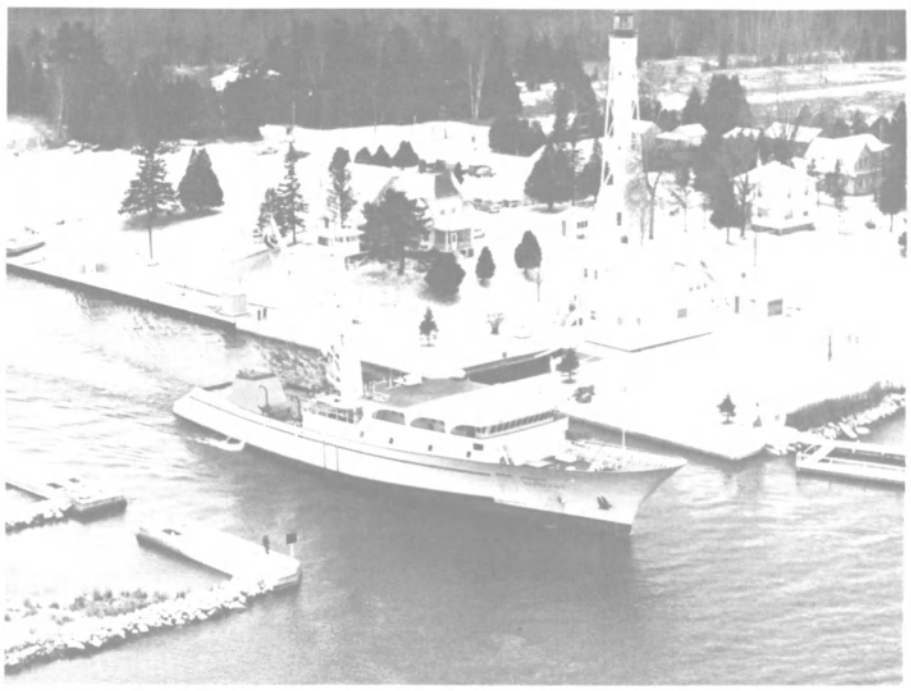
Hitachi Zosen has announced it launched 15 vessels totaling 397,846 deadweight tons and delivered 22 ships having an aggregate of 778,109 tons in 1979.

In 1978, the yard launched 21 ships amounting to 527,444 tons and delivered 22 vessels whose total deadweight was 1,215,816 tons.

Of the vessels delivered last year, 13 totaling 442,813 tons were for export account. The year before, the yard delivered 19 vessels totaling 1,088,696 tons to foreign owners.

In December 1979, Hitachi received orders for a total of three 60,000-deadweight-ton bulk carriers.

Two of the vessels are for Aksjeselskapet Kosmos, a member of Norway's Anders Jahre Group, and one is for Epos Marine Corp. of Liberia. All three vessels are Hitachi's standard Panamax-type bulk carriers, bringing current orders for this type of ship to a total of 44.



The 225-foot, 1,200-ton superseiner Napoleon passes the Sturgeon Bay Canal Station, entering Lake Michigan on the first leg of its delivery trip.

Superseiner Napoleon–First Of Three–Delivered By Peterson Builders

The superseiner Napoleon, first of a three-boat contract signed between Peterson Builders, Inc., Sturgeon Bay, Wis., and Ocean Blazer, Inc. in July 1978, was turned over to her owners recently just before leaving Sturgeon Bay.

To be operated under the Venezuelan flag by Venatun, Inc., the new seiner will be under the command of Capt. **Manuel Elduayen**, technical director of Noratun/Venatun. The firm has two other boats on order at the present time, including the third of PBI's series, the Jane, which will be delivered in the fall of 1980. The same owners have operated the superseiners Olivia and Lucille for several years. The new boat will fish for Star-Kist.

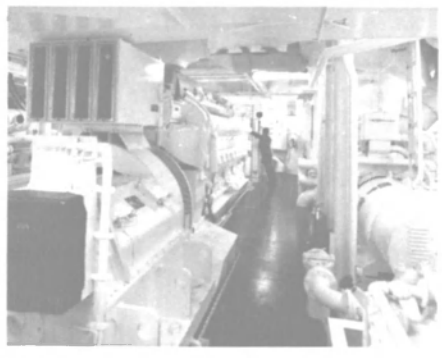
Of a completely new design prepared by San Diego, Calif., naval architect **Ivo Zaninovich**, working closely with the owners, the vessel's working plans were prepared by the Sturgeon Bay firm of R.A. Stearn, Inc. N/C lofting and parts programming were accomplished by Designers & Planners, Inc., using the "AutoKon" system. Peterson Builders' computer-controlled plasma cutting facility was used to cut all steel and aluminum parts for the series of boats.

Featuring the newly developed Marco WS444 "Superseine" winch and a 56-inch Marco power block, a remarkably high productivity is expected for the Napoleon and her sisterships.

The Napoleon will travel to and from the fishing grounds at about 16 knots, propelled by her EMD 20-cylinder Model 645-E7 engine with Falk 3548MRV 5:1 reverse/reduction gear with slip clutches. The 128-inch five-bladed Coolidge stainless-steel propeller turns on a 12-inch-diameter tailshaft in Waukesha oil-lubricated bearings. A Mathers control system, with wheelhouse and port bridge wing control stations, is installed.

The steering engine is a Frydenbo model HS120 with two 15-horsepower hydraulic power units which may be operated in parallel or individually. Controlled by the Sperry gyrocompass and autopilot, the steering gear can move the rudder hardover to hardover at full power in less than 15 seconds. The 48-inch Schottel bowthruster is driven by a Detroit Diesel Allison 12V-71 engine with Twin Disc MG-514 gear and has a Mathers control system interfaced with the autopilot, which enables the ship to hold to a predetermined heading with no way on.

The 900-kw total electrical power is provided by three Caterpillar Model D353 engines driving 480-volt 3-phase Kato brushless generators. Power is distributed by a Federal Pacific parallel-type main switchboard, Cutler-Hammer motor starters, and Westinghouse distribution panels.



Motive power for the Napoleon and her sisterships is provided by this 20-cylinder EMD 645-E7A engine which drives the 128-inch-diameter five-bladed Coolidge propeller through a Falk 5.033:1 reverse/reduction gear. In this view looking forward, one of three Caterpillar 300-kw Model D-353 generator sets is visible; a twin is located on the port side of the lower engine room.

The main hydraulic system has two sources of power: a Caterpillar D353E close coupled to a Marco multipump drive located on the port side of the upper engine room, and directly beneath it, a Marco free-standing multipump drive with an emergency coupling connection to the forward end of the port lower generator set.

The vessel's tuna catch is refrigerated by an ammonia system. Four 8-cylinder Vilter compressors driven by 100-horsepower Lincoln motors circulate ammonia through approximately 26,000 feet of galvanized pipe coils arranged around the walls of the 17 brine wells.

Very comfortable accommodations for a crew of 23 are provided, including private staterooms for captain, navigator and chief engineer.

The crow's nest is equipped more extensively than normal, including remote controls for both VHF and single sideband radios, helicopter communications, and bowthruster control.

Nerve center of the Napoleon is the wheelhouse console featuring handsome teak woodwork and a formica-topped console.

The wheelhouse and radio room are equipped with two Sperry MK127E radars, Sperry MK37 gyropilot and 8T magnetic compass, Wesmar SS170 scanning sonor, Elac navigational depth recorder with digital readout and alarm, Taiyo VHF and marine band automatic direction finders, Hy-Gain VHF radios, two Hull 2320 single sideband radios (one with Northern 1-kw linear amplifier), Magnavox 1142 satellite navigator, Northern emergency radio, and Honor Marine telephone and public address systems.

In addition to approximately 80,000 gallons of diesel fuel capacity (in dedicated tanks) the ship carries 12,000 gallons of turbine fuel for her helicopter, about 2,000 gallons of gasoline for speedboats, and miscellaneous lube oil, potable water, solvents and dirty oil. A Maxim desalinating plant is provided, and all vessel sewage is handled through a Red Fox Model RF750 marine sanitation device.

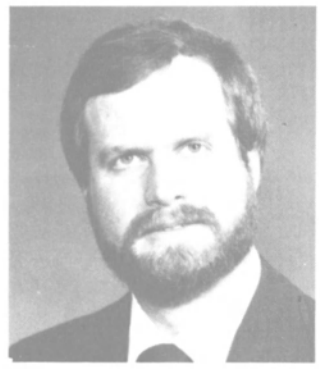
The vessel is completely painted with a system specified and provided by the Pro-Line Paint Company of San Diego, which includes epoxy, inorganic zinc and linear polyurethane finishes for the ultimate in protection against corrosion. Other means of reducing maintenance costs and fighting corrosion were employed in the vessel's construction, including extensive use of stainless-steel plating and chafing bars in areas of high wear; noncorrosive materials for piping systems; many of the Pacific pumps have epoxy fuse-coated impellers and cases; pump motor windings are epoxy encapsulated; integral heaters are provided for brine circulating pumps in the pump alley, and PVC piping is used extensively.

The ventilation throughout the ship is provided by Buffalo Forge fans.

Just after the delivery of the Napoleon, the second vessel in the series for Ocean Blazer, the Captain Frank Medina, for Capt. **Joe Medina Jr.** of San Diego, was launched. Now in the outfitting stages, the Captain Frank Medina will be delivered in late spring 1980, followed by the Jane in the fall of 1980.

Rossway Named VP Of Twin City Shipyard

Ronald A. Rossway has been named vice president of Twin City Shipyard, Inc. (TCS), St. Paul, Minn., according to an announcement by the company's president **John Buursema**.



Ronald A. Rossway

Mr. **Rossway** formerly served as director of engineering for Twin City Shipyard after the company initiated a facilities expansion program to accommodate a side trailing split hopper dredge now under construction.

He is a graduate of the University of Michigan and has degrees in naval architecture and marine engineering and aerospace engineering. His experience includes service as academic instructor for Newport News Shipbuilding Company's Apprentice School, manager of hull engineering for Nashville Bridge Company, and chief engineer of Maxon Marine Industries, Inc.

He is a member of The Society of Naval Architects and Marine Engineers, the American Association of Cost Engineers, the American Society for Quality Control, and the American Welding Society.

Twin City Shipyard is a wholly owned subsidiary of Twin City Barge & Towing Co., St. Paul, a diversified company engaged in river transportation, barge construction, terminal operations and coal sales.

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$120-Million Amoco Jacket Contract Awarded To McDermott Scotland

Amoco (UK) Exploration Company, an operator for the license group concerned*, announced it has placed a contract with McDermott Scotland, of Ardersier in Scotland, for the construction of the platform jacket for its North West Hutton oilfield in the U.K. sector of the North Sea. The contract will be worth approximately 55 million pounds (about $120 million).

Completion is scheduled for mid-1981, when the jacket will be floated out to the field location.

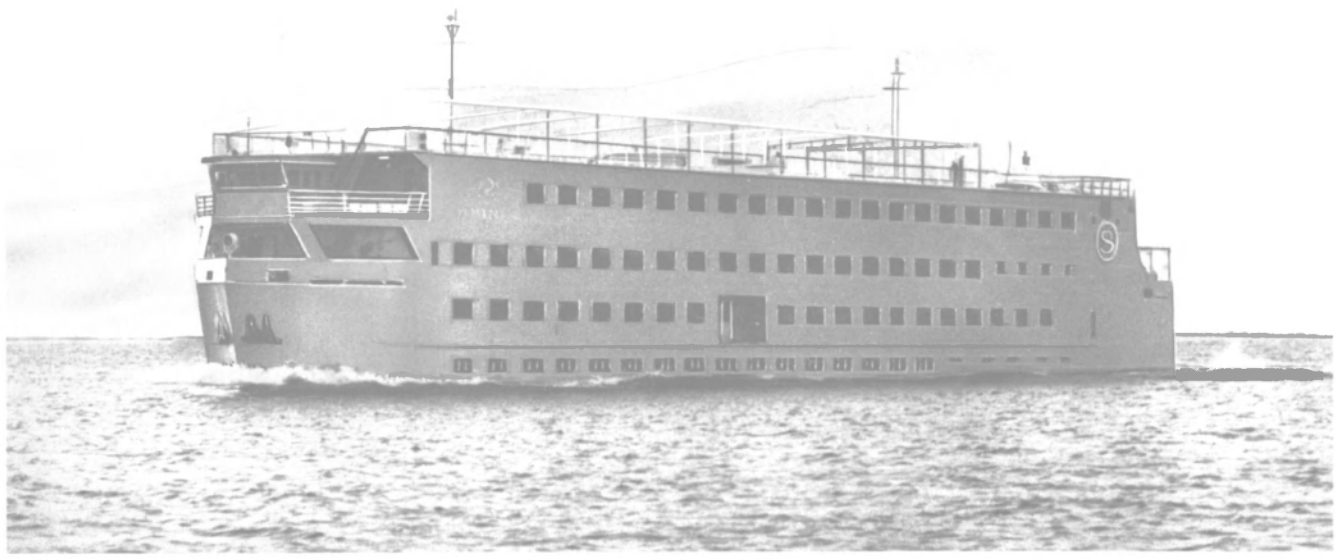
It is expected about 500 to 600 workers at Ardersier will be employed on the jacket project. This will involve, at one time or another, most of the approximately 1,400 total work force currently at the yard. It is also possible recruitment of additional workers may be required.

North West Hutton oilfield is scheduled to begin production in 1982, building up to a daily output of around 100,000 barrels of oil, and 35 million cubic feet of gas.

The semisubmersible rig Venture I began drilling the first production well on the field through a 20-slot seabed template last October, less than three months after the government gave its approval for the 500-million-pound development of the field.

*The group of companies for which Amoco is operator on the North West Hutton oilfield is as follows: Amoco (UK) Exploration Company (Operator), Gas Council (Exploration) Limited, Mobil North Sea Limited, and Amerada Petroleum Corporation of the United Kingdom, North Sea Inc.

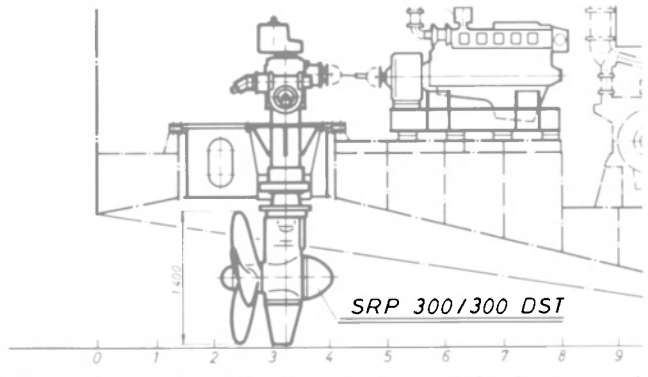
SCHOTTEL-System solves problems of shallow-draught navigation on the Nile River



Four luxury hotel ships built for the EGOTH Egyptian General Company for Tourism and Hotels have been put into service on the River Nile by SHERATON FLOATING HOTELS. They carry up to 284 persons and run between Luxor and Asswan. With an overall lenght of 71.80 m and a width of 11.30 m, they have a draught of only 1.50 m.

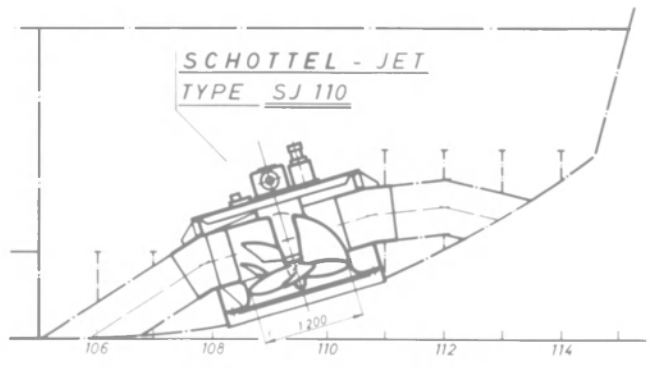
However this unusually low draught does not exclude the possibility of occasionally touching the bottom due to the extremely shallow water in this region. Damage to propellers, shafts and rudder systems of conventionally designed vessels necessitates extremely time-consuming and costly repairs in dock and due to the lack of shipyard facilities this would not be feasible in the area where the ships are to operate. For this reason each of the four ships was fitted out with three SCHOTTEL-Rudderpropellers type 300/300 DST (well installation) with a total power of 1005 kW (1366 hp). They can be removed and re-installed using the facilities available on board while the vessel ist still afloat.

The SCHOTTEL-Rudderpropeller is a combined propulsion and steering unit which transforms the engine power



into optimum steerable thrust using matched gears and a specially designed propeller which turns through a full 360°. This gives propulsion steering in any direction ahead, astern or sideways.

All four ships have been equipped with a full follow up electro-hydraulic SCHOTTEL-Steering system S 600. Due



to the extremely shallow water and the sudden strong cross winds which occur a SCHOTTEL-Jet SJ 110 of 163 kW (220 hp) has been installed at the bow of the hotel ships without projecting below the hull. As in the case of the SCHOTTEL-Rudderpropeller the SCHOTTEL-Jet produces a thrust which can be directed at any angle and is therefore an extremely effective bow manoeuvring aid.

For almost 30 years the SCHOTTEL-System has proved itself throughout the world. SCHOTTEL steering and propulsion units offer maximum manoeuvrability and optimum efficiency with propulsion steering in any direction both ahead and astern. In addition the SCHOTTEL-System requires a minimum of maintenance, is economical and space-saving. Up to the present over 15,000 SCHOTTEL units with more than 4 million hp propulsion capacity have been delivered all over the world.

SCHOTTEL International:
The SCHOTTEL-Group, with its headquarters at Spay on the Rhine offers world-wide sales and service through SCHOTTEL-companies located at The Hague, London, Paris, Vienna, Hamburg, Basle, Miami, Buenos Aires, Rio de Janeiro, Singapore, Sydney and representatives throughout the world.

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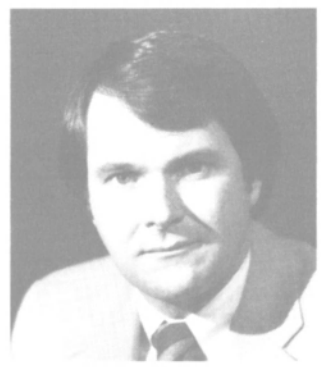
E.J. Murphy Made Senior VP Of Coscol Petroleum And Coscol Marine Corp.

Edward J. Murphy has been elected senior vice president of Coscol Petroleum Corporation and Coscol Marine Corporation, units of The Coastal Corporation, Houston, Texas.



Edward J. Murphy

In his new capacity, Mr. **Murphy** reports to **Peter J.R. Hunter,** Coastal senior vice president, and is responsible for marine transportation including the areas of administration, operations and chartering.

Coastal currently owns 11 vessels and operates 11 others under time charters. On a daily basis, approximately 50 owned or chartered tankers transport crude for Coastal's four refineries and the company's international marketing operations.

Mr. **Murphy** joined Coastal's legal department in 1978 as admiralty counsel. He later transferred to Coscol Marine Corporation.

D.W. Kent Named To New Executive Posts At Houston Offshore Int'l

David W. Kent has been elected to the office of vice president, Operations, and member of the board of directors of Houston Offshore International, Inc., Houston, Texas.

Mr. **Kent** will have total responsibility for the operations, construction, and purchasing of equipment for Houston Offshore's drilling rigs in his new position. He was formerly manager of Gulf Coast Operations.

Houston Offshore International operates two jackup drilling rigs, Nueces I and Sabine I, offshore in the Gulf of Mexico, and has a third jackup, Sabine II, under construction in Bethlehem Steel's shipyard in Beaumont, Texas, for delivery in April of 1980.

Mr. **Kent** is located at Houston Offshore's operations office at 80 Interstate 10 North in Beaumont.

Top Management Changes Announced By Lockheed

Election of **G. Graham Whipple** to the position of group vice president was announced recently by **Lawrence O. Kitchen,** president and chief operating officer of Lockheed Corporation.

Mr. **Kitchen** said Mr. **Whipple,** formerly president of Lockheed Shipbuilding and Construction Company (LSCC) at Seattle, Wash., since 1976, has been assigned the overall responsibility for direction of four of the firm's operating divisions. The divisions include LSCC; Lockheed Air Terminal, based at Burbank, Calif.; Lockheed Electronics Company, headquartered at Plainfield, N.J.; and the newly established Lockheed Engineering and Management Services Company at Houston, Texas.

Mr. **Whipple,** who joined Lockheed in 1970 to become president of Lockheed Propulsion Company, succeeds **William B. Rieke** who retired following 38 years of service with the firm. Mr. **Rieke** will continue to serve the corporation in a part-time advisory capacity.

In other board action, **Lawrence A. Smith,** director of scientific applications for the Space Systems Division at Lockheed Missiles & Space Company, was elected a corporate vice president and assigned as president of LSCC to succeed Mr. **Whipple.**

New 32-Page Pressure Gauge Brochure Free From General Instrument

General Instrument's colorful 32-page catalog is a comprehensive treatment of GIC's wide line of pressure gauges. It features illustrations of various models (some with color cut-aways showing internal parts), detail descriptions of application and design, plus technical specifications and dimensional drawings for each of over 12 series of gauges. Pages for notes are also included. For a free copy, write to **Jack Olieman,** General Instrument Corporation, 3811 University Boulevard, West #26, Jacksonville, Fla. 32217.

Millard Named Deputy Managing Director Of Mooremack, South Africa

Robert E. O'Brien, president and chief executive officer of Moore McCormack Lines, Incorporated, has announced the appointment of **Michael E. Millard** as deputy managing director, Moore McCormack Lines S.A. (PTY) Ltd., effective January 1, 1980.

With headquarters in Johannesburg, South Africa, Mr. **Millard** will assist Capt. **C.D. Wells,** managing director, in the overall operations of Moore McCormack Lines South and East African cargo liner service.

Mr. **Millard** has been affiliated with the company's South African organization since 1966. He held various positions in Moore McCormack Lines Agency, Central Office, Durban, prior to his appointment in 1970 as assistant manager. In 1973, he was transferred to Johannesburg as Mooremack's director of marketing and sales, the position he currently holds.

Kirby And Kelly Named At Farrell's Chicago Office

James P. Horn, president of Farrell Lines Incorporated, recently announced personnel changes in the company's Midwest regional office in Chicago, Ill.

David R. Kirby has been appointed Farrell Lines' general manager, Midwest region. In 1969, Mr. **Kirby** was employed by American Export Lines, where he worked in that company's Baltimore office in various capacities for three years, until his appointment as their district manager in Detroit. In 1975, he was assigned to the Tokyo office and was appointed managing director, Far Eastern operations.

J. Neville Kelly, formerly Farrell Lines' Great Lakes regional manager, has been named manager, national accounts, in the Chicago office.

Moody Offshore Seeks Title XI For Supply Boat Costing $2.5 Million

Moody Offshore, Inc., 702 Moody National Bank Tower, Galveston, Texas, has applied for a Title XI guarantee to aid in financing the M/V Kara Seal, an oceangoing tug supply vessel.

The 2,500-hp vessel was delivered October 18 by Zigler Shipyards, Jennings, La. The 185-foot tug/supply boat is capable of worldwide operations.

The estimated actual cost of the vessel is $2,515,000. If approved, the Title XI guarantee would cover 87½ percent of that amount.

Toronto-U.S. Ferry Service Subject Of MarAd Study

Rising fuel costs, highway congestion and the growth of trailer traffic across the Niagara River border have created an opening for trans-lake ferry service between Toronto, Ontario, Canada, and Rochester, N.Y., according to a recent study commissioned by the U.S. Maritime Administration (MarAd).

Examining the feasibility of a trailership operation between the two ports, the report noted that more than 600,000 trailers—about six million tons of cargo—traveled the overland route in 1973, and this figure is now approaching one million trailers.

The authors of the study, Booz, Allen and Hamilton Inc. of Bethesda, Md., found that a significant portion of the current truck traffic could use the proposed waterborne service. The cross-lake run would shorten the distance between Toronto and Rochester by 75 miles, allowing the ferry service to be cost competitive.

Toronto was selected for the purposes of the study because the city is the Canadian terminus for much of the Niagara frontier traffic.

According to **Ken Closs**, traffic chief for the Toronto Harbour Commission, "This kind of operation could bring far-reaching financial benefits for the entire waterfront community in terms of cargo-handling charges, customs and packaging services.

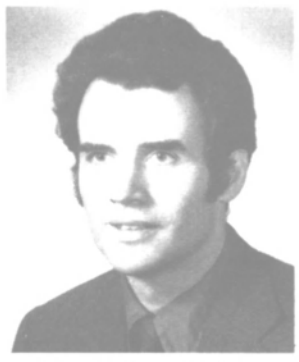
"In all probability," Mr. **Closs** added, "it could be a year-round service, since Lake Ontario rarely freezes over during the winter months."

The study considered three vessel variations for the trans-lake operation — conventional roll-on/roll-off craft capable of carrying up to 58 standard 40 or 45-foot trailers, a specially designed barge pushed by a tug (80 trailers), and a towed barge (140 trailers).

The lowest capital commitment corresponded to the ro/ro ship, which also had the lowest weekly capacity. Fixed costs on a per trailer slot basis favored the towed barge. But the integrated tug-barge, with twice daily sailings from each port, offered the best service and highest weekly cargo capacity (1,920 trailers).

Three Appointed To Key Positions At Morris Guralnick Associates

Henry Berk



Robert K. Richardson

Jal G. Patell

Three appointments to key staff positions were recently announced by Morris Guralnick Associates, Inc. (MGA), prominent San Francisco, Calif., firm of naval architects and marine engineers.

Henry Berk has been appointed chief electrical engineer. **Robert K. Richardson** has been appointed senior engineer in the MGA Structures and Arrangements Section. **Jal G. Patell** has been appointed chief, Hull Department.

In making the announcement, **Hugh F. Munroe**, president and chief executive officer of Morris Guralnick Associates, Inc., said: "These three men bring to our organization a wealth of training and experience, including a variety of theoretical and practical applications of naval architecture. This expertise is of great importance in this era of modern architectural and engineering methods, when so many projects call for the most highly sophisticated designs and systems possible today." MGA is presently providing design and engineering consulting services for many important commercial and government projects, including the U.S. Department of Energy's first Ocean Thermal Electric Conversion (OTEC) platform.

Before joining the Guralnick organization, Mr. **Berk** served for 15 years with NL Petroleum Services, where he attained the position of senior supervisor of the Electrical Design Section. Prior to that, he spent 24 years at Bethlehem Steel Corporation's San Francisco shipyard, where he served as senior project engineer. At NL Petroleum Services, Mr. **Berk** was closely involved in the electrical designs of offshore oil industry vessels. He also received special training at the Philadelphia Navy Yard and at Bethlehem's former shipyard at Quincy, Mass.

Mr. **Richardson** followed the completion of his studies at the University of California with three years' service in the U.S. Coast Guard, where his duties included extensive review of oil industry vessel and equipment designs with special emphasis on safety, stability, and seaworthiness. He attained the rank of lieutenant. Mr. **Richardson** also served with the architectural and engineering firms of J.J. McMullen, and Earl and Wright, the latter for 12 years, during which he served as naval architect on offshore oil industry designs, seakeeping studies, and hydrodynamics.

Mr. **Patell**, before his appointment to chief, Hull Department for MGA, served four years as a naval architect on the MGA staff. Following graduation from India's College of Engineering in 1941, he served with Garden Reach Workshops, Ltd., and Hindustan Shipyard of Calcutta, holding the position of chief naval architect at both facilities. His work included designs on tugboats, ferries, dredges, cargo and passenger ships, floating docks, and naval craft. Before joining MGA, Mr. **Patell** served six years with Global Marine, Inc., Los Angeles, as chief of the Naval Architecture Department, and was involved in the development of new designs of several offshore drilling rigs and a mining ship.

Morris Guralnick Associates, Inc. is now in its 33rd year of operation. The firm is presently engaged in several long-term projects for the maritime industry, the U.S. Navy and other commercial and government clients. In addition to its headquarters office in San Francisco, the organization operates branch offices in San Diego, Calif., and Baltimore, Md.

Chotin . . . one of the nation's largest and most prominent liquid carriers. Barging everything from benzene to vinyl chloride, Chotin offers you both inland and off-shore cargo handling capabilities. And, in addition to an established fleet of 13 towboats and 140 barges, Chotin can custom build liquid barges to fit your specific needs.

Chotin . . . for distinguished service in the reliable, safe, dependable delivery of chemical or petroleum cargoes — anywhere along the inland waterway system, coastwise or the Gulf of Mexico.

For distinguished service in chemical transportation

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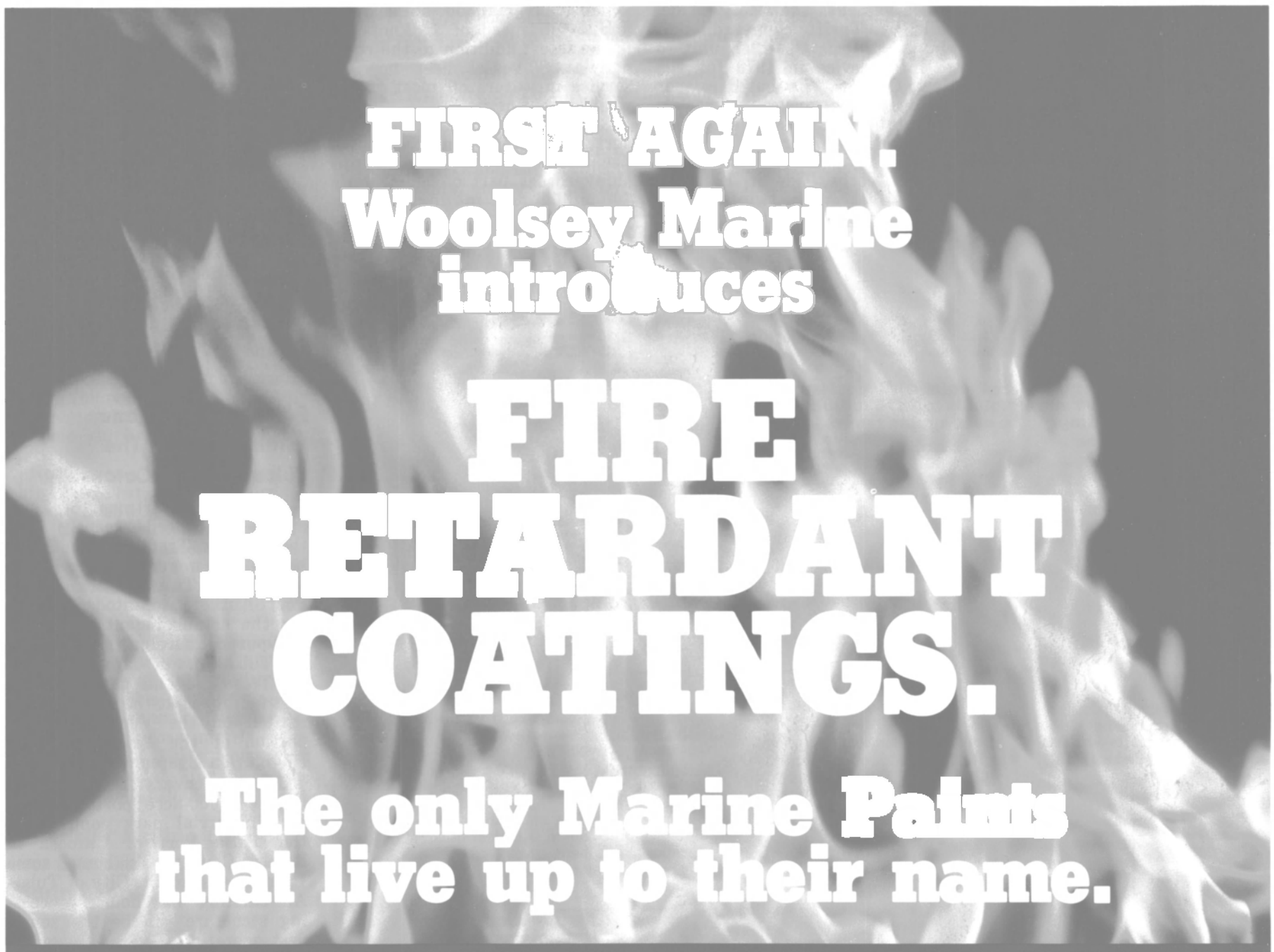


FIRST AGAIN.
Woolsey Marine introduces

FIRE RETARDANT COATINGS.

The only Marine Paints that live up to their name.

Built to take it.

With over 126 years of leadership in protective marine coatings technology, it should come as no surprise that Woolsey Marine introduce the "First" marine, intumescent fire-retardant coatings.

These unique, protective coatings can minimize risk onboard in areas where a potential fire hazard exists: galley, engine compartment, bilge, etc.

In case of fire, materials coated with Woolsey Fire-Retardant Coatings are less likely to ignite.

By reducing the spread of flames along a painted surface, these coatings can minimize property damage and provide that extra margin of safety for those onboard to affect an escape.

When properly applied, Woolsey Fire-Retardant Coatings can minimize fire loss and save lives.

A Unique Protective Foam Barrier.
With exposure to heat and open flames, a surface coated with a Woolsey Fire-Retardant Coating System will "intumesce"—swell into a layer of protective and insulative foam hundreds of times the thickness of the original paint film.

This protective foam shield expands rapidly to delay contact with the underlayment while impeding flamespread and smoke build-up.

If the fire hasn't been too extensive or burned too long, the substrate may still be serviceable. In many instances, the dry, charred foam can be scraped off and the surface repainted.

A Full Range of Colors and Finishes.
Like all Woolsey protective coating systems, these new, fire-retardant coatings come in a select range of colors and finishes to match your particular needs. Available in varnish and latex base.

Make Woolsey's new Fire-Retardant Coatings your first line of defense. The only marine paint that can handle a hot situation.

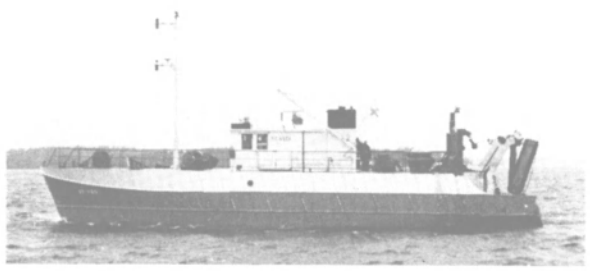
For further information, call or write us directly.

We've got the system.

WOOLSEY MARINE

Woolsey Marine Industries, Inc.
100 Saw Mill Road
Danbury, CT. 06810
Tel.: (203) 792-6300

Second Winter Trawler Delivered By Valmet



Valmet Shipbuilding of Finland recently delivered the second unit of its winter trawler series intended to improve the catches in the northern Baltic during the midwinter season. The M/S Julanta (shown above) built for **Henry, Ronald, Jorgen** and **Nils Holmstrom** of Lovisa, Finland, follows the M/S Jarvsaar delivered earlier to **Erik Liljeberg**.

These vessels have been especially designed to withstand the harsh winter fishing conditions in the Baltic. The M/S Julanta was built at Valmet's Kotka Shipyard which, in addition to fishing vessels, is also building naval supply boats.

The 138-grt, 26.90-meter (about 88-foot) trawler incorporates a number of new developments, including some patented by Valmet.

Among the more important features are a steel hull with scantlings corresponding to ice class I A, and a 735-kw (1,000-hp) engine; a totally covered 'tweendeck arrangement to protect the working crew during heavy weather or icing conditions; a trawl frame of a new type, which makes it possible to lead the trawl wires directly under the ice while maintaining full control of the trawl; remote control of the trawl gears, making it possible to operate the system from the bridge; and placement of the engine in the stern above the propeller shaft, provides 50 to 60% more usable cargo than is available in the same size hull with conventional machinery arrangement.

The main engine is a Wartsila 624 TS diesel coupled via a Valmet AUS-950 reduction gear to a c-p propeller. The auxiliary engine is a Valmet 411 DSGK with an output of 55 KVA. Fuel tanks have a volume of 21 cubic meters. Navigation equipment includes radar, VHF-radio, echosounders, autopilot, etc.

Am-Can To Start Tug-Barge Service On Great Lakes In '81

Am-Can Transportation, Inc. recently announced the introduction of a new tug-barge service to Great Lakes shippers. With the tug-barge, Am-Can will provide service to both line haul and to side port shippers, concentrating on fast, reliable service to small shippers presently operating from restricted waterways harbors.

Am-Can's first tug-barge unit will begin operation at the beginning of the Great Lakes shipping season in 1981. The barge is a 22,000-ton dry cargo barge at 27 feet FW. The dimensions are 575 feet long, 75-foot beam, and 45-foot depth. The construction is double skin. The total cargo area is 800,000 cubic feet. The cargo holds are divided into five compartments, allowing for the separation of cargoes and making split loadings possible. The cargo holds are fitted with MacGregor "Rolltite" hatch covers that roll back, leaving the full hatch opening.

The entire unloading system will be monitored and controlled by one man from the supervisory control room on the deck.

The barge is fitted with mooring winches and chocks that allow easy shifting of the vessel along the dock. This permits distribution of the cargo on the dock for more efficient handling.

The barges are being constructed to ABS, and USCG class and certificate.

The barge will be pushed by a brute, a 9,000-horsepower tugboat, twin-screw, sitting in a deep notch, 67 feet deep. The tugboat is twin screw with Kort nozzles. The tugboat, which is presently being retrofitted with an upper wheelhouse for this service, is on a long-term charter from Nolty J. Theriot, Inc. of Golden Meadow, La. The tugboat is 150 feet long by 40-foot beam by 19-foot draft. It is equipped with the latest communication and electronics equipment for worldwide operation. The tugboat is classed for ice service ABS, and Maltese Cross, worldwide towing service. The boats, built in 1975, were among the first big U.S. tugboats to enter service in the North Sea. Theriot operated these tugs in service to the oilfields in 50-foot seas and gale force winds, while handling anchors and moving tows.

The twin-screw tug will be aided by two 600-horsepower bowthrusters in the bow of the barge. The bowthrusters will operate at light draft on the barge, as well as loaded draft at slower running speeds, increasing safety and control of the unit.

The first tug-barge unit is scheduled to arrive in the Great Lakes at the opening of the Seaway 1981. The second unit will arrive in the Lakes approximately five months later. Negotiations are now underway with shipyards for the barge construction.

For further information, write **Neils Christensen**, MR-280, Am-Can Transportation, P.O. Box 412, Westmont, Ill. 60559.

TURBO GENERATOR SETS

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

1 

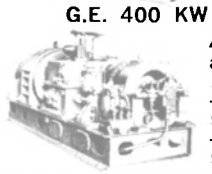
1500 KW — 450/3/1200 RPM —0.8 P.F.—2450 amps—525 PSI—850°TT—8145 RPM—11-stage geared 8145/1200—type FN4 — 3½" steam inlet. Unit will deliver full power at 440 lbs & 760°TT. OAL 16' 3-3/8"—OAW 6'6"—OAH 7'5¼"—wt. 36000 lbs. Almost equal to new. Very little use. With ABS or Lloyds.

G.E. 600 KW GEARED TURBO GENERATORS

2 

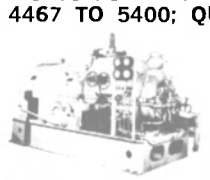
450/3/60/1200 RPM — 961 amps — type ATI — 0.8 PF. TURBINE: FSN-FN-20 6-stage—525 lbs/825°F — superheat 355°/371°F. GEAR: 10033/1200 — RPM 10033 — total — 6390 lbs. steam/hr. steam flow.

G.E. 400 KW TURBO GENERATORS

3 

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

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

4 

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

UNUSED WESTINGHOUSE 60 KW 120 VDC M-20-EH

5 

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

UNUSED 500 KW DELAVAL-WESTINGHOUSE GEARED TURBO GENERATOR

6 

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

TURBINES & ROTORS

BETH-SPARROWS POINT, QUINCY HULLS

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

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

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

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

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

8500 HP G.E. — C-3 OR VICTORY

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

VICTORY SHIP AUXILIARY TURBO GENERATOR SET ROTORS

11 300 KW 5965 RPM JOSHUA HENDY

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

ALSO WESTINGHOUSE 2A & 5A SERIES

– FOR T-2 VESSELS –

12 

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

538 KW WESTINGHOUSE T-2 AUXILIARY GENERATOR — COMPLETE

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

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

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

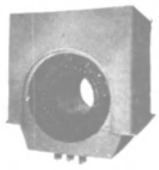
WESTINGHOUSE MAIN PROPULSION STEAM TURBINE WITH ROTOR
EX-CHEVRON VESSEL "MACGAREGILL"

15 Shrouded—like-new condition. Will sell rotor separately.

WESTINGHOUSE MAIN PROPULSION TURBINE

Ex"Pecos" — unshrouded — serial 2A-7733-2 type A

UNUSED G.E. MAIN PROPULSION STATOR

16 

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

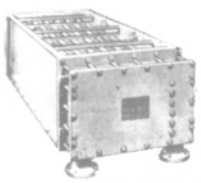
WESTINGHOUSE 538 KW AUX. GENERATOR EXCITER ARMATURE

17 

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

18 **538 KW WESTINGHOUSE AUXILIARY TURBINE ROTORS**

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

19 

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

G.E. 525 KW AUX. GENERATOR EXCITER ARMATURE

20 

75-55 KW

NEW STYLE AMPLIDYNE

21 

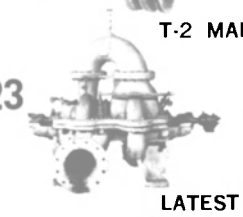
5LY148A2 — type A.M. — frame 605

AUXILIARY GENERATOR ROTORS

22 

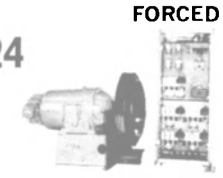
G.E. aux. generator rotors — DORV-325M — for 525 KW turbo generator sets

T-2 MAIN CARGO PUMPS

23 

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

LATEST DESIGN 5-SPEED FORCED DRAFT FAN MOTORS

24 

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

T-2 SHIPS SERVICE AIR COMPRESSORS

25 

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

WESTINGHOUSE DRY TYPE T-2 CARGO PUMP TRANSFORMERS

26 

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

G.E. PYRONOL OIL COOLED TRANSFORMERS

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

MISCELLANEOUS DRY-TYPE TRANSFORMERS

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

INGERSOLL-RAND 14,000 GPM MAIN CIRCULATOR

29 

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

PUMPS

BRONZE T-2 TANKER STRIPPING PUMPS

30 

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

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

TURBINE FIRE PUMPS — BRONZE

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

NEW BLACKMER FUEL OIL TRANSFER PUMP

36 

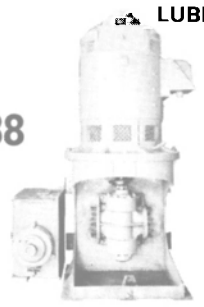
Rotary — 50 GPM — 50 lbs. — 2" — 5 HP — 440/3/60 — with starter & spares

UNUSED BRONZE FEED-WATER BOOSTER PUMPS

37

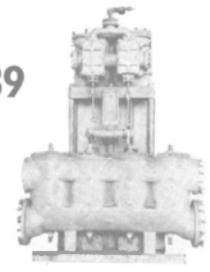
220/237 GPM @ 144' head — 2-stage — 1750 RPM with 30 HP 440/3/60 motor control & spares. Built for USN

LUBE OIL SERVICE PUMP

38 

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

WORTHINGTON 16"x14"x18" VERTICAL DUPLEX STRIPPING PUMP

39 

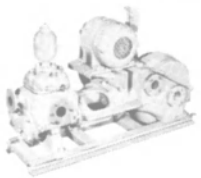
1400 GPM @ 110 PSI; suction lift 11.5 ft. Steam back pressure 15 lbs. Suction 14" — discharge 10" — steam 2½" — exhaust 4". Overall width 6' 8" — overall height 9' 1½" — depth 3' 9½" — approx. wt. 10,000 lbs.

NEW WORTHINGTON VERTICAL SUBMERSIBLE BILGE PUMP

40 

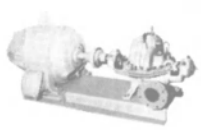
For emergency use on passenger ships, etc. PUMP: JAS — 264 GPM — 171' head — two 6" inlets — one 5" outlet. MOTOR: 40 HP — 230 VDC — 149 amps.

MOTOR-DRIVEN GARDNER-DENVER RECIPROCATING BILGE PUMP

41 

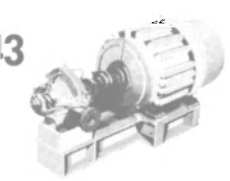
50 GPM — 150 PSI — Model ALAXE — serial #106335. 3¾" bore — 4" stroke — 2½" suction — 2" discharge. 51" long — 21" wide — 21" high — weight 750 lbs. MOTOR: Diehl — 2.5 HP — 440/3/60 — 1750 RPM — 3.53 amps.

GOULD FIRE AND BILGE PUMP

42 

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

AURORA HEAVY DUTY BRONZE FIRE SERVICE PUMP

43 

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

DIESEL GENERATOR SETS

410 KW ENTERPRISE DIESEL GENERATOR SET

44

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

MISCELLANEOUS

AUTOMATIC TENSIONING 12X14 STEAM WINCH

45 

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

16" BRASS PORTLIGHTS

46 

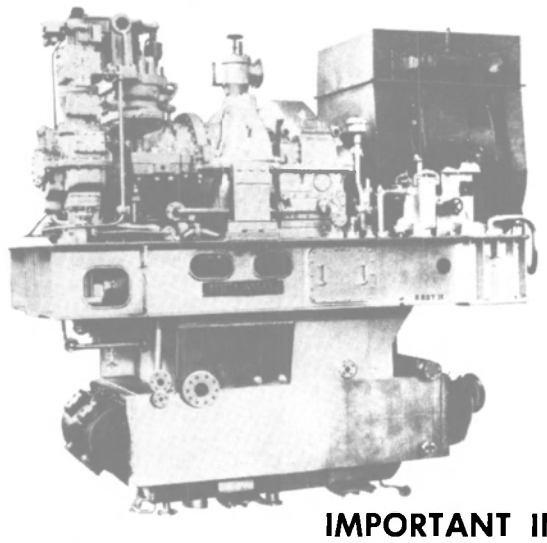
15" and 16" brass portlights. 16" portlights are 3-dog type.

47

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

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

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



YOU CAN SAVE THOUSANDS OF DOLLARS

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

IMPORTANT INFORMATION

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

PLEASE NOTE!

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Our Marine Department and Warehouse is now located at

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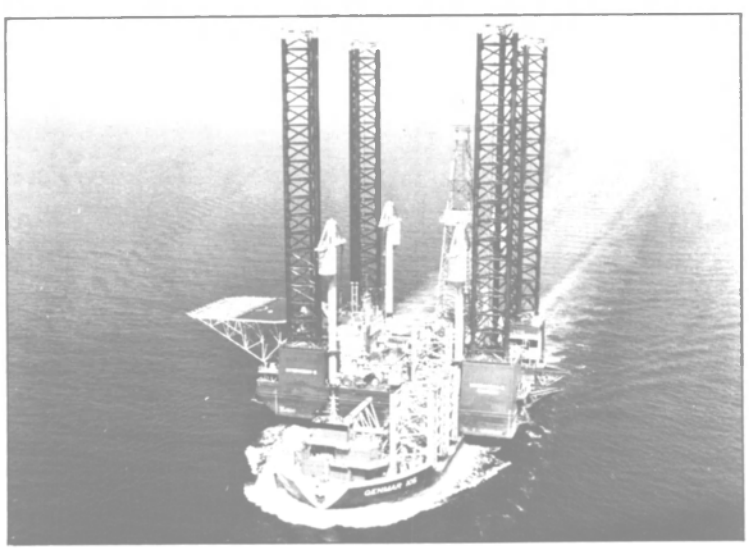

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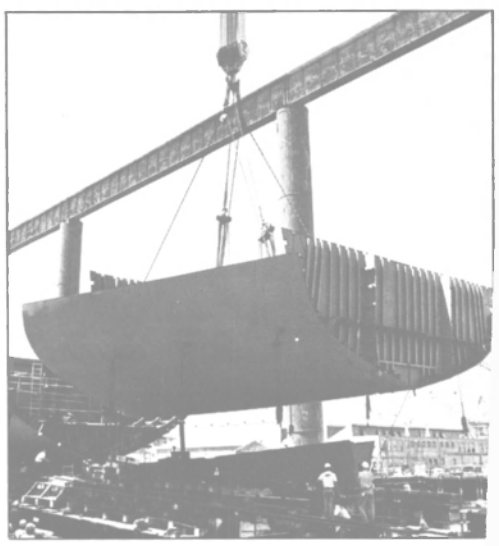

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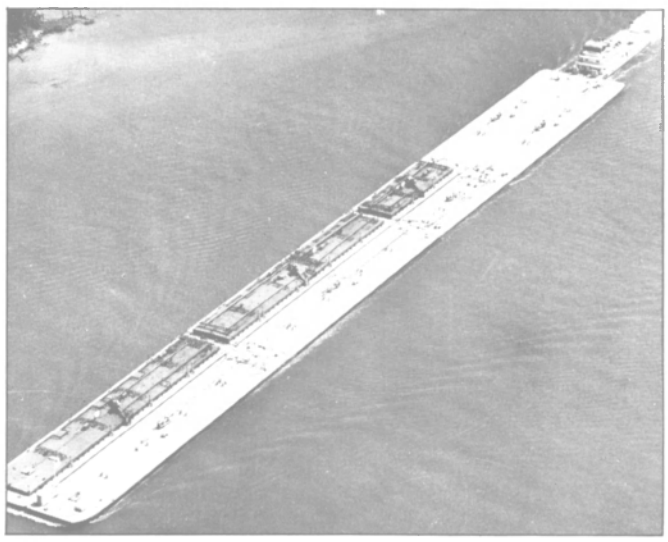

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MARITIME REPORTER AND ENGINEERING NEWS

Top Executives Promoted At Curtis Bay Towing

Curtis Bay Towing Company has announced two promotions to its executive staff. Effective January 1, 1980, **Malcolm W. MacLeod**, executive vice president, has been elected president and chief executive officer of the firm. He succeeds Capt. **Frank J. Hughes** who has served in that position since 1966, and has been elected chairman of the board.

Malcolm W. MacLeod

Frank J. Hughes

Both men have long been associated with the maritime industry, each having commenced his career as a cadet at the Massachusetts Maritime Academy.

Mr. **Hughes**, with 47 years in the maritime field, spent many years at sea during which he served as an officer on dry cargo ships and tankers, and master of salvage tugs and deepsea tugs before coming ashore in a management capacity.

Mr. **MacLeod**, with 29 years' experience, served for a number of years as an officer on fleet tugs of the U.S. Navy and on commercial tugs operating on and from the U.S. East Coast before assuming shoreside duties with Moran Towing & Transportation Co., Inc., New York, N.Y., with whom Curtis Bay is affiliated.

Curtis Bay Towing Company, founded 70 years ago, is headquartered in Baltimore, Md., and operates modern tug fleets based in the ports of Philadelphia, Pa., Baltimore, and Norfolk, Va., from which it provides harbor, inland, coastwise and ocean towing services.

Free Brochure Available On Saab Microwave Tank Level Gauging System

Saab Marine Electronics is offering a free technical brochure describing SUM-21, the first microwave operated level gauging system for tankers.

The brochure contains complete details on the Saab SUM-21 performance features, including: No moving parts—Only the rugged antenna is mounted inside the tank—Antenna is insensitive to sludge deposits and not affected by smoke, gases, etc.—Extremely high accuracy of ± 5 mm + 0.05% of measured ullage. For example, ± 15 mm in a tank 20 meters deep—High system flexibility providing measurements at sea, automatic trim compensation, and easy connection to load calculators, level alarms, etc.

Saab SUM-21 has no mechanical installation inside the tank atmosphere, consequently, it does not generate high costs for spare parts, service, gas-freeing, and resulting time delays.

The system, during the last six months, has been ordered for all cargo tanks in more than 20 tankers.

About 50 percent of the Saab SUM-21 systems supplied have been ordered for chemical tankers. Also, in crude carriers, installation of Saab SUM-21 is attractive as a consequence of the proposed new IMCO regulations requiring crude oil washing. When using a system based on the microwave principle, it is possible to have accurate ullage readings during the whole washing process.

For copies of the brochure and all information, write to **Jack B. Ellsworth**, Salwico, Inc., 77 River Street, Hoboken, N.J. 07030.

Hitachi Zosen To Build Three 60,000-DWT Bulk Carriers For 2 Owners

Hitachi Zosen recently received orders for a total of three 60,000-dwt bulk carriers—two from Aksjeselskapet Kosmos, a member of Norway's Anders Jahre Group, and one from Epos Marine Corporation of Liberia.

All three ships are Hitachi Zosen standard economical Panamax-type bulk carriers. With these latest orders included, Hitachi Zosen has received orders for a total of 44 Panamax-type bulk carriers — six in 1979. The new vessels will have a length of 215 meters (about 705 feet), a breadth of 32.2 meters (106 feet), and a depth of 17.8 meters (58 feet). Each will be powered by a Hitachi Sulzer 6RND76M-type diesel and will have a speed of 14.9 knots.

Wall Industries Announces Yale Cordage Acquisition

Yale Cordage, a braided rope manufacturer based in Yarmouth, Maine, will move into the heavy industrial rope market following its recent acquisition by Wall Industries of Beverly, N.J.

The news came in a joint announcement by **W.A. Dungan**, president of Wall Industries, and **P.A. LeMaistre**, president of Yale Cordage. Mr. **Dungan** said: "We are very pleased to team up with Yale. The cordage industry has become increasingly specialized to keep pace with the demands for more refined types of rope. . . ."

Mr. **LeMaistre** noted: "The number one reason we wanted to join with Wall was to gain greater exposure for Yale's products. Wall is a successful, 150-year-old manufacturer with a nationwide sales force. . . ."

Yale Cordage officers, personnel and manufacturing facilities will remain at the Yarmouth plant.

Santa Fe To Install 2 Production Platforms For Union Oil Company

Santa Fe International Corp., Orange, Calif., announced that its semisubmersible derrick barge Choctaw I is being transferred from the Gulf of Mexico to the West Coast to install two proposed oil production platforms off California for Union Oil Company of California.

Union is currently in the process of obtaining all Federal, state and local permits for the project.

Santa Fe Engineering Services Co., a subsidiary of Santa Fe International, will be responsible for the design, fabrication, transportation, and installation of a 12-pile, multi-well structure, known as Platform Gilda. This structure will be installed in 210 feet of water in the Santa Clara Field, approximately 10 miles west of Oxnard, Calif.

Under an extension of an existing contract, Santa Fe Engineering Services will be responsible for the fabrication, transportation and installation of a small structure, known as Platform Gina. Designed by Santa Fe under the earlier contract, this will be a six-pile, multi-well platform to be set in the Hueneme Field in 95 feet of water, about four miles west of Port Hueneme.

The larger platform will be launched from the SF-4000, Santa Fe's newest launch barge, which will also be moved from the Gulf Coast to assist on the project. The two platforms are scheduled to be installed late in 1980.

William Sparkman Named District Credit Manager At GE Credit Corp.

William B. Sparkman has been named district credit manager of General Electric Credit Corporation's (GECC) New Orleans (La.) Industrial Equipment Financing office.

As credit manager, Mr. **Sparkman** will be in control of the GECC loan portfolio, making credit decisions to provide two- and three-party financing for manufacturers, distributors, and users of workboats and commercial fishing vessels, as well as production machinery for other industries.

Mr. **Sparkman** will be serving Louisiana and southern Mississippi.

A native of Emhouse, Texas, Mr. **Sparkman** attended the University of Houston, earning a BS and an MBA degree. In 1969, he joined the GECC office in Houston, Texas, and eventually served as district credit manager of that office.

Texaco Names Quegan Ass't General Manager Fleet Operations

Richard J. Quegan has been appointed assistant general manager, fleet operations, in the Marine Department of Texaco Inc., it was announced recently by **James A. Cole Jr.**, vice president in charge of the Marine Department. In his new assignment, Mr. **Quegan** will continue to be located in the company's Harrison, N.Y., offices.

Mr. **Quegan** graduated from the U.S. Merchant Marine Academy at Kings Point, N.Y., in 1959, with a Bachelor of Science degree, and joined Texaco the following year as a third mate aboard the S.S. Texaco Montana. He subsequently served aboard other Texaco U.S. fleet vessels as first mate and captain until 1964, when he was transferred to shore as assistant fleet superintendent. Following assignment with Texaco marine companies in Europe, commencing in 1969, he was named assistant manager, traffic, in Texaco Inc.'s Marine Department in New York in 1974, and was appointed manager, operations there in 1975.

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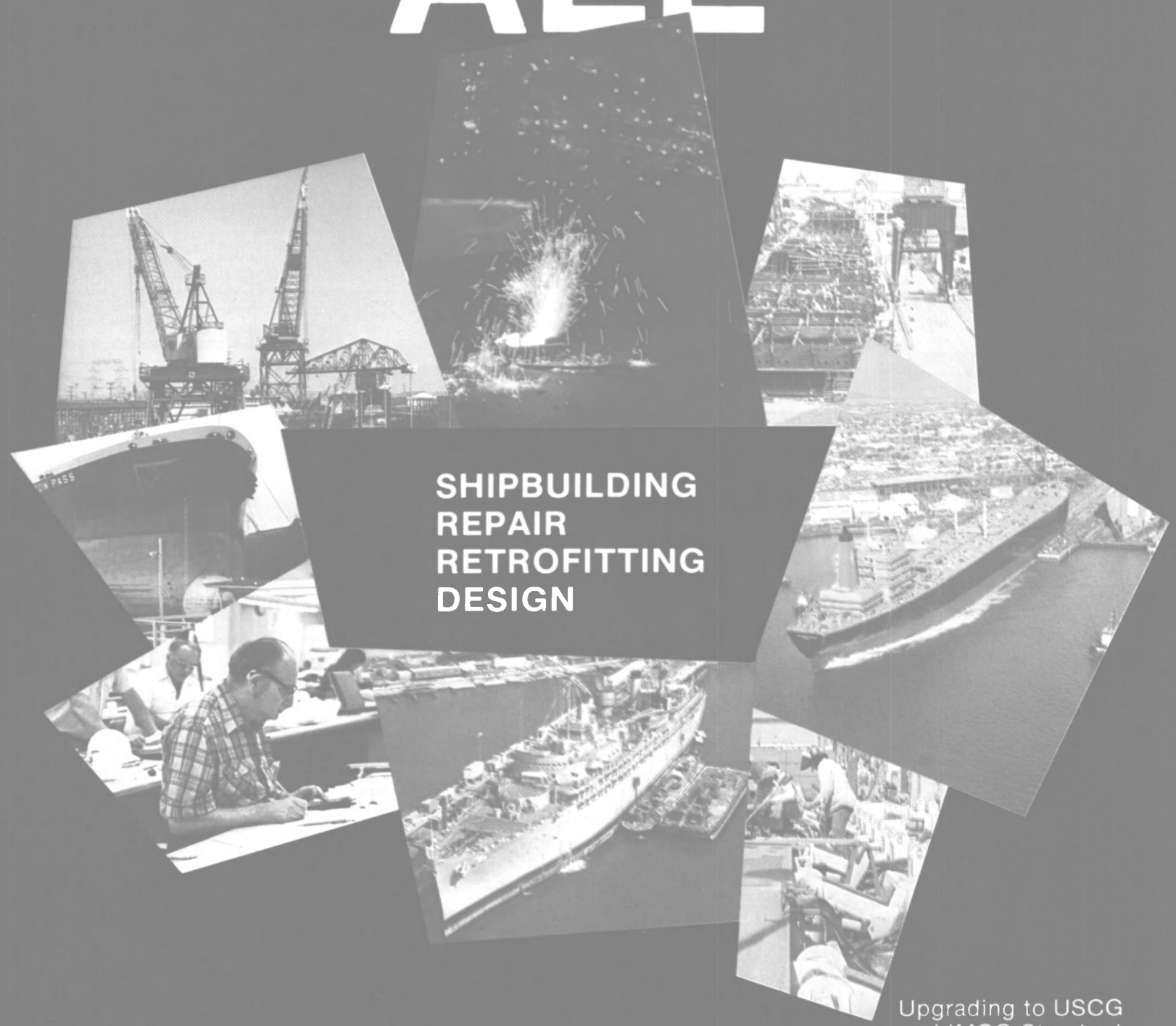

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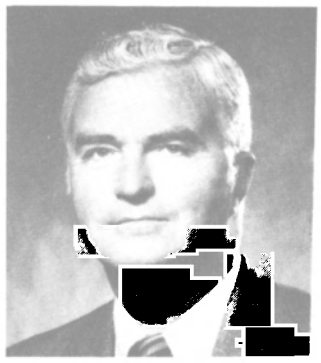
McGraw-Edison Names R.V. Jeck President Of Worthington Pump Unit

Robert V. Jeck has been named president and chief executive of Worthington Pump, Inc., a McGraw-Edison Company, it was announced recently.



Robert V. Jeck

A graduate of Iowa State University, Mr. **Jeck** received his MBA degree from the Wharton Graduate School, and has participated in advanced management programs at the London School of Economics and the Harvard Graduate Business School. A former lieutenant in the U.S. Navy, admiral's aide, and Naval Intelligence School instructor, Mr. **Jeck** began his career with E.I. Du Pont, where he assumed various responsibilities in product development, marketing, and manufacturing.

Mr. **Jeck** later joined Amerace Corp., where he served as president of the Stimsonite and EMC Divisions. He was Group vice president of Amerace and president of Amerace Brands Division, as well as a member of the board of directors of Anchor Coupling before joining Worthington.

Mr. **Jeck** is chairman of the board of the Motor Equipment Manufacturers Association and president of the board of directors of the Truck Safety Institute.

Worthington Pump, based in Mountainside, N.J., manufactures pumps at 23 facilities in 13 countries for the electric utility and public works, petroleum, chemical and petrochemical, marine, agricultural, and general industries.

Booklet Available From Kaiser Chemicals On Corrosion Protection

The use of aluminum alloy anodes to provide improved cathodic protection for offshore oil structures and vessels is the subject of a booklet available from Kaiser Chemicals. It offers corrosion engineers guidance on anode selection and essential factors in the design of a more efficient cathodic protection system, and includes a detailed anode selection nomograph and drawings of typical anode cross sections and cores. Other photos and drawings illustrate aluminum anodes in flush-mounted hull, ballast tank, heater treater, and multipurpose applications. The company, which has a marine anode production capacity of 10 million pounds annually, also uses the booklet to discuss the importance of continuing research and quality control in the production of efficient corrosion control products. Copies of the brochure may be obtained by writing **James J. Driscoll**, Kaiser Chemicals, Kaiser Center, Room 1139, 300 Lakeside Drive, Oakland, Calif. 94643.

Bridgestone Receives $5-Million Order For Hose For LOOP Terminal

Bridgestone Tire Co., Ltd., Tokyo, Japan, recently received a sizable order for large-bore marine hose for unloading crude oil, from Fluor Ocean Services, Inc., Houston, Texas, who is the contractor for the project of the Louisiana Offshore Oil Port (LOOP).

The contract will amount to approximately $5-million on CIF basis.

The LOOP Marine Terminal will be the first deepwater port in the United States capable of unloading crude oil from supertankers up to 700,000 deadweight tons, and will be located approximately 19 miles offshore the state of Louisiana, where three single-point mooring buoys will start operating in July 1980.

In the first phase of the operations, it is expected that 1.4 million barrels will pass through per day, with the terminal accommodating 330 tankers annually.

The marine hose, to be used in the LOOP Marine Terminal for transporting crude oil from the tanker to the single-point mooring buoy, has an inside diameter of 24 inches, the largest bore of marine hose in the world, and had to meet the highest industry standards.

MarAd Offers Important New Handbook On Firefighting At Sea

The Maritime Administration has released a marine fire prevention handbook developed under a jointly sponsored MarAd/U.S. Coast Guard contract. It contains almost 400 pages of invaluable information.

The handbook, "Marine Fire Prevention—Firefighting and Fire Safety," will be used in the training of merchant mariners in fire prevention and control.

The original concept for the handbook was developed by the Maritime Training Advisory Board, a group of maritime labor and management executives interested in improving and enhancing the skills of seafarers.

The manual has been distributed to the U.S. Merchant Marine Academy, Kings Point, N.Y., the six state maritime academies, and maritime labor schools. Copies of the manual are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock Number 003-007-00099-5; price $8).

The new MTU of North America facility located in Corporate Park off Highway 59 in Sugar Land, Texas, near Houston. The building cost is in excess of $1 million and is constructed of concrete, limestone, and tilt-wall panels. The building houses a special testing station for MTU engines up to 2,500 hp, and its foundation is capable of supporting a 10-ton crane.

MTU/North America Opens U.S. Corporate Headquarters In Houston

MTU of North America, Inc., a subsidiary of MTU Friedrichshafen West Germany, and distributor of high-performance diesel engines, officially opened its corporate headquarters in Houston, Texas, recently with a second facility in Morgan City, La. MTU of North America is an extension of MTU's worldwide marketing and product support system, designed to provide immediate service to MTU customers of the Gulf Coast.

The facility is located in a new large industrial park, Corporate Park, off Highway 59 in Sugar Land, just southwest of Houston, with ready access to Freeport, Galveston and other coastal areas.

The new building alone cost over $1 million to construct. The structure occupies 10,000 square feet, with 3,000 square feet of offices and 7,000 square feet for warehouse and workshop areas.

It features a special testing station for new and rebuilt MTU diesel engines. Valued at over $100,000, the test stand, equipped with a cooling tower and dynamometer, exactly simulates actual running conditions for engines up to 2,500 bhp so that they can be thoroughly tested before installation. There is also a special air-conditioned room for the testing of injection pumps and nozzles.

Peter Moeller, executive vice president and general manager of MTU of North America, was responsible for overseeing the construction of the new facility near Houston. He is in charge of staffing the new company, as well as heading its daily operations.

The specially trained personnel at Houston and Morgan City are on call 24 hours a day, every day of the year, to assist customers in selecting appropriate power systems, and to provide complete follow-up service. MTU of North America maintains a fleet of mobile units (including a $90,000 service and spare parts inventory vehicle).

MTU of North America maintains a one-million-dollar inventory of spare parts. The inventory is computer-controlled, and low stocks are automatically replaced via a direct computer link-up to the main plant in Friedrichshafen, Germany. There are over three million dollars in complete engine assemblies stocked in Houston and Morgan City. Ninety percent of these engines are sold and soon to be delivered to clients.

MTU of North America expects to expand its operations along the Gulf Coast beyond the existing facilities at Houston and Morgan City.

Omnithruster Adds New Maneuvering Systems —Literature Available

Serving the marine industry for a number of years in solving maneuvering problems, Omnithruster Inc. is now offering literature describing five new low-cost PV Systems. The PV Systems have been created for vessel owners who want the strength and features of the Omnithruster but do not require all the features of the Omnithruster JT System.

The PV Systems range from 50 to 350 horsepower and from 1,000 to 6,000 pounds of nozzle thrust. Like all Omnithruster systems, the PV Systems meet the basic requirements of maneuvering underway and in strong currents.

For full details and literature on the low-cost PV Systems, write **Violet J. Winslow**, Omnithruster Inc., Dept. 7A, 16837 South Normandie Avenue, Gardena, Calif. 90247.

Sleek lines of New Shoreham II reflect the vessel's many innovative and modern features.

Blount Marine Delivers Innovative Cruise Ship New Shoreham II

Luther Blount, president of Blount Marine Corporation, has announced the delivery of the New Shoreham II, a new innovative, fuel-efficient cruise ship designed to carry 100 passengers. The vessel was constructed in six months, under U.S. Coast Guard specifications, for the American Canadian Line. It left Warren, R.I., with 72 passengers bound via the Inland Waterway for West Palm Beach, Fla., commencing service last December on 12-day Bahama "Out" Island cruises from Nassau.

Mrs. Jane Blount christened the New Shoreham II. **Leon Flowers**, port director of the Bahama Islands, along with state and local officials of both the Bahamas and the state of Rhode Island, attended the launching ceremonies.

The M/V New Shoreham II is 150 feet long, 28 feet wide, with 36 deluxe cabins on three decks, and carries a working crew of 14. The new vessel replaces the original M V New Shoreham, sold to West Coast interests in April 1979. From 1971 through April 1979, the original New Shoreham carried over 12,000 passengers on cruises through New England, Canada, Florida, and Bahama "Out" Islands. The New Shoreham II has enlarged facilities and expanded cabin area, increasing passenger capacity by 20 percent.

Like its smaller predecessor, this ship will be the only U.S.-flag cruise ship in the Caribbean. Its fuel economy, bow landing facility, and new aquatic fantail concept offer new dimensions to the cruise industry.

Relying on a principle first used by the Herreshoffs of Bristol, the ship uses about the same amount of fuel for propulsion as a large cabin cruiser. Its twin GM 12V71 engines with a total of 700 hp are duplicates of those used in most 65-foot fast cabin cruisers. Speed loaded has been checked at 11 knots.

It uses less than a fifth as much fuel as most larger cruise ships when considered on a basis of fuel used per passenger per mile.

Other new concepts include a bow ramp leading from the lower deck on which a design patent has been applied for by **Luther Blount**. The triangular stem section hinges out to allow passengers off two abreast onto a beach or appropriate shore. The fantail offers a full-width aquatic promenade featuring recessed stairs leading to a retractable swimming boat ramp. The area also serves as an observation deck and carries a glass-bottomed auxiliary boat. Tuna outriggers and fishing equipment mounted in this area are intended to provide guests with Caribbean troll fishing while underway.

The arrangement of the new ship follows that of its predecessor but features larger and more deluxe staterooms with a larger clear sundeck aft. The ship is air-conditioned and heated. Underwater exhausts, soft-mounted machinery placed away from living spaces, and generous use of sound insulation insure a quiet atmosphere. For tight maneuvering in small harbors, the ship is equipped with Blount-built 60-hp hydraulic bow and stern thrusters.

While the New Shoreham II is designed primarily for semi-protected waters, it will provide many capabilities beyond the scope of larger ships. The new ship can navigate limited waterways like the Erie Canal because the pilothouse lowers and other superstructure retracts to clear 23 feet vertical. A limited draft of 6 feet can clear the bar into practically every yacht harbor in the Bahamas.

Unique Bow Ramp (patent pending) designed by **Luther Blount** allows visits to many unspoiled and previously inaccessible areas.

NEW SHOREHAM II

Length Overall:	142'-6"
Beam (Molded):	28'-0"
Depth (Molded):	9'-8"
Design Draft (Approx.):	5'-3"
Capacity - Passengers:	100 Excursion Service Overnight Max.
Fresh Water Capacity:	4,693 Gallons
Fuel Capacity:	4,925 Gallons
Crew:	14
Propulsion Engines:	(2) General Motors 12V-71 Diesel Engines
Controls:	Morse
Propellers:	Columbian Bronze
Generators:	(3) Lima - GM 6-71 Diesel Power (1) Onan
VHF Radiotelephones:	(2) Apelco Mod. AF55
Depth Sounders:	(2) Data-Marine Sandpiper III Mod. 2450
Radar:	(2) Furuno Mod. FR-240
SSB:	(1) Hull Mod. 922
Loran C:	(1) Mieco Mod. 6805
Heating and Air-Conditioning:	Carrier

Literature Describes New Harris RF Communications Channelized ARQ System

Literature is now available describing the new RF-2330 Channelized ARQ System, an advanced synthesized (transmitter/receiver) automatic error correcting radio teletypewriter system. A unique high-speed switch allows operation from a single antenna. The RF-2330 can be operated in either simplex or split channel (half-duplex) modes. The RF-2330 ARQ Terminal is a complete system that features 1-kw PEP or average, microprocessor control, switched simplex operation, high-frequency stability and channelized full-frequency coverage. As a complete system, the RF-2330 ARQ Terminal includes all elements necessary for operation, including the basic transmitter (RF-233), receiver (RF-530), HAARQ Modem (RF-3500), and antenna coupler (RF-1205). The teletypewriter is available as an option.

For literature and complete details, write **J.D. Vatcher**, Harris Corporation, RF Communications Division, 1680 University Avenue, Rochester, N.Y. 14610.

Three Promoted At J.J. Henry Moorestown Office

Robert B. McFadden

Peter Karanzalis

Henry C. Emmerling Jr.

A.C. Brown, senior vice president of J.J. Henry Co., Inc., naval architects and marine engineers, recently announced the following promotions in the J.J. Henry Company's Moorestown, N.J., office.

Robert B. McFadden has been appointed chief engineer and director of the Mechanical Design Division, reporting directly to Mr. **Brown**. Mr. **McFadden** graduated from Penn State University with a BS degree in chemical engineering. He also pursued additional college studies at Bucknell University and Drexel University. Prior to his new appointment, Mr. **McFadden** served as project manager for design of the U.S. Navy Landing Ship Dock, LSD-36, in 1965, and then became chief of the Machinery Engineering/Design Department in 1967 to the present.

Peter Karanzalis has been appointed chief of Production Engineering in the Mechanical Design Division, reporting to Mr. **McFadden**. Mr. **Karanzalis** graduated "cum laude" from Temple University with an AS degree in mechanical engineering, majoring in HVAC. Mr. **Karanzalis** also pursued additional college studies at North Carolina State College and Drexel University. Prior to this new appointment, he served as chief of the HVAC & Hull Piping Engineering/Design Department from 1964 to the present.

Henry C. Emmerling Jr. has been appointed to chief of the Machinery Engineering/Design Department, reporting to Mr. **McFadden**. Mr. **Emmerling** graduated from the United States Naval Academy with a BS degree in engineering. He also completed additional courses at the following U.S. Navy Technical Schools: USN Metalsmith School, USN CIC School, Damage and ABC Warfare School. Prior to his new appointment, Mr. **Emmerling** served as assistant chief of the Machinery Engineering/Design Department from 1968 to the present.

James E. Palmer Elected President Of Baldt Inc.

The board of directors of Baldt Incorporated recently announced the election of **James E. Palmer** as president and director of the company.

Mr. **Palmer** brings 25 years of diversified business and industrial experience to Baldt, most recently with The Walworth Company as vice president/general manager. Prior to joining Walworth, Mr. **Palmer** was with American Standard, Inc.

Baldt Incorporated is a leader in the design and manufacture of anchoring and mooring systems, with manufacturing facilities in Chester, Pa., Toccoa, Ga., and Corpus Christi, Texas, and distribution locations in Houston, Texas, New Orleans, La., Seattle, Wash., San Francisco, Calif., Chester, Pa., and Aberdeen, Scotland.

Key Changes Announced At Michigan Wheel

Several key changes were recently announced by Michigan Wheel Division, Dana Corporation. **H.L. VanderMey,** president of the division, announced that the appointments were for the division's three facilities located in Grand Rapids, Mich., Seattle, Wash., and Pascagoula, Miss.

Robert Kress, former chief engineer of the division, has been appointed vice president of engineering. **Tony Buczek** succeeds Mr. **Kress** as chief engineer. **Charles Dykstra** has been named to the new position of director of marketing.

DeJong & Assocs Offers Services Brochure

The naval architectural and marine engineering firm Norman N. DeJong & Associates, Inc. recently published a catalog of services offered by the firm.

The brochure describes the firm's capabilities and facilities, as well as general specifications for vessels designed by Norman N. DeJong & Associates, Inc. A full service naval architectural firm, Norman N. DeJong & Associates is known for tug and towboat designs, pilot boats, passenger vessels, and fishing boats.

For a free copy of the services catalog, write **Roy A. Anderson,** Norman N. DeJong & Associates, Inc., 1734 Emerson Street, Jacksonville, Fla. 32207.

Wichmann Receives An Order For 20 Diesels For Halter-Built Vessels

Wichmann Diesel, Inc. of Kenner, La., has secured an order from Command Marine, Inc. of Lafayette, La., through its affiliates, for 20 of their 1,350-hp Model 4AXA marine propulsion systems, including controllable-pitch propeller and all ancillary equipment. This engine series offers very low specific fuel consumption due to low engine operating speeds, and reduced maintenance as a result of modular construction and elimination of problem-causing cylinder valving and valve operating components.

These propulsion packages will be installed in 10 vessels: four 180-foot tug supply vessels, two stern trawlers, and four special purpose vessels, all of which will be built by Halter Marine, Inc. at their New Orleans, La., facilities. Delivery is scheduled for 1980-81.

1979 MarAd Survey On Shipbuilding And Repair Facilities Available

The Maritime Administration recently published its 1979 Report on Survey of U.S. Shipbuilding and Repair Facilities. The 123-page report notes that "Despite the continuing worldwide shipping depression, the climate of uncertainty, and the global overcapacity in shipbuilding, the U.S. shipbuilding and ship repair industry in FY 1979 invested some $208 million in facilities modernization and expansion, and as of July 1, 1979, planned to spend an additional $221 million to improve facilities during the year ending June 30, 1980."

Since enactment of the Merchant Marine Act of 1970, approximately $1.7 billion has been spent on facilities modernization and improvements, the report states.

A limited number of copies of the publication are available and may be obtained by writing the Office of Public Affairs, Room 3895, Maritime Administration, Washington, D.C. 20230.

Parker Towing Barge And Towboat Project To Cost $14 Million

Parker Towing Co., Inc., P.O. Box 72, 1001 24th Avenue, Tuscaloosa, Ala. 35402, has applied for a Title XI guarantee to aid in financing 35 barges and four towboats. The vessels will be used on the inland and coastal waterways of the United States.

The project includes 33 hopper barges, each with a capacity of 273 short tons. Jeffboat, Inc. of Jeffersonville, Ind., will build 10 of the hopper barges for delivery March 31, 1980. A shipbuilder has not been designated for the other 23 hopper barges.

Jeffboat, Inc. will also construct two 26,000-barrel tank barges for the applicant.

The project also involves the construction of two new towboats and the reconditioning of two others. One of the new vessels is being built at Mainstream Shipyards & Supply, Inc., Greenville, Miss., and is scheduled for delivery on June 30, 1980. Another towboat is to be built at an undesignated shipyard.

Mainstream Shipyards & Supply will also recondition a towboat for Parker Towing. The work was expected to be completed last month. In addition, Harrison Bros. Drydock & Repair Yard, Inc., Mobile, Ala., reconditioned a towboat for the applicant. It was redelivered October 12, 1979.

The estimated actual cost of the entire project is $14,178,000. If approved, the Title XI guarantee would cover $11,934,000 of that amount.

Tampa Tug Corporation Formed By T.J. Stahl

The Tampa Tug Corporation's "Challenger."

Thomas J. Stahl has announced the formation of the Tampa Tug Corporation. The new company has established offices at 102 North 13th Street, Tampa, Fla., with a mailing address of P.O. Box 5405, Tampa, Fla. 33675. Tampa Tug intends to provide barge towing on a contract basis throughout the Gulf, Caribbean, Central and South America, or wherever towing services are required. Mr. **Stahl** announced that the tug Challenger has been placed in service and has made several trips to Central America. The Challenger is a twin screw, 4,200-hp, 125-foot tugboat with worldwide ocean towing capability.

Before starting the Tampa Tug Corporation, Mr. **Stahl** was employed as the operations manager of the St. Phillip Towing & Transport Company in Tampa for five years. From 1958 through 1974, Mr. **Stahl** served as the Southern operations manager in New Orleans, La., of the A.L. Mechling Barge Line, Inc., and the Union Mechling Corporation. Mr. **Stahl** is on the board of directors of the American Waterways Operators. The company phone number in Tampa is (813) 223-9751.

Brown & Root Promotes Knight And Nelson To VP Posts In Marine Group

Brown & Root, Inc., Houston, Texas, has announced a series of executive changes, including the promotion of two officers in the company's Marine Group.

Promoted to Group vice presidents were **T.E. Knight**, Engineering & Project General Management, Marine Group, and **H.A. Nelson**, Construction, Western Hemisphere, Marine Group.

Mr. **Knight's** 16-year background includes design, engineering, and engineering management, planning, design, and construction of petroleum production facilities; design and construction of offshore drilling and production platforms, marine terminals and submarine pipelines.

Mr. **Nelson** has nearly 40 years of experience in engineering and construction from laborer to supervision and management, and for the past several years has been in charge of management of Brown & Root's West Coast-Alaska, Oilfield, and Latin America Division of the Marine Services Group.

Halter Marine Offers Free 54-Page Full-Color Capabilities Brochure

Halter Marine, Inc. is offering, at no cost, a 54-page brochure, every page profusely illustrated with dramatic full-color photographs, describing the total inside and outside shipbuilding capabilities offered by this leading shipbuilding organization.

Halter builds more than 30 types of vessels at the company's 10 shipyard locations in the states of Louisiana, Mississippi, Alabama, and Florida. In less than 25 years of operation, the company has constructed more than 1,000 vessels. Examples of all types currently produced by Halter are pictured in the brochure, including supply boats, tug/supply boats, crewboats, tugs, surface effect ships, research vessels, small tankers, patrol boats, fishing vessels, CATUGS, utility boats, and sports fishermen. The book also details the full range of services offered by Halter from vessel design, engineering, and construction, to service, repairs, and training.

For a copy, write to **A.J. Rizzo**, Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189.

$42-Million Contract For 3 Oil Barges To General Dynamics

General Dynamics' Quincy (Mass.) Shipbuilding Division has received a $42-million contract for the construction of three oil-carrying barges from Coastwise Trading Company, Inc. of Delaware.

Two of the barges will have a capacity of 175,000 barrels of oil. They will be 471 feet long and have an 84-foot beam and a depth of 42 feet. The third barge, which will have a capacity of 132,000 barrels, will be 415 feet long and have the same beam and depth.

The barges, which will be used in intercoastal service, are scheduled for delivery at two-month intervals starting in December 1980.

Pfeiffer To CEO Of Alexander & Baldwin

R.J. Pfeiffer, previously president and chief operating officer of Alexander & Baldwin, Inc., has been appointed president and chief executive officer of the Honolulu, Hawaii company.

This followed the resignation of **Gilbert E. Cox** as chairman of the board of directors and chief executive officer and as a director. Mr. **Cox** said he was returning to law practice after 10 years as a corporate executive in Honolulu. No successor as A&B board chairman was named.

Mr. **Pfeiffer** became president and chief operating officer of A&B last October after six years as president of Matson Navigation Company, an A&B subsidiary.

A&B's principal operations, besides Matson, are in sugar production and property development and management.

TTT Promotes Kelly To Vice President

The board of directors of TTT Ship Agencies, Inc., New York, N.Y., has announced the promotion of **Edward J. Kelly** from assistant vice president, Far East, to vice president. He will continue to be responsible for the agency's Y.S. Line operations, a post to which he was assigned a year ago. Mr. **Kelly** graduated from the Merchant Marine Academy, Kings Point, N.Y., in the class of 1973.

NOAA Survey Of Remotely Operated Vehicles Available

The number of so-called remotely operated vehicles (ROVs) in use today has increased 1,000 percent in the past five years, according to a report by the National Oceanic and Atmospheric Administration (NOAA).

Today about 180 ROVs are in use or being built around the world, mainly for the oil and gas industry. An additional 120, not covered in the NOAA survey, are being used by various navies to neutralize explosive mines. Other main users of the small underwater units include the military and the scientific research community.

The vehicles are used industrially for inspection of underwater structures, monitoring of beneath-the-surface activities, assisting divers, bulldozing and trenching the ocean floor, and a variety of other purposes. Some research ROVs are capable of fine-grained mapping, water sampling, and radiation measurements; while others have been used for under-ice profiling, wake turbulence measurements, and profiling of conductivity, temperature, and pressure. The governments of several nations, as well as private industry, are sponsoring research and development into additional uses of ROVs.

NOAA's survey, entitled "Remotely Operated Vehicles," was conducted by R. Frank Busby Associates, Inc., an Arlington, Va., consulting firm. The report describes in detail the construction characteristics, and uses of ROVs throughout the world, as well as problems encountered by the various types, and recommended areas of research and development. Specifications and photographs of nearly 100 ROVs are included.

Copies of the report may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for $7.50 each.

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GEC Diesels To Supply Propulsion Package For C.N. Marine Straightway Vessel

GEC Diesels Inc. of Etobicoke, Canada, have been awarded a multimillion-dollar contract by St. John Shipbuilding & Dry Dock Ltd. of New Brunswick for the supply of the diesel propulsion and auxiliary package for the new C.N. Marine Twin Screw Ferry known as the Straitway Vessel.

The contract involves supply of six Ruston RK 3,000-hp 720-rpm medium-speed propulsion diesel engines for a total of 18,000-hp, together with associated couplings, coolers, Lohman & Stolterfort gearboxes, KaMeWa controllable-pitch propellers, shaft line equipment, Megasystems control, and condition monitoring system.

It also involves Ships Service Generating Sets comprising two Ruston 12 RK 2,000 kw and two Ruston 8 RK 1,330-kw 720-rpm units, and one Emergency Set Dorman Model 6QTCAZ 270 kw.

GEC Diesels Inc. (formerly Ruston Diesels Ltd.) is a subsidiary of the General Electric Company Limited of Great Britain.

Inter Island Conference Set For March 11-14 In Manila, Philippines

The second "Inter Island Shipping" conference and exhibition will be held in Manila, Philippines, March 11-14, 1980, following its successful launch in Singapore as part of "Marintec Asia 79" in June 1979. The "Inter Island Shipping" series is a planned five-year United Nations ESCAP program to assist in the maritime development of the Asia Pacific region. The event is cosponsored by the Maritime Industries Authority (Marina) of the host country.

The subject has special significance to ASEAN nations, in particular the Philippines and Indonesia, which have over 4,000 and 3,000 inhabited islands, respectively. Reliance on seaborne transportation in the region is almost total. The need to develop all sectors of the maritime industries is urgent as estimated cargo movements in the next five years call for hundreds of thousands of additional ship tonnage.

Subjects scheduled for discussion during the conference include, operational problems today, shipbroking, secondhand tonnage limitations, feeder services, and ship financing. Papers will be presented by speakers on regional cooperation in shipping which will include the interface of interisland with intra-regional and ocean shipping and shipbuilding and repairing within the context of ASEAN cooperation. The "Development of efficient ports for interisland shipping" sessions will deal with design and operational problems, cargo handling, containerization, the ro/ro concept, and discuss whether ports can meet users' needs.

At the last event, delegates attended from 21 countries, the majority (71 percent) being from the ASEAN region.

The exhibition held during the conference will feature a broad spectrum of exhibitors in the areas of ships/marine, cargo handling/port, navigation/communication equipment, shipbuilding/repair, diesel engines/propulsion, paint and coatings manufacturers.

"Inter Island Shipping" is organized by Intec Press Ltd., U.K., and its sister company MarIntec S.E.A. (Pte.) Ltd.

For further information on the Inter Island Shipping Conference and Exhibit, write **M. Randolph Long,** Intec Press Ltd., 310 East 46th Street, New York, N.Y. 10017.

Crescent Towing And Salvage Establishes An Alabama Division

The 1,800-hp harbor tug Elizabeth Smith is one of two Crescent Towing & Salvage Company tugs newly assigned to work in the Port of Mobile. The other is the 2,400-hp Marion Smith. The two tugs have previously been part of the 20-boat Crescent Fleet based in New Orleans, La.

Crescent Towing & Salvage Co., Inc., recently announced establishment of an Alabama Division to provide complete harbor towing services for the Port of Mobile.

James E. Smith, president of the New Orleans, La.-based firm, said two of his company's newest tugs, the 2,400-hp Marion Smith and the 1,800-hp Elizabeth Smith, began tugboat operations in Mobile in November.

Mr. **Smith** also announced the appointment of **Prentiss D. (Tad) Willcutt** as manager of Crescent's new Mobile fleet, which is being manned by all Mobile-area experienced crews. Mr. **Willcutt,** a native Mobilian, has been associated with Mobile Bay maritime operations since 1970.

"The two Crescent tugs assigned to Mobile are only the first of an expanding fleet operation planned for the Alabama Division," Mr. **Smith** stated. "We are confident that the Port of Mobile will continue to grow and that more of our Crescent Fleet tugs will be needed in the future to accommodate the port's growth," he said.

Crescent presently operates New Orleans's largest tugboat fleet — 20 tugs ranging in power and size from 1,500 to 4,000 hp and from 300 to 450 tons displacement. The two tugs in Mobile are of Crescent's Marion Smith Class, measuring 106 feet in length and displacing 350 tons. Both tugs have been fully modernized and repowered within the last year, Mr. **Smith** noted.

Crescent's Mobile tugs are berthed at the Alabama State Docks. The company's administrative offices are located in the First National Bank Building.

Bulletin Describes New Abrasion Resistant Compound To Extend Equipment Life

Application information, typical physical properties and general information about Wearex®, a new trowelable epoxy resin paste, appear in a new product-introductory bulletin available from Philadelphia Resins Corporation, Montgomeryville, Pa. Wearex conforms to any shape and cures quickly to form an extremely durable, abrasion and corrosion resistant coating which extends the life of new or severely worn equipment. Typical applications include slurry pumps, cyclones, valves, pipe elbows, impellers, feed chutes and chute linings, cooling towers, condensers, conveyor skirts and other equipment subjected to severe sliding abrasion in the marine and other industries.

For a free copy of Wearex 910, write to **Nancy Heck,** Philadelphia Resins Corp., 20 Commerce Drive, Montgomeryville, Pa. 18936.

Galleon Shipping Expands— Adding 9 Multipurpose Ships

Galleon Shipping Corporation has announced a major expansion of its liner service with the recent sailing from the Philippines to Los Angeles, Calif., of the M/S Galleon Topaz, the first of nine multipurpose ships newly acquired by the Philippine-flag carrier. Three ships following the Topaz sailing from Manila are the M/S Galleon Amethyst, M/S Galleon Sapphire, and M/S Galleon Onyx. Five new vessels are scheduled for delivery beginning August 1980. Presently, the Galleon fleet consists of five conventional ships.

The acquisition of these vessels represents a major capital investment for Galleon Shipping of over $150 million. This expansion is designed to provide a more efficient monthly service which will be increased in the fall of 1980. The major focus of this expansion is the introduction of a container service. In addition, the new Galleon vessels will provide space for breakbulk, unitize cargo, rolling stocks, and heavy lifts.

Galleon Shipping Corporation, a Philippine-flag carrier, provides a regular service between the Philippines and major Atlantic, U.S. Gulf and California ports. It is a subsidiary of Construction Development Corporation of the Philippines (CDCP).

Transpacific Transportation Co. represents Galleon Shipping in the U.S. West Coast, with offices in San Francisco and Los Angeles, Calif. Trans Asia Marine Corporation is the general agent for the Eastern United States and Eastern Canada.

Stackhouse Promoted By Petro-Marine Engineering

E.E. (Gene) Stackhouse has been promoted to manager-engineering in the Houston office of Petro-Marine Engineering, Inc., consulting engineering firm. He formerly served as supervisor-project control.

Mr. **Stackhouse** received his Bachelor of Science degree in mechanical engineering at Louisiana Tech University. His previous experience includes engineering and sales at chemical plants, and service at the NASA Manned Space Flight Center.

Petro-Marine is one of the nation's largest independent consulting engineering firms serving the oil and other energy industries. The company specializes in feasibility studies, planning, design, and construction management of offshore and onshore structural, process, pipeline and marine projects.

Petro-Marine has offices in Houston, Texas, New Orleans and Lafayette, La., as well as London, England.

Bulkfleet Marine To Build 2 Barges Costing $43.3 Million At GD

Two affiliated companies, Bulkfleet Marine Ltd., No. 1 and No. 2, have each applied for a Title XI guarantee to aid in financing the construction of an integrated tug-barge product carrier. The 25,000-deadweight-ton vessels will be used in the U.S. coastwise trade.

The tug portions of the two vessels will be built by J. Ray McDermott & Co., Inc., Morgan City, La. Each tug will be powered by two 4,000-horsepower diesels.

The barge portions will be constructed by General Dynamics Corp., Quincy, Mass. Delivery of both tug-barge vessels is scheduled for December 1980.

The combined actual cost of the two vessels is approximately $43.3 million. If approved, the Title XI guarantee would cover 87½ percent of that amount.

Outlook For Crude Oil Third Annual Conference Set For Houston, April 21-22

The Energy Bureau announced its third national two-day conference on The Outlook For Crude Oil. The conference will be held at the Houston (Texas) Oaks Hotel, April 21-22, 1980. The program analyzes and probes the components of the outlook for crude oil as well as the forecasts themselves. Subjects include OPEC policies and U.S. Government oil and land policies, OPEC pricing, sources, as well as forecasts of production, prices, consumption and drilling activity, including deepwater drilling. The panel includes experts from the U.S. oil industry, the Departments of State, Energy, and Interior, and consulting, and finance firms.

For further information, write **Robert W. Nash**, Executive Director, The Energy Bureau Inc., 41 East 42nd Street, New York, N.Y. 10017.

Hitachi Delivers Pertamina 1021 To Scorpa Pranedya Navigation

The 17,706-dwt product carrier Pertamina 1021 was recently delivered to her owner, Scorpa Pranedya Navigation, Inc. of Liberia. The ship was constructed at the Hiroshima Works (Innoshima) of Hitachi Zosen.

Powered by a Hitachi B&W 7L45GFC-type diesel engine, the Pertamina 1021 attained trial speed of 14.08 knots.

The Pertamina 1021 is the second of two product carriers of the same type to be constructed at the Hiroshima Works (Innoshima) for use in the transportation of refined petroleum products between Indonesian ports and harbors.

The ship features tank arrangement conforming to conventional requirements applicable to separate ballast oil tankers for the prevention of ocean pollution; and the interior walls of the cargo oil tanks and all the fittings inside the tanks are coated with epoxy resin paint, a paint of the highest quality, to prevent the inclusion of interior rust and paint in the product during transportation.

The vessel's specifications are as follows: length overall, 158 meters (about 518 feet); breadth, 25.80 meters (85 feet); depth, 10.80 meters (35 feet); designed full load draft, 7 meters (23 feet); gross tonnage, 10,882 tons (30,827 cubic meters); trial speed (maximum), 14.08 knots; classification, Lloyd's Register.

Halter Awards Contract For $3.5 Million To Gulf Coast Refrigeration

Gulf Coast Refrigeration and Motor Service, Inc. of Houma, La., recently signed the largest contract in its history to install heating and air-conditioning systems in the seven catamaran-style tugs (CATUGS) under construction by Halter Marine, Inc.

George Arceneaux (left), vice president of Gulf Coast Refrigeration, signs a contract in excess of $3.5 million with Halter Marine president Floyd J. Naquin (right) for the installation of heating and air-conditioning systems in the seven CATUGS under construction by Halter.

George Arceneaux, vice president of Gulf Coast Refrigeration, said the contract, in excess of $3.5 million, would extend over a two-year period as the giant tugs are built.

Mr. **Arceneaux** said Carrier chill-water systems would be installed in the CATUGS. Each vessel will have 47.5 tons of primary air-conditioning and another 47.5 tons of reserve air-conditioning.

The circulating hot-water heating system in each tug is rated at 1.2 million BTU.

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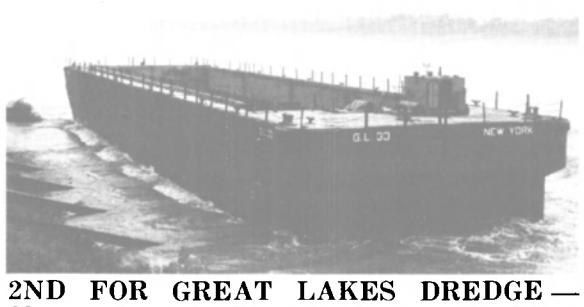
Gulf Coast Refrigeration installs heating and air-conditioning systems in supply boats and tugs built by Halter Marine and other Southern shipyards. The 14-year-old refrigeration company also maintains offices in Pascagoula, Miss., and its main location in Houma, La.



2ND FOR GREAT LAKES DREDGE — Shown above is G.L. 33, the second of two hulls, minutes after free-launching at the Tell City, Ind., plant, Mile 726 on the Ohio River. The two 4,000-cubic-yard Manitowoc hydro-dump barges were built for Great Lakes Dredge & Dock Co., home offices located at Chicago, Ill., by Maxon Marine Industries, Inc. The hydro-dump scow is 234 feet by 53 feet by 23 feet and is uniquely constructed with a longitudinal divided hull, hinged at each end above the deck. Hydraulic cylinders enable the hull to open and dump materials from the large open hopper. Buoyancy force of the water, together with hydraulic cylinder control, close the hull after the load has been dumped. The vessels is welded steel construction and adequate for open sea operations. Great Lakes Dredge and Dock recently took delivery of the completed barges.

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Experienced shipbuilding resident manager needed for Ro-Ro, diesel construction in northern Germany. Must have good steel and diesel background. Project until September 1980 with possible follow on ships. Potential for future shore employment with company.

Write or call Frank Herrmann, Director of Marine Operations, CCT, P.O. Box 010631, Miami, Florida, (305) 358-0505.

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Basic requirements are Chief Engineers Diesel License Unlimited, experience with slow speed diesels in addition to some small tugboat experience, if possible. A Second's or First's license might be acceptable depending on experience level. Salary negotiable and commensurate with experience.

Responsibilities include repair and maintenance of Harbor, Inland and Ocean Tug and Barge fleet, budget and cost control, preventive maintenance, supervision of seagoing engineering personnel, etc. Reports directly to V.P. Marine and V.P. Inland and Harbor fleets. Port Engineers will report directly to Manager of Marine Engineering.

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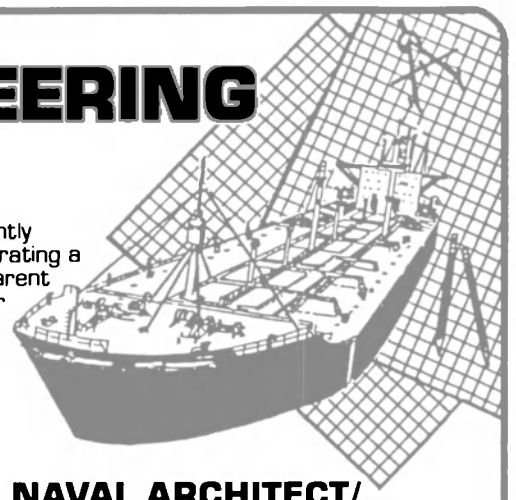

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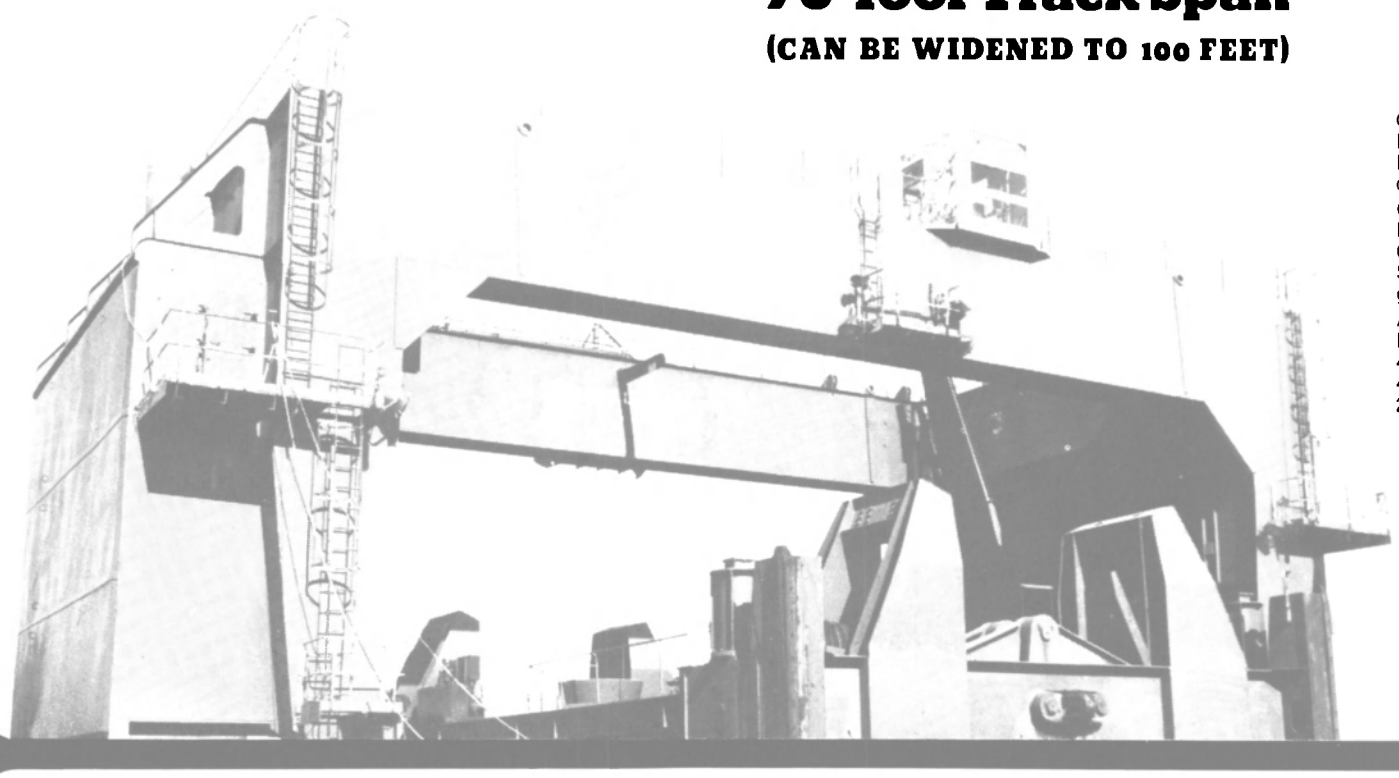


Originally Barge Handling. As used on LASH Ships. Manufactured by Alliance. Late Model built to ABS and MARAD requirements.

Good Condition. Immediately Available. Priced at a fraction of New Replacement Cost. Complete with Lifting Beams and Spreader Beams (not shown in photograph)

AC Power Input Through Cable Reel
DC Hoist & Gantry Motors & Controls
4–150 HP–240 Volt DC Hoist Motors
4–150 HP–240 Volt DC Gantry Motors
2–265 KW–500 Volt DC M-G Sets

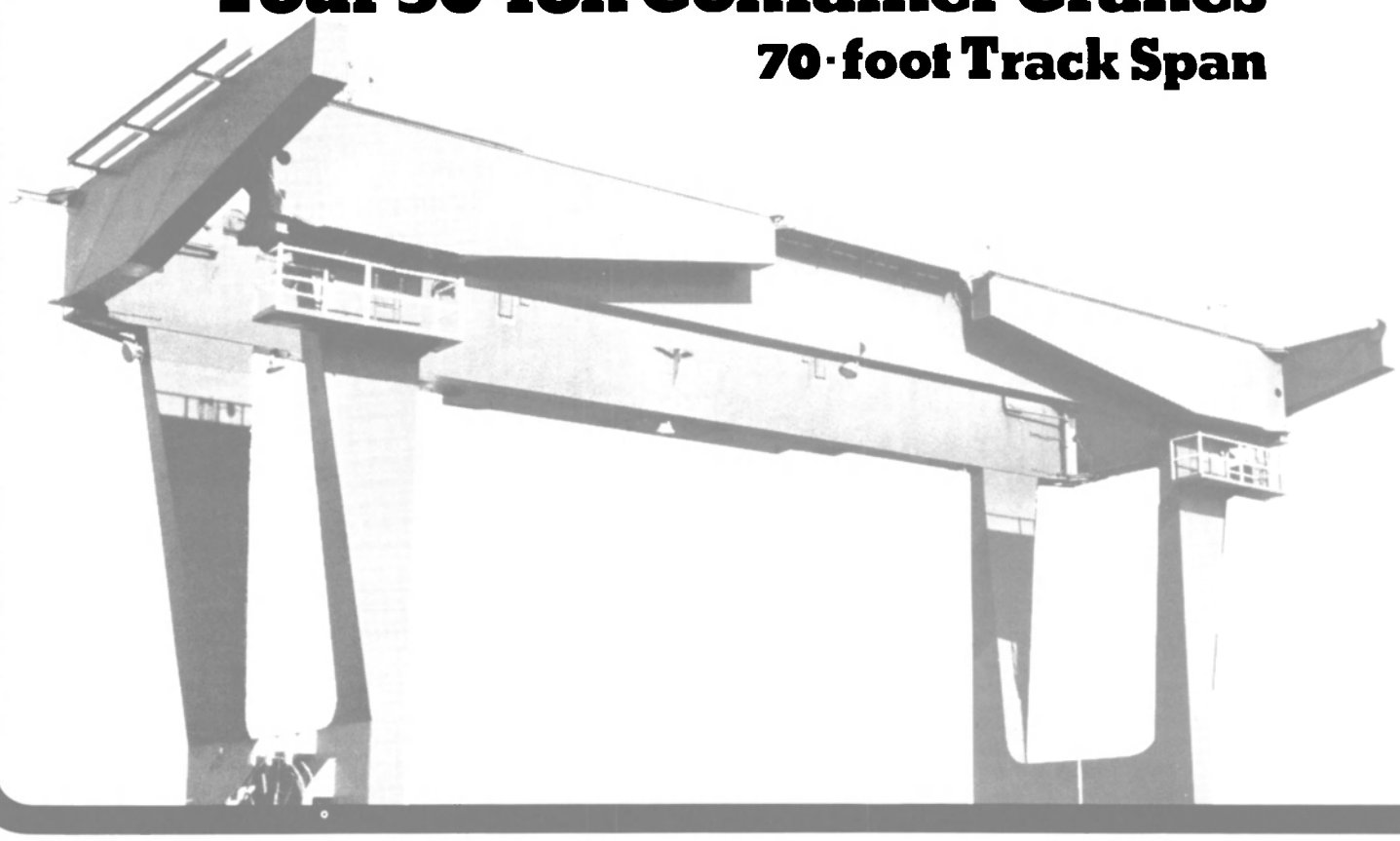
Units Can Be Modified

Possible other uses:
1) Moving heavy equipment
2) Dam Sites
3) Concrete Prefab plants
4) Railroad yards
5) Steel plants

Geared Track is also available at extra cost

Four 30-ton Container Cranes

70-foot Track Span



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AC Power Input with Cable Reel and 350 feet of 500 MCM Cable.

MG set: 250 HP-AC-170 KW 230 DC.

200 HP DC Hoist Motor
100 HP DC Trolley Motor
2-40 HP DC Gantry Travel Motors

Trolley Travel 275 F.P.M.
Gantry Travel 100 F.P.M.
Hoist Speed:
30 LT @85 F.P.M.
20 LT @100 F.P.M.
Empty Spreader 200 F.P.M.

32'0" Maximum Outstretch

Hoist, Trolley Travel and Gantry Motors are DC and have VSR and VSX regulation.

Hoist and Trolley not shown but are included.

Other areas of possible use:
1) Pipe and steel yards
2) Barge building
3) Concrete pre fab plants

For additional information, brochures or inspection, contact: Hugh Sturdivant, Sales Manager.

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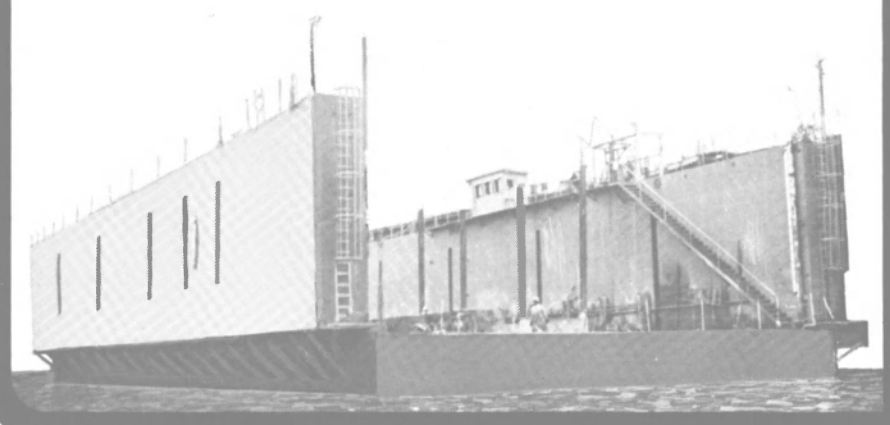
Breadth between wing walls — 56′
Capacity — 1,000 tons

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



200 TON / DIESEL ELECTRIC

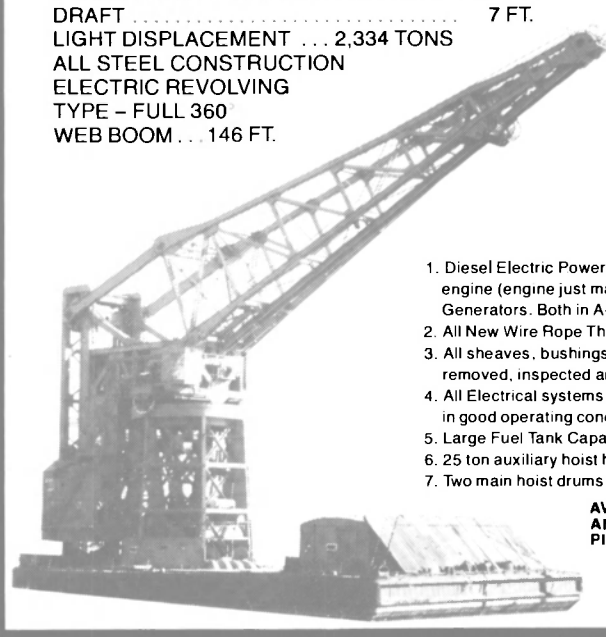
Floating Crane

FOR SALE - RENT - CHARTER

LENGTH OVERALL ..... 140 FT.
BEAM ..... 84 FT.
DRAFT ..... 7 FT.
LIGHT DISPLACEMENT ... 2,334 TONS
ALL STEEL CONSTRUCTION
ELECTRIC REVOLVING
TYPE – FULL 360
WEB BOOM . . . 146 FT.

MAIN HOIST:
200-Ton – By 2 only, 8 part blocks. Each block carries 2,050 ft. of 1½ . 6 x 37 I.P.S. wire rope (New).

AUX. HOIST:
25-Ton – By 1 only 4 part block. Block carries 1,110 ft. of 1⅜″, 6 x 37 I.P.S. wire rope (New).



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2. All New Wire Rope Throughout.
3. All sheaves, bushings and sheave pins have been removed, inspected and replaced in Good Condition.
4. All Electrical systems and controls have been placed in good operating condition.
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6. 25 ton auxiliary hoist has full 140 ft. of boom travel.
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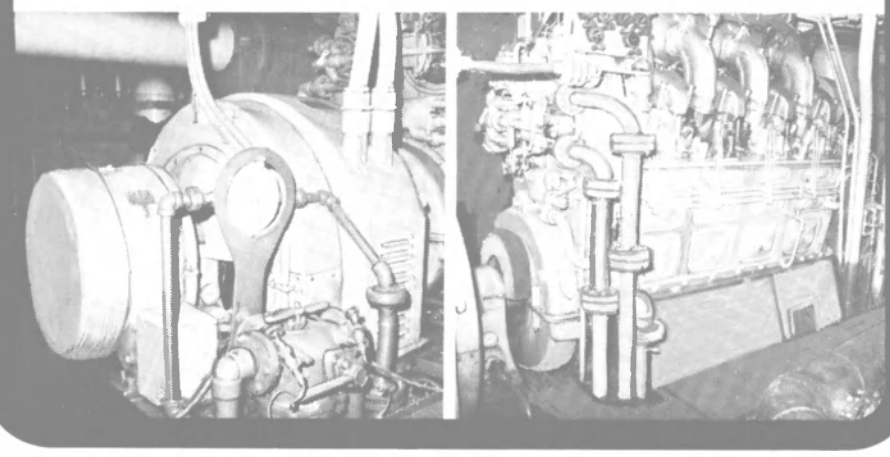


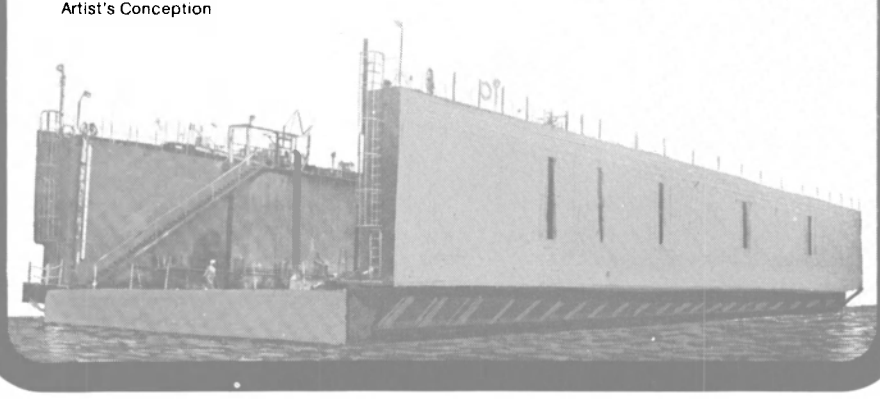
Floating Drydock

Under Construction

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

Three longitudinal bulkheads; four transverse bulkheads; fifteen watertight ballast tanks. Six 8″ centrifugal pumps (40 HP motors). Fifteen air operated flood valves. Total weight — 900 tons. Two ventilation blowers — one for starboard pump room and one for port pump room. 4′ keel blocks full length included.

Artist's Conception



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

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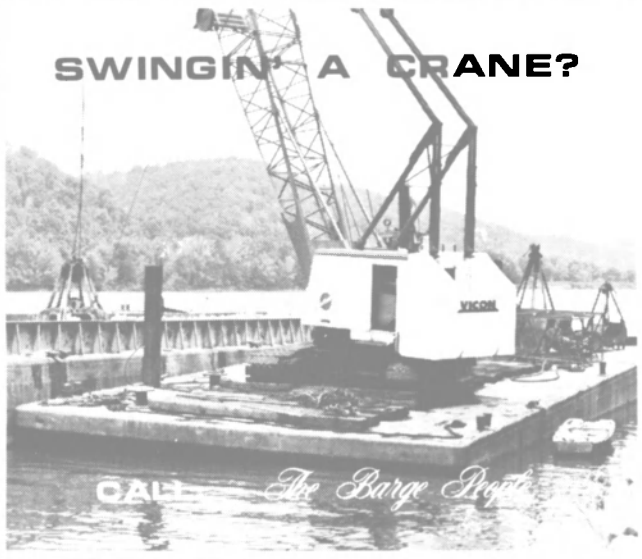

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Three longitudinal bulkheads. Three transverse bulkheads. Sixteen water tight ballast tanks. Four 24″ centrifugal pumps with 50 H.P. vertical shaft motors (20,000 GPM). Thirty electric flood valves. Two manual cross-over valves. Hydraulic stern gate and fly bridges. Manual bilge blocks. 4′ keel blocks, full length included. Two 12 ton diesel traveling gantry cranes on tracks on port and starboard weather decks. Dravo built, formerly Navy ARD.

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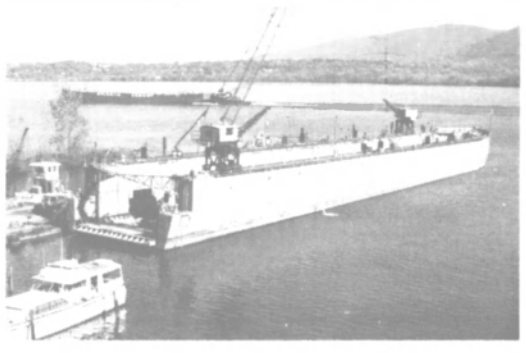

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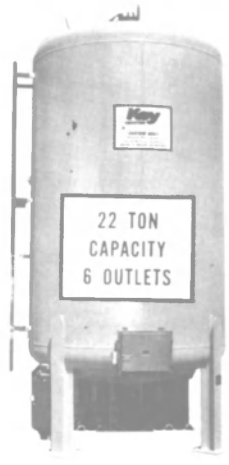

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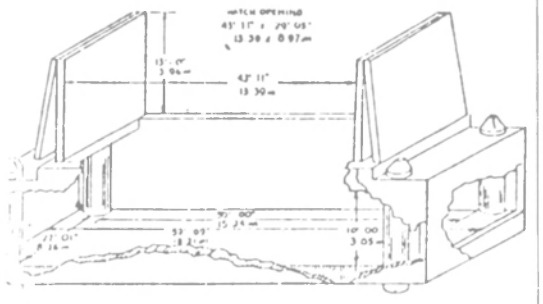

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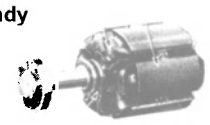

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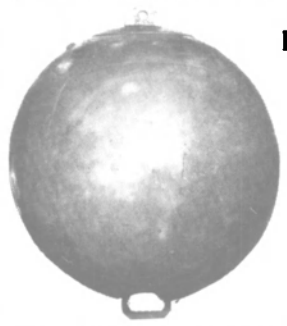

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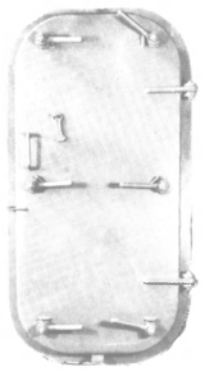

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26″x48″ 26″x66″
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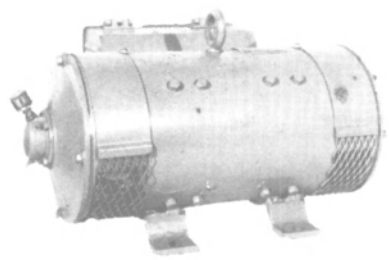

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Vita Motivator Co., 200 West 20th Street, New York, N.Y. 10011

ELECTRICAL EQUIPMENT
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

EMULSIFICATION SYSTEMS
American United Marine Corp., 575 Madison Ave., New York, NY 10022
Hoffert Marine, Inc., 265 Franklin Ave., Nutley, N.J. 07110

EQUIPMENT—Marine
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Baldt, Inc., P.O. Box 350, Chester, PA 19016
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080
Sudoimport, 5 Kalyaevskaya, Moscow K-6, USSR
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

EVAPORATORS
Riley-Beaird, Inc., P.O. Box 1115, Shreveport, La. 71130

EXPANDED METALS
Washington Iron Works, 1500 Sixth Avenue South, Seattle, WA 98134

EXPANSION JOINTS
H.S. White Co., 2056 Dixie Highway, Ft. Lauderdale, Fla. 33305

FANS—VENTILATORS—BLOWERS
Hartzell Propeller Fan Company, 901 S. Downing Street, Piqua, OH 45356
Joy Manufacturing Co., 338 So. Broadway, New Philadelphia, Ohio 44663
Zidell Explorations, 3121 S.W. Moody St., Portland, Ore. 97201

FENDERING SYSTEMS—Dock & Vessel
Hughes Bros., Inc., 17 Battery Place, New York, N.Y. 10004
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850
Seaward International, Inc., 6269 Leesburg Ave., Falls Church, Va. 22044

FINANCING—Leasing
Continental Illinois National Bank, 231 S. LaSalle, Chicago, IL 60693
General Electric Credit Corp., P.O. Box 8300, Stamford, Conn. 06904
Greyhound Leasing & Financial Co., Greyhound Tower, Phoenix, AZ 85077
Kidder, Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005
Salomon Brothers, One New York Plaza, New York, N.Y. 10004
Warburg Paribas Becker, Inc., 2 First National Plaza, Chicago, Ill. 60670

FITTINGS & HARDWARE
Custom Alloy, 2040 N. Loop W., Houston, TX 77018
Robvon Backing Ring Co., 675 Garden St., Elizabeth, N.J. 07207

FURNITURE
Bailey Joiner Co., Inc., 74 Sullivan Street, Brooklyn, N.Y. 11231
IDT Corp. (Intersystems Design & Technology Corp.), P.O. Box 1590, Summerville, S.C. 29483

GANGWAYS
Rampmaster Inc., 1226 N.W. 23rd Ave., Fort Lauderdale, Fla. 33311

GEARS
Motive Power Corp., P.O. Box 365, Mineola, NY 11501

HATCH & DECK COVERS—Chain Pipe
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
Mechanical Marine Co., 900 Fairmount Ave., Elizabeth, N.J. 07027

HULL CLEANING
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932
Phosmarin Equipment (Phoceenne Sous-Marine S.A.), 21 Boulevard de Paris, 13002 Marseille, France
Sub Enterprises, Inc., P.O. Box 16531, Irvine, CA 92713

HYDRAULICS
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229

INERT GAS—Generators—Systems
Camar Corporation, P.O. Box 460, Worcester, MA 01613
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039
Fredriksstad mek. Verksted, N. American Agents, American United Marine Corp., 575 Madison Ave., New York, N.Y. 10022

INFORMATION—Marine
Maritime Data Network, 300 Broad Street, Stamford, CT 06901

INSULATION—Cloth, Fiberglas
Bailey Carpenter & Insulation Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
Dupont Company, Nemours Bldg.-RM C31H6, Centre Rd. Bldg., Wilmington, DE 19898
IDT Corp. (Intersystems Design & Technology Corp.), P.O. Box 1590, Summerville, S.C. 29483

INSURANCE
Adams & Porter, 1819 St. James Place, Houston, Texas 77027
Adams & Porter, 5 World Trade Center, Suite 6433, New York, N.Y. 10048
Alexander & Alexander, Inc., 1185 Ave. of the Americas, New York, N.Y. 10036
Midland Insurance Co., 160 Water St., New York, N.Y. 10038

KEEL COOLERS
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062

LADDERS
Duo-Safety Ladder Co., 513 West 9th Ave., P.O. Box 497, Oshkosh, Wisc. 54901

LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights
Automatic Power Inc., 213 Hutchinson Street, Houston, Texas 77003
Oceanic Electrical Mfg. Co., 157 Perry Street, New York, N.Y. 10014
Perko Inc., P.O. Box 6400D, Miami, Florida 33164
Phoenix Products Company, 4785 North 27th Street, Milwaukee, WI 53209
Port Electric Supply Corp., 157 Perry Street, New York, N.Y. 10014

LNG CONTAINMENT
McDonnell Douglas Astronautics Co., 5301 Bolsa Ave., Huntington Beach, CA 92647

LUMBER
R.N. Templeman, Inc., 3000 Perdido St., New Orleans, LA 70119

MACHINE TOOLS
Master Machine Tools, Inc., 1300 East Avenue A, Hutchinson, Kansas 67501

MACHINERY MAINTENANCE, REPAIR, AND OVERHAUL
General Electric Company — Bldg. 2, Rm 216, Schenectady, N.Y. 12345

MOORING SYSTEMS
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS
Advanced Marine Enterprises, Inc., Suite 500, 2341 Jefferson Davis Highway, Arlington, Va. 22202
Agemar, Avenida 3E No. 71-51, Edif. Acuario (Planta Baja) Apartado 1465, Maracaibo, Venezuela
American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015
J.L. Bludworth, 8207 Glen Loch, Houston, Texas 77061
Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130
CCS Marine Associates Ltd., 2784 Crescentview Drive, N. Vancouver, B.C. Canada V7R2V1
C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd., Jacksonville, Florida 32211
CTS & Associates, 11320 S.W. 108 Court, Miami, Fla. 33176
CADCOM, 107 Ridgely Ave., Annapolis, MD 21401
R.A.CADY-Marine Survey Practice, 2301 Leroy Stevens Road, Mobile, Ala. 36609
Childs Engineering Corp., Box 333, Medfield, Mass. 02052
John P. Colletti & Associates, P.O. Box 13378, Pittsburgh, PA 15243
Columbia-Sentinel Engineers Western, Inc., P.O. Box 21542, Seattle, WA 98111
Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026
Crane Consultants Inc., 15301 1st Ave., So. Seattle, Washington 98148
Francis B. Crocco, Inc., Box 1411, San Juan, Puerto Rico
C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048
Norman N. DeJong & Associates, Inc., 1734 Emerson St., Jacksonville, Fla. 32207
Design Associates, Inc., 3308 Tulane Ave., New Orleans, La. 70119
Designers & Planners Inc., One State Street Plaza, New York, N.Y. 10004
Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034
Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050
Friede and Goldman, Ltd., 225 Baronne St., New Orleans, La. 70112
Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006
John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110
L.R. Glosten & Associates, Inc., 610 Colman Bldg., 811 First Ave., Seattle, Wash. 98104
Phillip Gresser & Associates (PTE) Ltd., 122 Eng Neo Ave., Singapore 11
Morris Guralnick Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107
Hampton Roads Engineering, Inc., 119 E. Little Creek Rd., Norfolk, VA 23505
J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048
Hydronautics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810
Jantzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227
James S. Krogen & Co., Inc., 3333 Rice St., Miami, Fla. 33133
Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460
Alan C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063
John J. McMullen Associates, Inc., 1 World Trade Center, New York, N.Y. 10048
MacLear & Harris, Inc., 28 West 44 Street, New York, N.Y. 10036
Marine Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114
Marine Design Inc., 401 Broad Hollow Road, Rte. 110, Melville, N.Y. 11746
Maritime Service Company, 1357 Rosecrans St., Suite B, San Diego, CA 92106
Material Handling Engineering Co., 29330 N.E. 16th Place, Carnation, WA 98014
Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225
Mechanical Resources Inc., 191 Cambridge Avenue, Jersey City, N.J. 07307
George E. Meese, 194 Acton Rd., Annapolis, Md. 21403
Harry Meneian, 15 Lakeshore Rd., St. Catharines, Ontario, Canada L2N 2S7
Metritape, Inc., 33 Bradford Street, Concord, MA 01742
Nelson & Associates, Inc., 1405 N.W. 167th Street, Miami, FL 33169
Nickum & Spaulding Associates, Inc., 811 First Ave., Seattle, Wash. 98104
Norgaard and Clark, 114 Sansome St., San Francisco, CA 94104
Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114
Pearlson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33156
S.L. Petchul, Inc., 1380 SW 57th Ave., Fort Lauderdale, Fla. 33317
M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013 and 657 Mission St., San Francisco, Calif.
Sargent & Herkes, Inc., 611 Gravier St., New Orleans, La. 70130
Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316
Seacor Systems Engineering Associates, Corp., P.O. Box 2030, 19 Cherry Hill Industrial Park, Perina Blvd., Cherry Hill, NJ 08003
Seaworthy Engine Systems, 73 Main Street, Essex, Conn. 06426
George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007
T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2
The Stanwick Company Maritime Systems Department, 3661 E. Virginia Beach Blvd., Norfolk, VA 23502
R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235
Arne G. Svendsen, 58 Bonniefield Drive, Tiverton, R.I. 02878
Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963
H.M. Tiedemann & Co., Inc., 295 Greenwich Ave., Greenwich, Conn. 06830
Thames Engineering Consultants Inc., P.O. Box 589, New London, Ct. 06320
Timsco, 951 Government St., Suite 2161, Mobile, Alabama 36604
Corning Townsend III, 18 Church St., Georgetown, CT 06829
Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706
Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N.Y. 10016
Thomas B. Wilson, 920 North Avalon Blvd., Wilmington, CA 90744

NAVIGATION & COMMUNICATIONS EQUIPMENT
American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526
Frank Beier Radio Company, P.O. Box 10307, Jefferson, La. 70181
Collins Marine Corp., Pier 32, San Francisco, CA 94105
Communication Associates, Inc., 200 McKay Road, Huntington Station, N.Y. 11746

Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024
Electro-Nav, Inc., 1201 Corbin St., Elizabeth Marine Terminal, Elizabeth, N.J. 07201
EPSCO, Inc., 411 Providence Highway, Westwood, Mass. 02090
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080
Galbraith Pilot Marine Division, 166 National Road, Edison, NJ 08817
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631
ITT Decca Marine Inc., P.O. Box G, Palm Coast, Fla. 32037
ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611
Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780
Iotron Corp., 5 Alfred Circle, Bedford, MA 01730
Krupp Atlas—Elektronik, A Div. of Krupp Intl. Inc., P.O. Box 68218, Houston, Texas 77058
Magnavox Navigation Systems, 2829 Maricopa St., Torrance, Cal. 90503
Maritel Inc., 2510 Riva Road, Annapolis, Md. 21401
Nav-Com, Inc., 2 Hicks Street, North Lindenhurst, N.Y. 11757
Navidyne Corp., 11824 Fishing Point Drive, Newport News, VA 23606
Navigation Communications Systems, Inc., 20100 Plummer Street, Chatsworth, CA 91311
North American Philips Communication Corp., 91 Mckee Road, Mahwah, N.J. 07430
RCA Service Co., Building 204-2, Camden, N.J. 08101
Radar Devices, Inc., 14272 Wicks Boulevard, San Leandro, CA 94577
Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103
Raytheon Co., Submarine Signal Div., P.O. Box 360, Portsmouth, R.I. 02871
Rockwell International, Collins Telecommunications Products Division, Cedar Rapids, IA 52406
Rockwell International, Flow Control Division, 400 N. Lexington Ave., Pittsburgh, PA 15208
Simrad Inc., 1 Labriola Court, Armonk, N.Y. 10504
SI-TEX, P.O. Box 6700, Clearwater, FL 33518
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721

OILS—Marine—Additives
Ferrous Corporation, P.O. Box 1764, Bellevue, WA 98009
Gulf Oil Company—U.S. (Domestic Oils), 909 Fannin Street, Houston, TX 77001
Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
A. Margolis & Sons Corp., One World Trade Center, Suite 8751, New York, N.Y. 10048
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

OIL/WATER SEPARATORS
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932
The DeLaval Separator Co., 350 Dutchess Turnpike, Poughkeepsie, N.Y. 12602
National Marine Service, Inc., 1750 Brentwood Blvd., St. Louis, MO 63144

PAINT—Coatings, Protective
"CONSOL" manufactured by Hanline Bros., Inc., 1400 Warner St., Baltimore, MD 21230
Devoe & Raynolds Co., Inc., P.O. Box 7600, Louisville, Ky. 40207
Farboil Company, 8200 Fischer Road, Baltimore, MD 21222
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
Woolsey Marine Industries, Inc., 100 Saw Mill Rd., Danbury, CT 06810

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

PILOT LADDERS—Wood Products
A.L. Don Co., 58 Grant Avenue, Carteret, N.J. 07008

PIPE—HOSE—Cargo Transfer, Clamps, Couplings
Camlock Flange Sales Corp., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
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

PROPELLERS: NEW AND RECONDITIONED—SYSTEMS
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081
Coolidge Propellers, 1601 Fairview Ave. East, Seattle, Wash. 98102
Michigan Wheel/Gulf Coast, P.O. Box 1528, Pascagoula, MS 39567
Voith Schneider of America—U.S. Agent: Eli Sharprut, 347 Evelyn St., Paramis, N.J. 07652
Tacoma Boatbuilding Co./Escher Wyss, 1840 Marine View Dr., Tacoma, WA 98422

PROPULSION—Marine
Combustion Engineering, Inc., Windsor, Connecticut 06095
Maritime Industries, Ltd., 6307 Laurel St., Burnaby, B.C. Canada V5B 3B3
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166
Transamerica Delaval, Inc., Turbine & Compressor Div., P.O. Box 8788, Trenton, N.J. 08650

PUMPS—Repairs—Drives
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Transamerica Delaval, Inc., IMO Pump Div., P.O. Box 321, Trenton, NJ 08602
Warren Pumps, Inc., Bridges Ave., Warren, Mass. 01083
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

REELS—Coiling Systems
Reel-O-Matic Systems, Inc., 418 Hellman St., Wrightsville, Pa. 17368

REFRIGERATION—Refrigerant Valves
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
Port Refrigeration Div., 157 Perry Street, New York, N.Y. 10014

ROPE—Manila—Nylon—Hawsers—Fibers
American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431
Jackson Rope Co., Reading, Pa. 19603
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110
Tubbs Cordage Co., Orange, CA 92666

RUDDER ANGLE INDICATORS
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.

SCAFFOLDING EQUIPMENT—Work Platforms
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
American United Marine Corp., 575 Madison Ave., New York, N.Y. 10022
Argo Marine Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013
Demco, Inc., P.O. Box 94700, Oklahoma City, OK 73109
Envirovoc, Division of Dometic Inc., 107 Lawton Avenue, Beloit, WI 53511
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
Sigma Treatment Systems, 2 Davis Ave., Frazer, PA 19355

SHACKLES
West Footscray Engineering Works Pty. Ltd., P.O. Box 144, West Footscray, Victoria, 3012 Australia

SHAFTS, SHAFT SEALS, REVOLUTION INDICATOR EQUIPMENT
Armco Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45043
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

SHIPBREAKING—Salvage
American Ship Dismantlers, Inc., Division of Schnitzer Industries, 3300 N.W. Yeon Avenue, Portland, Ore. 97210
The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202
Eastchester Towing Co., 642 City Island Ave., Bronx, NY 10464
National Metal & Steel Corp., 691 New Dock St., Terminal Island, Cal. 90731
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

SHIPBUILDING STEEL
Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004

SHIPBUILDING—Repairs, Maintenance, Drydocking
Asmar Shipyards Co., Astilleros y Maestranzs de la Armada, Prat 856, Piso 14, Casilla 150-V, Valparíso, Chile, S.A.
Astilleros Espanoles, S.A., 17, Padilla, Madrid 6, Spain
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150
Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085
Bethlehem Steel Corp., One State Street Plaza, 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
Boeing Marine Systems, P.O. Box 3707, Mail Stop 14-11, Seattle, WA 98124
Ira S. Bushey & Sons, Inc., 764 Court Street, Brooklyn, N.Y. 11231
Camden Ship Repair Co., Inc., Point & Erie Streets, Camden, N.J. 08102
Carrington Slipways Pty, Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322
Centromar, One World Trade Center, Suite 3557, New York, N.Y. 10048
China Shipbuilding Corp., c/o Allegro Transportation Supply Co., 393 Seventh Avenue, Room 234, New York, N.Y. 10001
Coastal Dry Dock & Repair Co., Building 131, Brooklyn Navy Yard, Brooklyn, N.Y. 11205
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
Dorbyl Ltd., Military Road, 1 Industrial Sites, West Bank, 5201 East London Republic of South Africa
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
Galveston Shipbuilding Co., P.O. Drawer 2660, Galveston, TX 77553
General Dynamics, Quincy Division, Quincy, Mass. 02169
Halifax Industries, Ltd., P.O. Box 1477, Halifax, Nova Scotia, Canada, B3K 5H7
Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189
Havre de Grace, Havre de Grace, Md.
Hillman Barge & Construction Co., P.O. Box 510, Brownsville, Pa. 15417
Hitachi Shipbuilding & Engrg. Co., Ltd., 47 Edobori 1-Chome, Nishi-Ku, Osaka, Japan
Hongkong United Dockyards Ltd., Kowloon Docks, Hong Kong
Hudson Shipbuilders, Inc., P.O. Box Q, Pascagoula, MS 39567
Ingalls Shipbuilding, P.O. Box 149, Pascagoula, MS 39567
Jackson/New York, 29 45 Richmond Terrace, Staten Island, NY 10303
Jeffboat, Inc., Jeffersonville. Ind. 47130
Keppel Shipyard Ltd., P.O. Box 2169, 325, Telok Blangah Road, Singapore 4
Kockums Shipyard, S-201, 10 Malmo 1, Sweden
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
Mangone Shipbuilding Co., 819 South 80th Street, P.O. Box 5446, Houston, TX 77012
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
Marinette Marine, Ely Street, Marinette, WI 54143
Matton Shipyard Co., Inc., P.O. Box 645, Cohoes, New York 12047
J. Ray McDermott & Co., Inc., P.O. Box 60035, New Orleans, LA 70160
Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681
Mississippi Marine Towboat Corp., P.O. Box 539, Harbor Front Industrial Park, Greenville, MS 38701
Mitsui Shipbuilding & Engrg. Co. Ltd., 6-4, Tsukiji 5-chome, Chuo-ku, Tokyo, Japan
Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655
National Steel & Shipbuilding Corp., San Diego, Calif. 92112
Newpark Shipbuilding & Repair, P.O. Box 5426, Houston, TX 77012
Newport News Shipbuilding & Dry Dock Co., 4101 Washington Ave., Newport News, Va. 23607
Norfolk Shipbuilding & Drydock Corp., P.O. Box 2100, Norfolk, Va. 23501
Northwest Marine Iron Works, P.O. Box 3109, Portland, Oregon 97208
O.A.R.N. (Officine Allestimento-Riprazioni Navi), P.O. Box 1395, Genoa. Italy 16100
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501
Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla. 33156
Perth Amboy Dry Dock Co., Perth Amboy, N.J. 08862
Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767
Port of Portland, P.O. Box 3529, Portland, OR 97208
St. Louis Shipbuilding—Federal Barge, Inc., 611 East Marceau, St. Louis, Mo. 63111
STE Marie Yard & Marine, Inc., 741 East Portage Ave., Sault Ste Marie, MI 49783
Savannah Machine & Shipyard Co., P.O. Box 787, Savannah, Ga. 31402
Setenave-Estaleiros Navais De Setubal, P.O. Box 135, Setubal, Portugal
Sudoimport, 5 Kalyaevskaya, Moscow K-6, USSR
Sun Shipbuilding, Foot of Morton Ave., Chester, Pa. 19013
Swiftships Inc., P.O. Box 1908, Morgan City, LA 70380
Tacoma Boatbuilding Co., Inc., 1840 Marine View Drive, Tacoma, WA 98422
Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004
Total Transportation Systems Inc., 813 Forest Dr., Newport News, VA 23606
Total Transportation Systems (International) A/S, Bjornegarden, P.O. Box 28, N5201 Oslo, Norway
Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316
Tug Barge Systems, Inc., subsidiary of Ingram Corp., 4100 One Shell Square, New Orleans, La. 70139
Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087
Valmet OY, Helsinki Shipyard, Laivanrakentajantie 2, P.O. Box 910 SF-00101 Helsinki 10, Finland
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
Zigler Shipyards, P.O. Box 2607, Morgan City, La. 70380

SHIP STABILIZERS
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.

SMOKE INDICATORS
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928

STUFFING BOXES
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062

SURVEYORS AND CONSULTANTS
Hull & Cargo Surveyors, Inc., 99 John St., New York, NY 10038

TANK CLEANING
Butterworth Systems Inc., 224 Park Ave., P.O. Box 352, Florham Park, N.J. 07932
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Salwico, Inc., 77 River St., Hoboken, N.J. 07030

TANK LEVELING INDICATORS
Transamerica Delaval, Inc., Gem Sensors Div., Spring Lane, Farmington, CT 06032
Vu-Gage System, 150 E. 42nd St. (Room 910), New York, NY 10017

TERMINALS—Oil-Transfer
Delong Corp., 29 Broadway, New York, N.Y. 10006
Transportation Concepts & Techniques, Inc., 551 Fifth Avenue, New York, N.Y. 10017

TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.
Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002
Chotin Transportation, Inc., 580 Walnut St., Cincinnati, Ohio 45202
Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202
Delmar Systems, Inc., 160 Industrial Parkway, Lafayette, La. 70501
Henry Gillen's Sons Lighterage, 21 West Main St., Oyster Bay, N.Y. 11771
Gulf Fleet Marine Corp., 225 Baronne St., Suite 600, New Orleans, LA 70112
James Hughes, Inc., 17 Battery Pl., New York, N.Y. 10004
McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
McDonough Marine Service, P.O. Box 26206, New Orleans, La.
Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, N.Y. 10048
Suderman & Young Co., Inc., 918 World Trade Bldg., Houston, Texas 77002
Turecamo Coastal & Harbor Towing Corp., One Edgewater St., Clifton, Staten Island, N.Y. 10305

UNDERWATER SERVICES—Contracting
SeaTec International Ltd., Blackburn Industrial Center, Gloucester, MA 01930

VALVES AND FITTINGS
American United Marine, Corp., 575 Madison Ave., New York, NY 10022
Demco, Inc., P.O. Box 94700, Oklahoma City, Okla. 73109
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
Mechanical Marine Co., 900 Fairmount Ave., Elizabeth, N.J. 07027
Stacey Valve Co., 29 Meserole Ave., Brooklyn, N.Y. 11222
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928
Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186

VIDEO EQUIPMENT
Video Library Systems, 185 Osoer Avenue, Hauppauge, NY 11787

WATER PURIFIERS
Everpure Inc., 600 North Blackhawk Drive, Westmond, Ill. 60559

WEATHER FORECASTS
ERT, 696 Virginia Road, Concard, Mass. 01742
Oceanographic Services, P.O. Box 6783, Santa Barbara, CA 93111

WELDING SYSTEMS
MK Products, Inc., 16882 Armstrong Ave., Irvine, CA 92705

WINCHES
Bloom Inc., Highway 20, West Four Miles, Independence, IA 50644
Clyde Iron, a unit of AMCA International Corp., Suite 200 Stockton Bldg., University Office Plaza, Newark, Del. 19702
Gearmatic Co. Ltd., 7400 132nd Street, Surrey, B.C., Canada
Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134

WINDOWS
Kearfott Marine Products, A Singer Co., 550 South Fulton Avenue, Mt. Vernon, N.Y. 10550

WIRE AND CABLE
Anixter Bros., Inc., 4711 Golf Road, One Concourse Plaza, Skokie, Illinois 60076
Seacoast Electric Supply Corp., 225 Passaic St., Passaic, NJ 07055
Seacoast Electric Supply Corp., 1505 Olive St., Houston, TX 77007

WIRE ROPE—Slings
Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004

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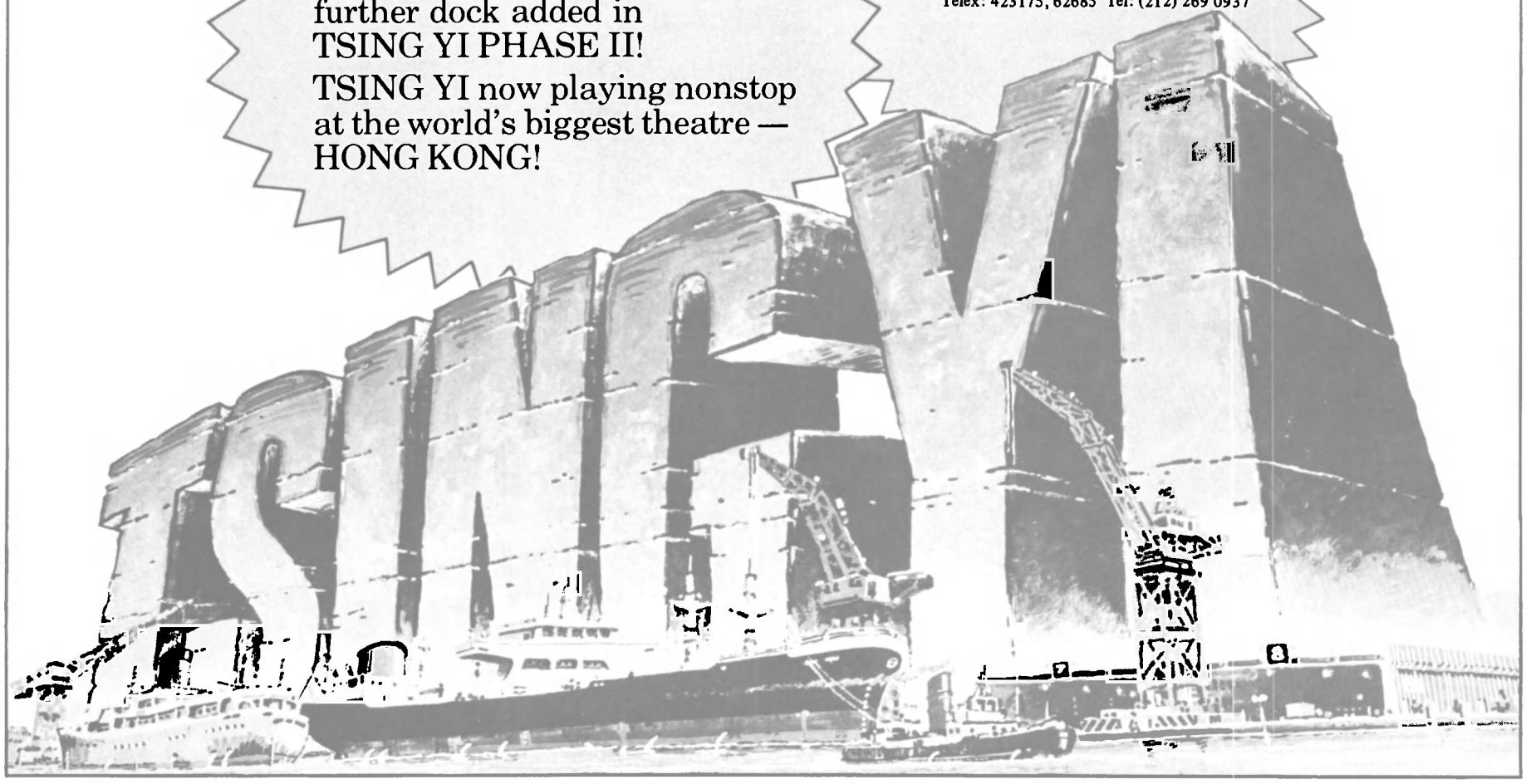

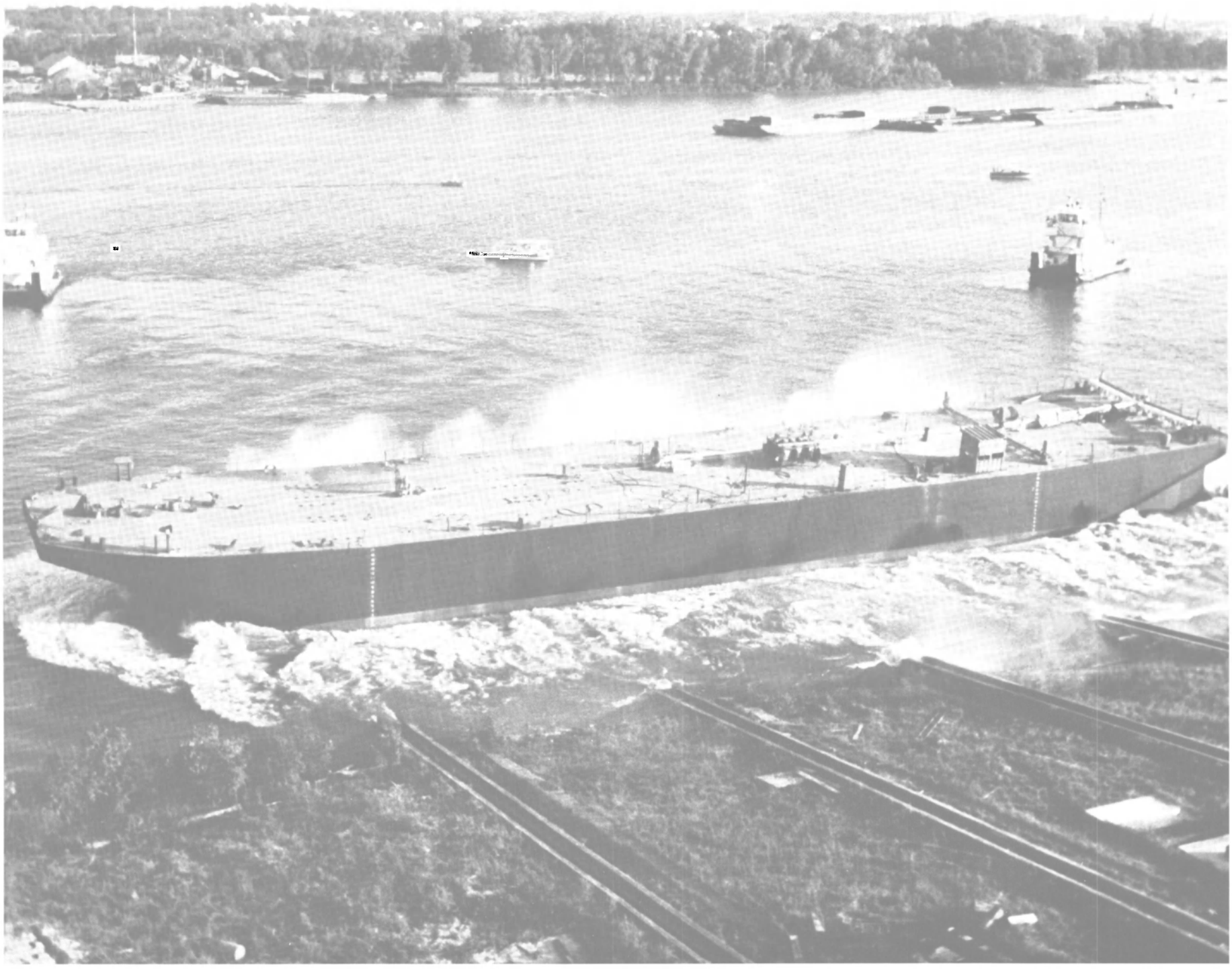

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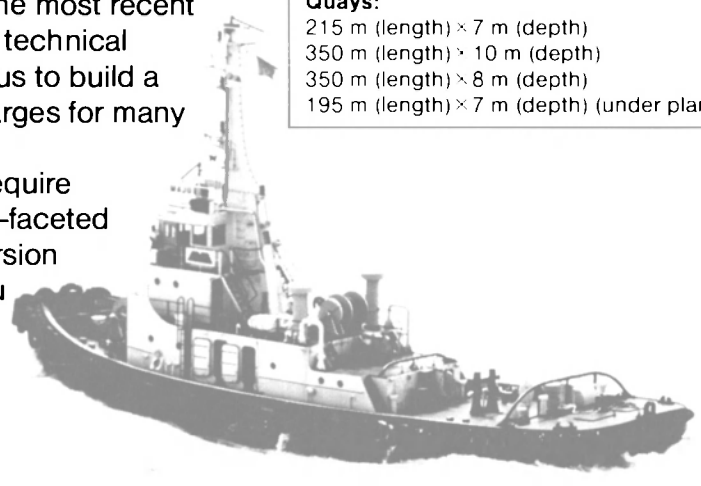

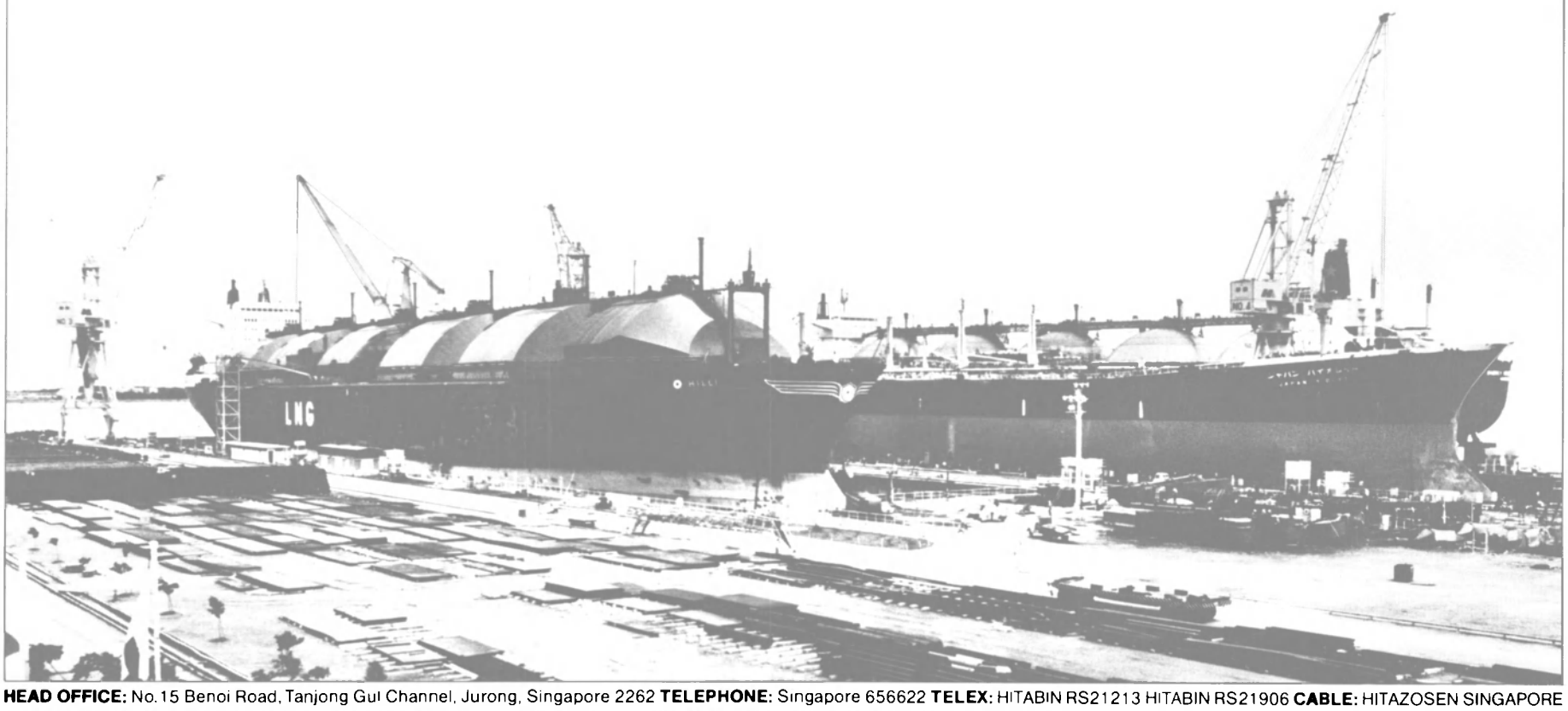

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