

MARITIME REPORTER

AND
ENGINEERING NEWS



**First Of Three New CP Containerships
Unloads At Company's New Quebec Terminal**

(SEE PAGE 6)

FEBRUARY 1, 1971

Through the Northwest Passage in a herring boat.

Not very long ago, a specially constructed icebreaker-tanker made headlines when it traversed the Northwest Passage.

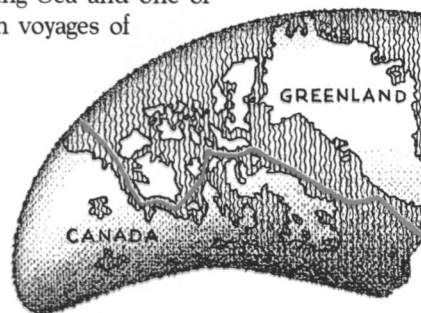
Sixty-four years ago, Roald Amundsen did the same thing in a herring boat, the *Gjoa*.

Amundsen and his party left Greenland in August 1903 with enough supplies to last four years. On September 1st they struck an unmarked reef, and though they had to jettison five tons of supplies, they continued. They spent the winter of 1903-04 doing scientific research around the magnetic North Pole.

Month after month they continued through ice, fearful storms, and sometimes through water so shallow that, Amundsen reports, the ship seemed to be travelling over a plowed field.

On August 17th, 1905, the *Gjoa* dropped anchor off the cape of Colborne. They had successfully made the trip through the Northwest Passage. But they still had a thousand miles to go to reach their ultimate destination.

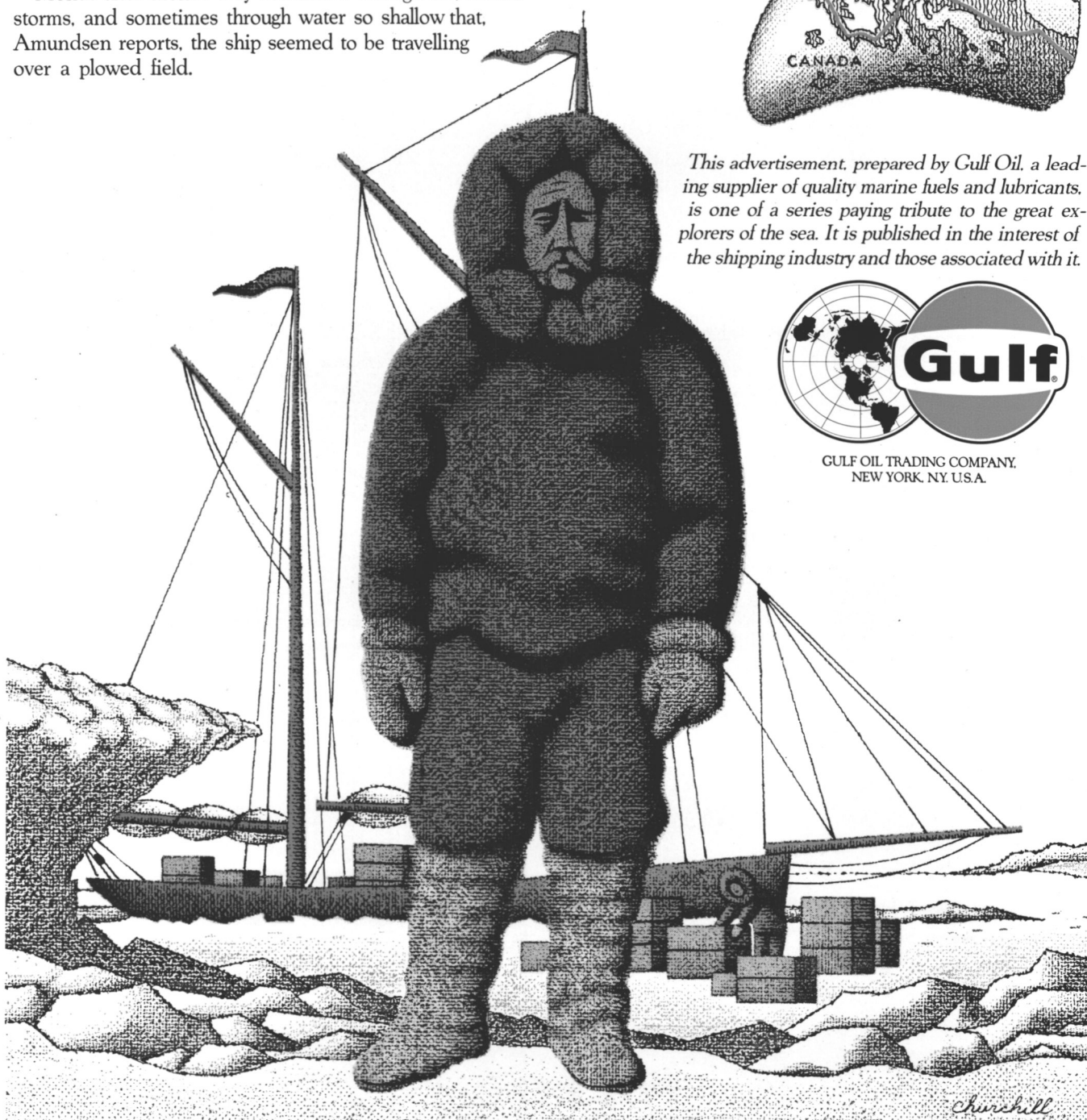
It was August 30, 1906 when they reached the northern entrance to the Bering Sea and one of the great exploration voyages of history was over.



This advertisement, prepared by Gulf Oil, a leading supplier of quality marine fuels and lubricants, is one of a series paying tribute to the great explorers of the sea. It is published in the interest of the shipping industry and those associated with it.

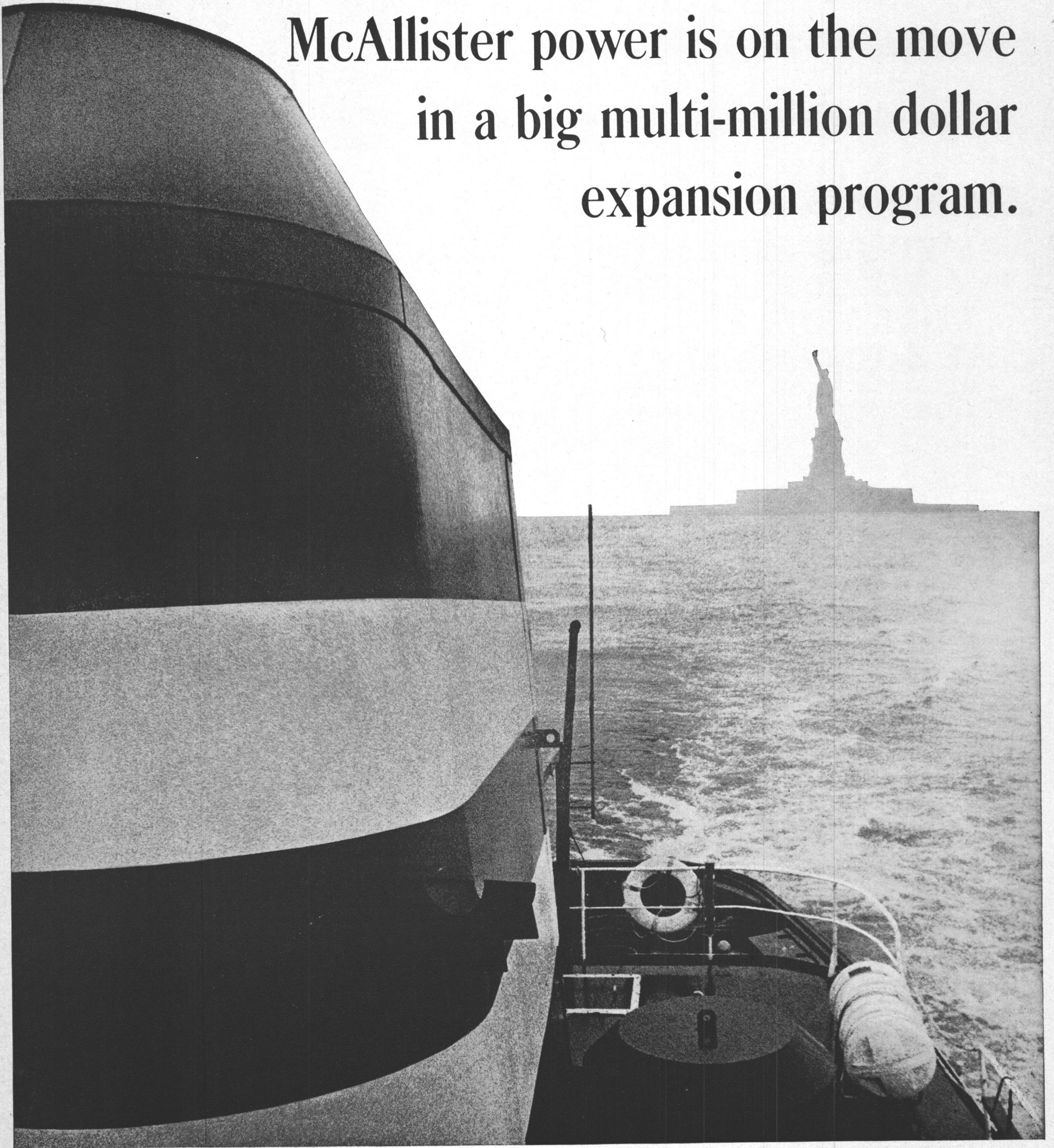


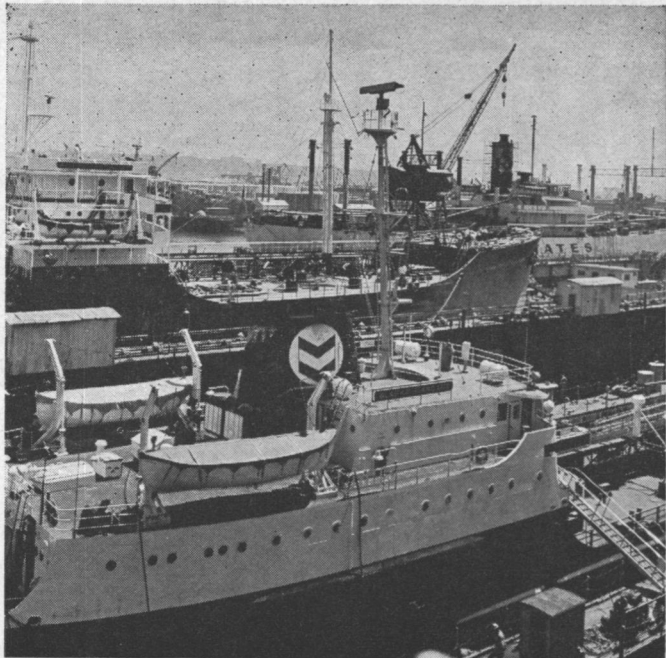
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IHI To Construct Huge Ore-Oil Carrier For Greek Shipowners

Ishikawajima-Harima Heavy Industries Co., Ltd. has reported the receipt of an order from P.J. Goulandris and Sons of Greece for an ore-oil carrier of 220,000 dead-weight tons.

The proposed vessel will be the third of its type and the 54th new building by IHI for the same owners. Delivery by the Japanese shipyard is scheduled for March 1974.

Campbell Machine Signs Navy Contract

Campbell Machine, Inc., confirmed signing the largest single Navy repair contract ever awarded to the San Diego shipbuilding and repair firm. Totaling \$1,638,717, the three-months' contract covers regular overhaul and drydocking for the Navy's general repair ship Ajax (AR-6), according to George J. Soares, Campbell president.

"This job will help stabilize our shipyard employment at better than 500 persons, because it comes at a season of the year when routine repair work generally falls off," Mr. Soares stated. It can also be expected to account for an employment increase during the contract term by as much as 10 percent," he added.

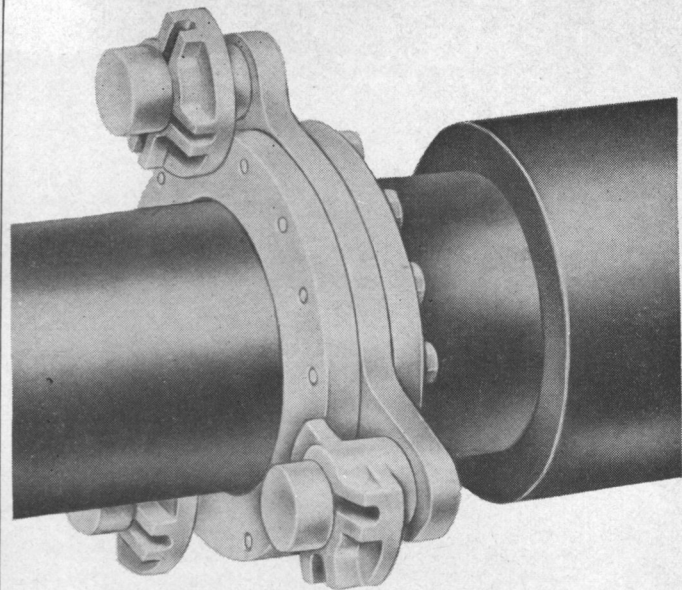
This is Campbell's second Navy repair contract to top the \$1,000,000 mark. The first, awarded nearly a year ago for \$1,195,000, covered work on the USS Cleveland.

The Ajax is just back from 10 years of duty overseas, where she performed general repair functions for a variety of auxiliary vessels of the fleet. She is 530 feet long overall, has a 73-foot beam, and a heavy displacement of 16,380 tons.

Data Sheet Available From Alden Electronic

Alden Electronic & Impulse Recording Equipment Co., Inc., Westboro, Mass., announces the availability of a two-page data sheet describing the OSR-219T Precision Data Recorder.

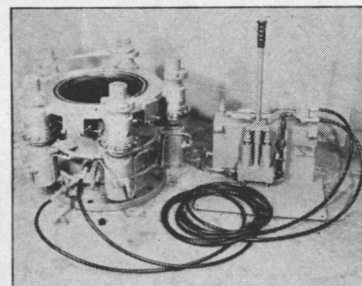
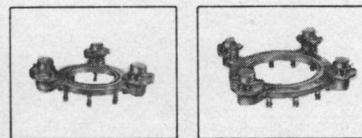
The OSR-219T Precision Data Recorder, with built-in programmer/transceiver, couples directly with a vessel's transducer to make a complete system for bottom mapping, sub-bottom profiling, sonar recording or spectrum analyzer display.



The CL coupling: It's boltless and reduces flange to flange hook-up time from hours to minutes.

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One more point. Since hook-up time is substantially reduced, the cumulative savings in time will more than make up for the cost of CL couplings.



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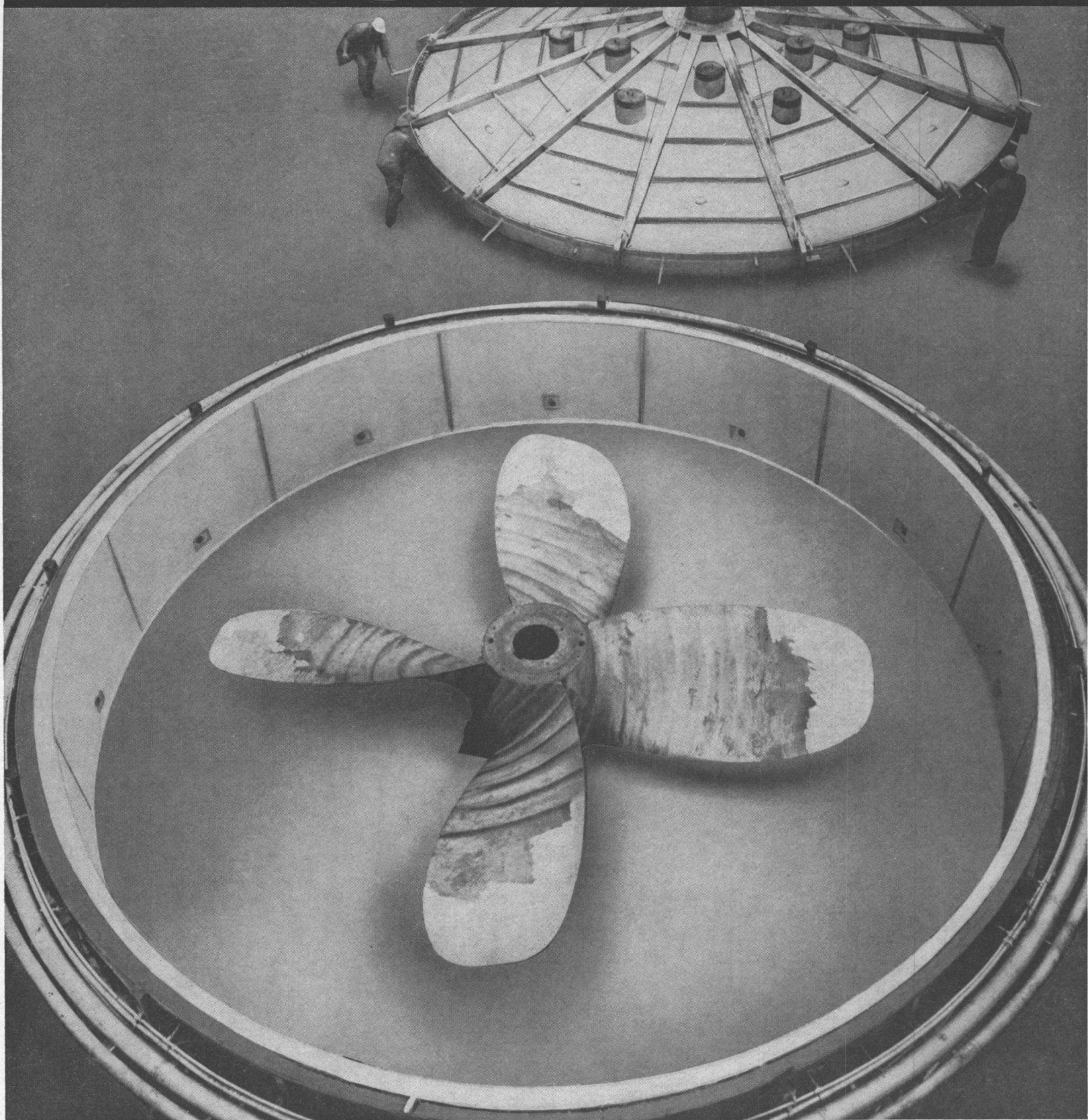
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The first of CP Ships' new 700-container vessels, the CP Voyageur, arrived at Quebec City on Dec. 20 loaded with containers from London and Rotterdam. The 16,000-dwt vessel and its two sister ships now under construction at Birkenhead, England, cost a total of \$20,000,000 and are designed to permit eventual stretching to 1,000 container capacity. The three vessels will operate a weekly service between London, Rotterdam and Quebec. Equipment at the container terminal at Wolfe's Cove completely reloaded the ship in two days.



CP Ships' vessel Beaverack was stretched to increase its capacity to 322 containers and renamed the CP Ambassador. The \$900,000 PACECO-Vickers Portainer Crane at CP Ships' new highly mechanized container terminal unloads the CP Ambassador at a rate of almost 40 containers per hour. The new facilities permit this vessel to completely unload and reload in 30 hours. The terminal, which has a weekly throughput of 1,600 containers each way, is the key to CP Ships' successful North Atlantic container services.

CP Container Port Designed For Fast Throughput

The official opening of CP Ships' fully-integrated container terminal at Wolfe's Cove, a little upstream from Quebec City, Canada, by Premier **Robert Bourassa** on December 5, marks the completion of the most important step in a \$30-million containerization program announced in October 1968.

Announcing the choice of Quebec City in 1968, CP Ships chairman **W.J. Stenason** said: "This port best suits the economic and competitive factors of our particular trade channels. Quebec City is also best suited to the integrated ocean, rail and road system which Canadian Pacific can muster to move containers."

The fully-equipped double berth terminal will serve as the land-ocean link for CP Ships' rapidly expanding North Atlantic container operations. These services link all parts of Canada and the U.S. midwest with Western Europe through four United Kingdom and Continental ports.

The new facilities at Wolfe's Cove are designed to optimize the efficiency of ship loading and unloading as well as rail and truck terminal operations. Coordination of Portainer and Transtainer crane activities by use of the versatile straddle carriers ensures a weekly throughput capacity of 1,600 containers each way.

Transformation of the Wolfe's Cove area from a temporary facility to a modern highly mechanized terminal began last April. Existing rail trackage at the site had to be completely removed to clear the area for the container park and the four-track loading and marshaling railhead at the rear of the site. This task, which cost CP Rail \$500,000, also included further reorganization of the other tracks in the vicinity to create the necessary back-up tracks for making up full trains.

Key to the rapid loading and unloading of

trucks and trains is the 74-foot-wide, 35-ton-capacity Transtainer crane which straddles the four-track railhead and a 16-foot-wide truck and straddle carrier lane, on two 1,600-foot-long concrete runways. Containers deposited by the straddle carriers are loaded onto flatcars on any of the four tracks by the 50-foot-high Transtainer. Trains marshaled for different destinations can thus be made up simultaneously, as a ship is unloaded. Containers moving out by truck can be loaded directly from the ship.

A separate company, Transport Terminals Ltd., has been formed by CP Ships to operate and maintain the terminal facilities. The company is building a garage and other maintenance facilities for its moveable equipment.

The most important and complex piece of equipment on the site is the giant 35-ton-capacity PACECO-Vickers Portainer crane. The electrically operated Portainer moves along the edge of the terminal's two ship berths on a 1,200-foot-long, 50-foot gage track. The



A six-wheel, triple stacking straddle carrier unloads a 20-foot container from a CP Express trailer truck at CP Ships' new container terminal at Quebec City. In the background is the terminal's \$900,000 Portainer crane.

boom of the \$900,000 machine has a 110-foot outreach from the edge of the dock over arriving ships, at a height of 65 feet above the dock. Effective backreach of the crane is 30 feet beyond its rear legs which are 55 feet from the dock edge. When not in use, or when a ship is docking, the Portainer outreach boom is raised to a vertical position, giving the crane an overall height of 208 feet. For optimum visual control, the operator's cab is attached directly to the lifting apparatus and moves along the boom with the container load from ship's hold to dock area.

The crane has elaborate safety measures and back-up systems in case of mechanical or electrical failures, while the operator's controls permit only certain specified activities to occur simultaneously. The Portainer normally averages about 40 container movements per hour.

"The challenge of operating a container terminal is to achieve rapid ship turn-arounds," said **Bernard Genest**, president of Transport Terminals. "The effectiveness of any transportation system involving different modes of transport is largely limited by the efficiency of the interface movements between the different modes. For containerization, where each mode completes its portion of the total movement as rapidly as possible, throughput movements become even more crucial.

"When ships are involved, this throughput must be achieved in both directions at once. That is why all aspects of our terminal operation are carefully planned to complement each other," stated Mr. **Genest**.

As containers arrive for a specific ship, they are laid out in the 2,400-container-capacity paved park area in a specific loading pattern, according to destination and the space characteristics of the vessel in which they will be

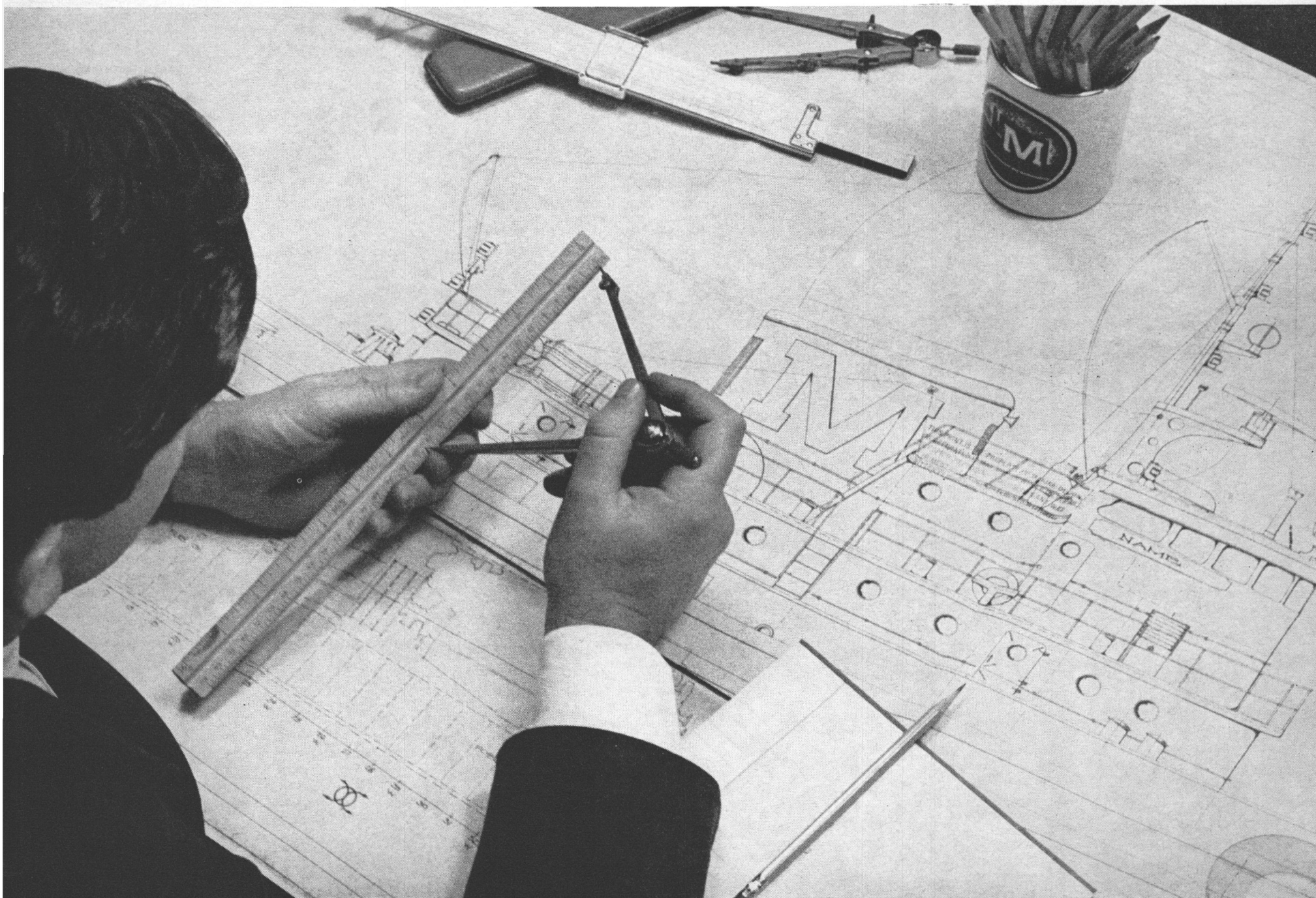
(Continued on page 8)

With tankers and freighters becoming larger and larger and with turn around time and prompt port schedules more often than not spelling the difference between profit and loss, Moran's designers are keeping pace with the needs of the Maritime Industry.

Moran's fleet today is the most modern afloat and designed to meet the most demanding requirements. New and more powerful tugs currently under construction will soon augment this fleet.

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CP Container Port—

(Continued from page 6)

loaded. For stability at sea, containers with the heaviest loads must be placed closest to the ship's center, with lighter loads above and below.

Movement of containers around the park is done by special six-wheeled container straddling van carriers. Transport Terminals has three of these \$175,000 machines which can stack containers three high in rows less than four feet apart. For ground movements directly to and from the Portainer and the Trans-tainer crane, the straddle carriers are assisted by trailer truck chassis which merely provide a mobile platform shuttle service between the two cranes.

When a ship arrives, empty railcars are ready at the back of the site allowing a direct unloading movement from ship to train. Meanwhile, accelerated loading onto the vessel goes on simultaneously from the prearranged load pattern of outgoing containers.

CP Ships is also acquiring its own fleet of containers. Deliveries are now almost complete on a \$7,500,000 order for 11 different standard varieties of containers. The order includes a substantial number of 40-foot containers, primarily temperature controlled and dry freight types.

Canadian Pacific realizes an integrated transportation system is the key to achieving the benefits of containerization. With its 100,000-mile network of land, sea and air routes spanning five continents, the company has found this new area of freight movement a natural one in which to become involved. The challenge has been for the company to realize its potential for supplying multimodal land-ocean services. Container distribution services are provided now by CP Rail, CP Transport, CP Express, Smith Transport, U.S. affiliates, and other common carriers. These companies provide comprehensive inland services, including collections, deliveries, and intermodal terminal operations. Constantly expanding freight groupage services for smaller shippers are already available throughout Canada and the U.S. midwest.

For example, CP Express automated cargo sorting equipment at Montreal and Toronto, speeds handling of LCL shipments arriving at these terminals. Of more direct benefit are CP Rail's newly-designed container flatcars. The 81-foot-long cars are the lightest of their type and can carry four 20-foot or two 40-foot containers. So far the railway has 330 special lightweight or converted container flatcars. A further order of 200 of the 180,000-pound load limit lightweight cars will be delivered by April 1971.

CP Rail has reprogramed its train scheduling to provide four-hour service from Quebec to Montreal and overnight deliveries to Toronto. To handle increasing traffic, CP Express is installing 35-ton, 74-foot-wide Trans-

tainer cranes at both these terminals. These cranes will span two rail tracks, one roadway and the container storage area.

As R.L. Purdy, CP Ships North American regional manager of freight services explains: "In the past two years we have reduced ship turn-around by up to 10 days. For us, this terminal provides the remaining ingredient for fast throughput of container traffic—rapid handling between land and sea transportation modes.

"Wolfe's Cove is just part of a whole network we are developing of facilities necessary for fast integrated service. That is what we're offering, fully-integrated, door-to-door service," Mr. Purdy stated.

Facts About Quebec Container Terminal

Weekly throughput capacity	1,600 containers each way
Site area	17.5 acres
Terminal operator	Transport Terminals Limited

Facilities:

—Portainer Crane

Capacity	35 tons
Container movements per hour	40
Outreach	115 feet
Backreach	30 feet
Track length	1,200 feet
Track gage	50 feet
Height when working	156 feet
Height with boom raised	208 feet
Power	600 volt electrical
Cost	\$900,000

—Transtainer Crane

Capacity	35 tons
Container movements per hour	40
Width	74 feet
Height	50 feet
Length of runway	1,600
Wheel diameter	5'6"
Power	Diesel electric
Cost	\$275,000

—Straddle Carriers

Number on site	3
Capacity	35 tons, 20' containers (triple stacking); 40' containers (double stacking)
Height	27 feet
Motive power	Diesel
Number of wheels	6, all steerable
Outside turning radius	33'4" with 40' container
Cost	\$175,000

—Rail Terminal

Length	½ mile (plus switching and car storage areas)
Number of tracks	4
Cost	\$500,000

—Container Park

Capacity	2,400 20-foot containers, triple stacked.
Surface	Contoured for drainage and paved.
Lighting	Two towers with 16 1,000-watt floodlights plus one central tower with 32 1,000-watt floodlights.

Pacific Northwest Section Holds December Meeting In Portland



Pictured in front of the holiday decorations at the December 1970 meeting of the Pacific Northwest Section are, left to right, **John Cauduro**, discussor; **Robert F. Riggs**, author and speaker; **Wilbur H. Sample**, discussor and **Pete Sias**, chairman of the Pacific Northwest Section.

Forty-eight members and guests of the Pacific Northwest Section of The Society of Naval Architects and Marine Engineers from the Columbia River Area, Greater Seattle, and Vancouver, B.C. gathered in Portland, Ore. for their regular meeting on December 11, 1970, to share the joyous and warm feelings of the season and to hear a paper written and presented by **Robert F. Riggs** entitled "A New System for Prevention of Collision at Sea." Mr. Riggs is a research engineer with Sperry Marine Systems Division of the Sperry Rand Corporation.

For several years Mr. Riggs, who holds several patents for radar and related equipment, has been involved in studying the collision avoidance problem with the object of presenting a satisfactory solution. The result of this study is the introduction of a radar/computer/display system that allows the conning officer, at a glance, to consider all the targets that are presently or possibly involved, their positions, headings, speeds, tactical geometry and probable maneuvers. Detection of targets is enhanced by a high resolution radar featuring a bright tube display and circular polarization. Threat assessment is made by a completely automatic system called the Collision Threat Assessment Display, which permits the conning officer to perceive the threat posed by each target on the radar screen. Maneuver planning is made easier, safer and more rapid by this unique computerized display that presents all essential data required for conning in a simple, easily understood format.

Discussors were **Wilbur H. Sample**, Gunderson, Inc. and **John Cauduro**, Progress Electronics Co. Mr. Sample generally agreed with Mr. Riggs's paper, noting that as the state of the art permits, greater use of automatic equipment will be made, particularly on larger vessels navigating in congested waters. Mr. Cauduro shared the author's opinion that the need of shipowners throughout the world is for radar and related equipment having the highest standards of reliability and producing information in the most simple form for the ships' officers. It was noted, however, that cost and complexity continue to be excessive for the majority of users, and Mr. Cauduro felt that simplicity and reliability had not yet been achieved. Mr. Cauduro agreed with Mr. Sample that there is an urgent need for help with regards to anti-collision equipment on large vessels and tugs in the more congested waterways.

Commenting on the views of the discussors, Mr. Riggs stated that cost effectiveness is a major concern when conducting research, and he agreed that more research is still needed to improve the design and reliability of radar and related communication systems.

Trawler Design Contract Awarded To Canadian Firm By Portuguese Committee

The Committee for Fishing Vessel Development, Lisbon, Portugal, has awarded a major ship design contract for a new series of refrigerated stern trawlers to the international consulting group Central Design and Drafting Ltd., Montreal, Canada.

The contract award was made following the completion of a comprehensive pre-investment study. This indicated that substantial improvements in vessel profitability could be made by application of best current design practice. New mathematical simulation tech-

niques and computer methods of analysis were used in the pre-investment study, commissioned by the committee.

Dr. David J. Doust, president of Central Design and Drafting Ltd., says that many large investment groups in both the public and private sectors throughout the world are looking to the fishing industry to achieve more rationale in its decision making processes.

"Many new methods of investment analysis could be usefully applied to fisheries enterprises," he adds, "if the industry is to successfully compete in the international money markets, and it therefore has to benefit more from exposure to the application of these new techniques."



Matson wanted the highest capacity in containerships. B&W built the boilers to match.

38,800 tons. 719 feet long. And capacity for 1,168 twenty four-foot containers.

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And twin Babcock & Wilcox boilers will drive each of them, as well as four similar ships scheduled for later delivery. These boilers will deliver 95,000 pounds of steam per hour at 930 pounds per square inch pressure and

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Designed for high reliability and low maintenance, each boiler-burner package provides more than 20-to-1 turndown ratio. With no manual attention required.

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The Global Soviet Naval Challenge

Dr. Anthony T. Bouscaren*

Despite the tremendous technological progress made in air transportation and strategic weapons systems in this century, free use of the seas—which cover three-fourths of the earth's surface—continues to be essential to the security of this country, whether to defend ourselves or our allies. Ninety-seven percent of all the material sent to Vietnam has gone by sea.

Fully cognizant of our dependence on sea-borne transportation, the Soviet Union has developed a naval strategy aimed at interdicting our sea lanes. Since World War II, they have placed increasing priority on submarines, aware of the fact that the last two world wars were almost lost because of the Allied problem in keeping the sea lanes open.

With the rapid advancement of technology since the end of World War II, the role of the submarine in naval warfare has expanded. Nuclear power, long range missiles, sophisticated electronics, computers—all combine to make the submarine many times more potent and versatile than before. The nuclear-powered ballistic missile submarine has become our most viable deterrent strategic weapon. The Soviets are presently engaged in a massive construction program to build a fleet of similar submarines, and a part of this fleet is now on station off our coasts. Present projections indicate that by mid-1974 their ballistic missile submarine fleet will equal ours. The Soviets are also building large numbers of high-speed, torpedo-firing nuclear-powered submarines which can fire long-range cruise missiles, capable of being armed with conventional or nuclear warheads. Ships of the Soviet Navy are systematically present in all oceans, challenging the Allied control of the seas.

Starting with 200 diesel-powered submarines at the end of World War II, the Soviets embarked on the largest "peace-time" submarine construction program in history, producing over 570 modern submarines in 25 years—most designed for long-range operations. During the same period we built 105 submarines. In two years alone, 1955 and 1956, the Soviets completed 150 submarines, one and one-half times the total number of submarines produced in this country during the past 25 years. The Soviets now possess the largest and most modern submarine building yards in the world, giving them several times the nuclear submarine construction capacity possessed by the United States. In addition, 10 times as many naval architects and marine engineers are graduating in the U.S.S.R. than in the United States. According to the latest unclassified data, the Soviets now have between 355 and 363 submarines, all built since 1945, with at least 75 being nuclear-powered. The total U.S. force is 147, of which 88 are nuclear-powered. Based on current force levels and estimated Soviet nuclear submarine building rates, they will be ahead of us numerically by the end of this year (1970).

*Dr. Anthony T. Bouscaren is professor of political science, LeMoyne College. This editorial is presented with permission of the American Security Council.

One of the new Soviet sub designs is the Yankee class nuclear-powered ballistic missile boat, introduced in 1968. These submarines are very similar to our Ethan Allen Polaris submarine, and are capable of launching 16 ballistic missiles submerged. The Soviets now have 13 of the Yankee class operational and they are building 12 a year. It is estimated that they will surpass our Polaris fleet by mid-1973.

The Soviet submarine force, like the entire Soviet Navy, has become capable of sustained open-ocean operations and is being used in support of foreign policy in many areas of the world. During the recent large-scale naval maneuvers that included over 200 ships in both Atlantic and Pacific Oceans and nine adjoining seas, the Soviets deployed a large number of nuclear submarines away from their home bases, supplied by large seagoing tenders capable of remaining at sea for six months, servicing and repairing submarines while under way. Commenting on these maneuvers, Soviet Admiral **Gorshkov**, Commander-in-Chief of the Soviet Navy, declared: "Whereas until quite recently some areas of the world's oceans were considered restricted areas in which the navies of the imperialist powers ruled supreme and where our ships seldom ventured, now there are no such areas."

The Soviets are pulling ahead both in the speed of their submarines and in submarine weaponry. They possess a torpedo capability comparable to our own, and they have also successfully developed and put to sea some 65 submarines capable of firing long-range cruise missiles. These boats represent a threat to our worldwide surface shipping, our naval surface forces, and our free use of the seas. We do not possess a comparable weapons capability.

By the end of 1975, when we put into operation the last submarine currently authorized, the United States will have a total of 109 nuclear submarines. During the same period, the Soviets will probably add at least 70 nuclear subs for a total of between 145 and 153—giving them a numerical superiority of 50 percent in nuclear submarines. We are building only three submarines a year, while the Soviets are building 10 to 12.

Adm. **Hyman Rickover**, among others, has recommended that the current high-speed attack submarine (SSN 688 Class) building program be increased from three to at least five per year. He also recommends commencing on a new design high-speed submarine capable of firing long-range submarine-to-surface cruise missiles. To increase the invulnerability of the Polaris submarine, Admiral **Rickover** advocates increasing the range of the missile—thus providing greater ocean areas to hide in. This means pushing ahead with the development of the Undersea Long Range Missile System (ULMS).

There is some evidence that the Soviets have developed a base in Cienfuegos, Cuba, which can service its submarine fleet in this part of the world. One of the many advantages of the base would be a facility for the repair and adjustment of ballistic missiles carried by

the Yankee class sub. The development of this base provides the Soviets with an additional option for offensive strategy.

With the achievement of superiority in ICBMs, the development of space weapons, the rapid build-up on the seas and the elaborate and sophisticated support given to subversive movements in this hemisphere, the Soviets would appear to be on the threshold of a major breakthrough, far exceeding the temptation of 1962 which led to the Cuban missile crisis.

For some time now, the Soviets have been conducting an elaborate program of espionage against our military and space installations all along the Atlantic coast. The port of Charleston is one of the bases for our Polaris nuclear submarines. Soviet spy ships have been repeatedly sighted near the harbor waters at Charleston, sometimes anchoring right by the harbor buoy at the entrance to the port, to record the "sonic signatures" of the Polaris submarines and other U.S. naval vessels entering or leaving the port. A notorious case concerns the activities of the Soviet trawler *Laptev*, in its efforts last July and August to monitor the test firings of the Poseidon missile from the USS *Madison*, based at Charleston. The harassment by the *Laptev* actually caused the postponement of the Poseidon test launch, and almost involved a serious accident at sea.

The *Laptev* is a Soviet intelligence collection ship—AGI—and only nominally a trawler. Designated as the *Khariton Laptev*, this vessel is listed by *Jane's* (*Jane's Fighting Ships*, 1970) as an oceanographic survey ship of the *Nikolai Zubov* class. The Soviet Union has deployed intelligence collection ships in electronic surveillance operations against U.S. naval and land targets since the end of the Korean war. Soviet AGIs have operated along the east coast of the United States with patrols lasting about two months. Their main area of interest has been the Virginia Capes, amphibious training areas off the North Carolina littoral, naval operating areas off Charleston, and Cape Kennedy. Such patrols also cover the Puerto Rico naval operating areas and U.S. space vehicle recovery areas. Soviet AGIs which have operated off the east coast during the past year are as follows: *Teodolit* (August 12, 1969 to November 1, 1969), *Krenometr* (October 28, 1969 to January 3, 1970), *Lotlin* (January 20, 1970 to April 2, 1970), *Teodolit* (March 31, 1970 to June 13, 1970), and *Laptev* (June 2, 1970 to present).

With respect to the Cienfuegos submarine base, when it becomes fully operational, the Soviets will have the capability not only of reaching our South, Southwest and Middle West, but also the Panama Canal and much of Central and South America. Nuclear missiles fired against the United States from a Caribbean launching area would, of course, outflank our IBM defenses in Montana and the Dakotas. Thus all the more urgency to place part of our IBM defenses at sea in the Navy's mobile SABMIS (Seaborne Anti-Ballistic Missile Intercept System) system.

The threat of Soviet subs in Cienfuegos is
(Continued on page 12)



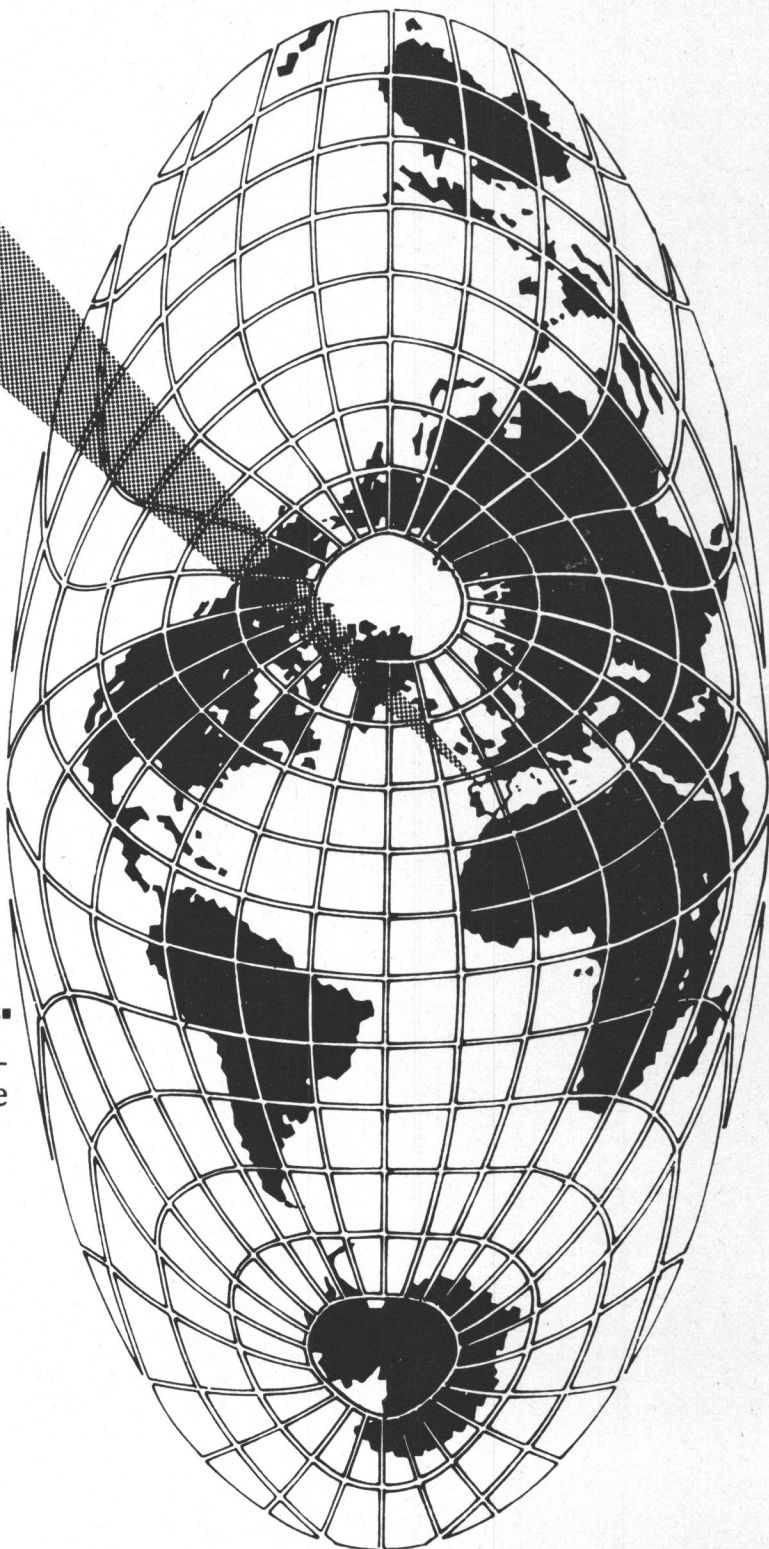
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Soviet Naval Challenge

(Continued from page 10)

not limited to that posed by Yankee class missile boats. The Caribbean is our principal highway for transportation of South American strategic raw materials to this country; it is also the Atlantic approach to the Panama Canal, as well as the route that tankers must traverse to move Venezuelan oil to the United States and Europe.

Those who forever argue against any strengthening of our armed forces to meet Soviet escalation have said: "How can we blame the Russians for the Cienfuegos base if we have Polaris bases in Scotland and Spain?" One answer is that Holy Loch (Scotland) and Rota (Spain) are a thousand miles from the U.S.S.R., while Cienfuegos is but 150 miles from the United States. In 1962, the doves equated our belated response to the Soviet build-up in Cuba to the initial placement of IRBMs (Inter-mediane Range Ballistic Missiles) in that country. They fail to distinguish between the use of force for offensive and defensive purposes.

Of almost equal concern is the Soviet naval build-up in the Mediterranean. The Soviet fleet has port facilities at its disposal in Port Said, Alexandria and Latakia (Syria). It has also made use of facilities in Algeria. Thus far, Soviet fleet activities appear to have primarily political and intelligence objectives. But there are situations where the Soviet fleet could threaten vital communications routes of the three southern flank countries—Greece, Italy and Turkey—which depend on sea routes to carry the great bulk of their imports and exports. The Soviet fleet is in a position to hinder British, French and American submarines and the Sixth Fleet. The presence of landing vessels in the Soviet fleet gives it the capability of carrying out operations which could adversely affect Albania, Yugoslavia, Israel and Lebanon. Finally, increased Soviet activity in the Persian Gulf and in the Middle East oil-producing states, and the presence of the Soviet fleet in the Mediterranean, could be viewed as part of a long-term strategy aimed at establishing a major influence in the oil-producing states.

Soviet activity in the Mediterranean has not been confined to the build-up of a permanent fleet. Soviet technicians and military advisers have been placed in Egypt, Syria, Algeria, and perhaps Libya as well. The post-1967 build-up in Egypt has led to the present crisis, including the Egyptian violations of the cease-fire. The strategic naval base of Mers-el-Kebir could be used by Soviet submarines and naval vessels to track the passage of Western submarines and naval vessels between the western Mediterranean and the Atlantic.

Soviet naval expansion in the Mediterranean is part of a new Soviet global naval strategy, which encompasses the North Atlantic, Caribbean and Indian Oceans and the Persian Gulf. Soviet naval strength has changed in recent years from being primarily a defensive fleet to being a more aggressive one, particularly in view of the greater emphasis on long-range submarines, landing craft and the introduction of helicopter carriers.

Soviet Fleet Admiral Gorshkov said recently: "The pride of our Navy is atomic submarines, which are fitted out with missiles of various purposes which can be launched from under water. The submarines, together with naval missile-carrying and antisubmarine aviation having high-speed, long-range airplanes, are the basis of the striking might of the Navy."

The Soviet challenge is there for all to see. What will our response be?

Third LASH Ship Launched At Avondale



Pictured on the launching platform just before the christening of the S/S LASH Espana are, left to right: Comdr. Steven Lazarus, USN, Director of the Office of Policy and Plans, U.S. Maritime Administration; Mrs. Spyros P. Skouras Sr.; Spyros S. Skouras Jr., president, Prudential-Grace Lines, Inc.; Mrs. Jaime Arguelles, sponsor; His Excellency Jaime Arguelles, Ambassador of Spain to the United States; Mrs. Spyros S. Skouras Jr.; Spyros P. Skouras Sr., chairman of the board, Prudential-Grace Lines, and Mrs. Steven Lazarus, matron of honor.

Traditional ceremonies marked the recent launching of a cargo liner that is far from being a traditional design. She is the S/S LASH Espana, third in a fleet of five LASH vessels planned by Prudential-Grace Lines, Inc. This unusual barge-carrying ship was launched at the Avondale Shipyards in New Orleans, La.

Principal speaker at the launching ceremonies was Comdr. Steven Lazarus, USN, Director of the Office of Policy and Plans, Maritime Administration, who pointed out the significance of productive new cargo liners such as the LASH Espana to the American merchant marine and to the nation itself.

Mrs. Jaime Arguelles, wife of the Ambassador of Spain to the United States, broke the customary bottle of champagne on the bow of the LASH Espana and sent her down the ways in a dramatic side launch into the Mississippi River. Mrs. Steven Lazarus served as matron of honor for Mrs. Arguelles.

Spyros S. Skouras Jr., president and chief executive officer of Prudential-Grace Lines, observed: "The name of our newest LASH ship honors Spain, in whose service Christopher Columbus sailed out and discovered our continent. Over the years, we have enjoyed close social and commercial ties with this proud nation." LASH ships will call at the Spanish ports of Cadiz, Alicante, Valencia and Barcelona, whose principal exports include wines and grapes, citrus fruit, olives and olive oil, cork, tobacco products, textiles, leathers, chemicals and non-ferrous metals.

Cargo versatility, cargo handling speed and a sizeable reduction in ship transit time are key attributes of LASH Espana and her sister ships. Each LASH (for Lighter Aboard Ship) vessel can accommodate 73 specially-designed lighters or 1,500 standard containers, and they can be stowed aboard in a matter of hours rather than days. The LASH system handles shipments of all types and sizes—bulk and baled cargo, pallets, odd-sized lots, vehicles, machinery, heavy lifts, liquids and refrigerated cargoes.

The LASH system will reduce shipping time by as much as 70 percent, and a LASH vessel sailing from the U.S. North Atlantic to the Spanish port of Cadiz requires just 6 days 12 hours.

After final fitting-out and extensive sea trials, LASH Espana will enter Prudential-Grace Lines service in June. She will then join two of her sister ships—LASH Italia, delivered last fall, and LASH Turkiye, slated

for delivery in early spring. Two other sister ships, LASH Hellas and LASH Portugal, are scheduled for future construction at the Avondale Shipyards.

Mrs. Jaime Arguelles, the sponsor of the LASH Espana, is the wife of the Spanish Ambassador to the United States. She is a diplomat in her own right, holding the rank of Minister Plenipotentiary, which entitles her to be appointed an ambassador.

Mrs. Arguelles entered the diplomatic service with the rank of third secretary in 1933, after receiving a law degree from the University of Madrid. For three years she was with the Ministry of Foreign Affairs in Madrid. She served in London from 1944 to 1947.

Since joining MarAd in 1969, Commander Lazarus has been very closely connected with the formulation of President Nixon's maritime revitalization program. He is largely responsible for the many analytical studies influencing the determination of various program provisions. He has been a naval officer since 1953, and while officially on active duty, he is now "on loan" to the Maritime Administration.

Navy Awards Two Contracts To Construct 12 Nuclear Subs For Total Of \$760.6 Million

The Navy launched its new high-speed attack submarine program by awarding construction contracts totaling \$760.6 million to General Dynamics Corporation and to Tenneco Inc.'s Newport News Shipbuilding & Dry Dock Co.

General Dynamics' Electric Boat Division at Groton, Conn., received a multi-year, fixed-price incentive contract with a ceiling price of \$428.1 million to build seven subs. Newport News got two fixed-price incentive contracts, one with an \$83-million ceiling to construct the first or "lead" vessel, the other with a \$249.5-million ceiling to build four additional submarines.

The contracts for the 12 subs are the first construction awards for the so-called 688 class of nuclear-powered attack submarines. They will be designed primarily to hunt and, in the event of war, sink enemy missile-firing and attack submarines.

The 688-class subs, which will be 360 feet long and capable of firing the Mark 48 torpedo at both surface ships and enemy submarines, are in effect a response to the rapid growth of the Russian submarine fleet.

M.A.N.'s Reliability Program: Engine Readings



Reliability analysis must take into consideration the operating conditions of a marine propulsion system. M.A.N.'s reliability programme, therefore, includes the logging of engine readings.

Approx. 40 measuring points on the engine are electronically scanned.

The values measured are automatically registered on punched tape, scanning intervals being variable in accordance with the engine's operating conditions.

Temperatures, pressures, speed, fuel and lube-oil qualities, draught, weather conditions and state of sea, etc. are recorded.

The subsequent evaluation serves to optimize the overall system and streamline maintenance, thus reducing costs to a minimum.

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New Worthington Corp. To Serve Marine And Industrial Markets

The formation of a new corporation, Worthington Marine & Industrial Products, Inc., is announced by Worthington Corporation. The new corporation is a wholly owned subsidiary of Worthington Corporation.

Fenmore E. Dunn has been elected president, Graham Ross is vice

president, and William T. Reidy is treasurer of the new company.

According to Mr. Dunn, Worthington Marine & Industrial Products, Inc. has been formed to better serve its unique markets. Having as its principal products Navy and marine pumps, steam pumps, power pumps, and comminutors, the new corporation will be able to react more rapidly to customer requirements.

In addition to serving the Navy

and marine market, Worthington Marine & Industrial Products, Inc. is involved in the pollution control field supplying comminutors to sewage treatment plants. Power pumps and steam pumps are marketed to a broad range of industries.

The new corporation will conduct all of its operations at its Harrison, N.J. location where complete sales application, engineering, foundry, machine, erection and testing facilities are maintained.

A.T. DeSmedt Joins Prudential-Grace Lines



A.T. DeSmedt

A.T. DeSmedt has joined Prudential-Grace Lines as executive vice president, it was announced by Spyros S. Skouras Jr., president and chief executive officer of Prudential-Grace.

Mr. DeSmedt began his career in ocean freight transportation in 1937 as a clerk in United States Lines. He has held executive positions dealing with many phases of the industry, most recently serving as president and chief executive officer of Isthmian Lines, Inc., a post which he resigned at the end of 1970.

Active in most of the associations which serve the transportation industry, Mr. DeSmedt is currently president of the U.S. Chapter of the International Cargo Handling Cooperative Association, a member of the Transportation Policy Council of Northwestern University, a national vice president of the National Defense Transportation Association, and a director of the Commerce and Industry Association of New York.

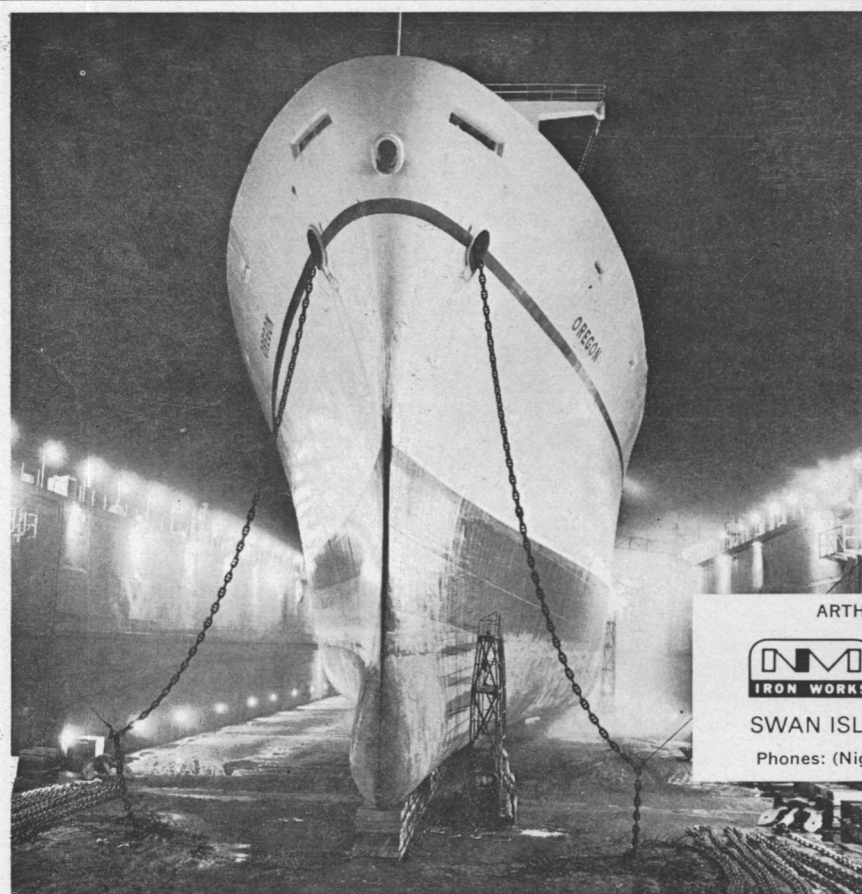
W.F. Glaser Joins Raytheon Company

William F. Glaser has joined Raytheon Company as marketing manager of the new Manchester Operation at Manchester, N.H.

The operation produces a full line of marine electronic products for pleasure boats and commercial vessels, precision electronic welders, ultrasonic machining tools and Sorensen power supplies.

For the past 12 years, Mr. Glaser has worked in consumer electronics with H.H. Scott, Inc., a manufacturer of high fidelity components. He served most recently as vice president, marketing. Prior to this, he was general manager of the Scott Instrument Division, which manufactures precision sound measuring and analysis instrumentation for laboratory use. He has been a director of the Institute for High Fidelity, a lecturer on finance and marketing at the American Management Association, and a consultant on sales promotion programs for the Electronic Representatives Association.

Mr. Glaser received his B.S. degree in management engineering from Rensselaer Polytechnic Institute in 1953 and his M.S. degree from the Sloan School of the Massachusetts Institute of Technology in 1957.



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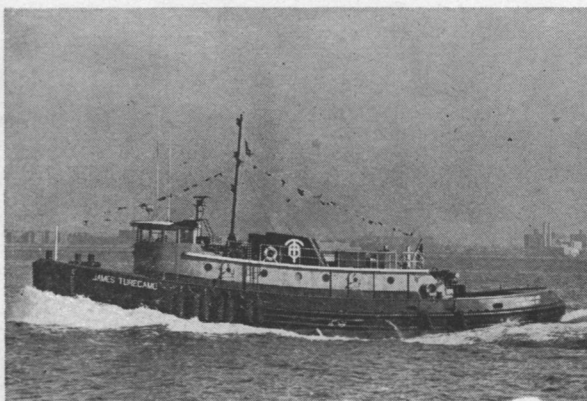
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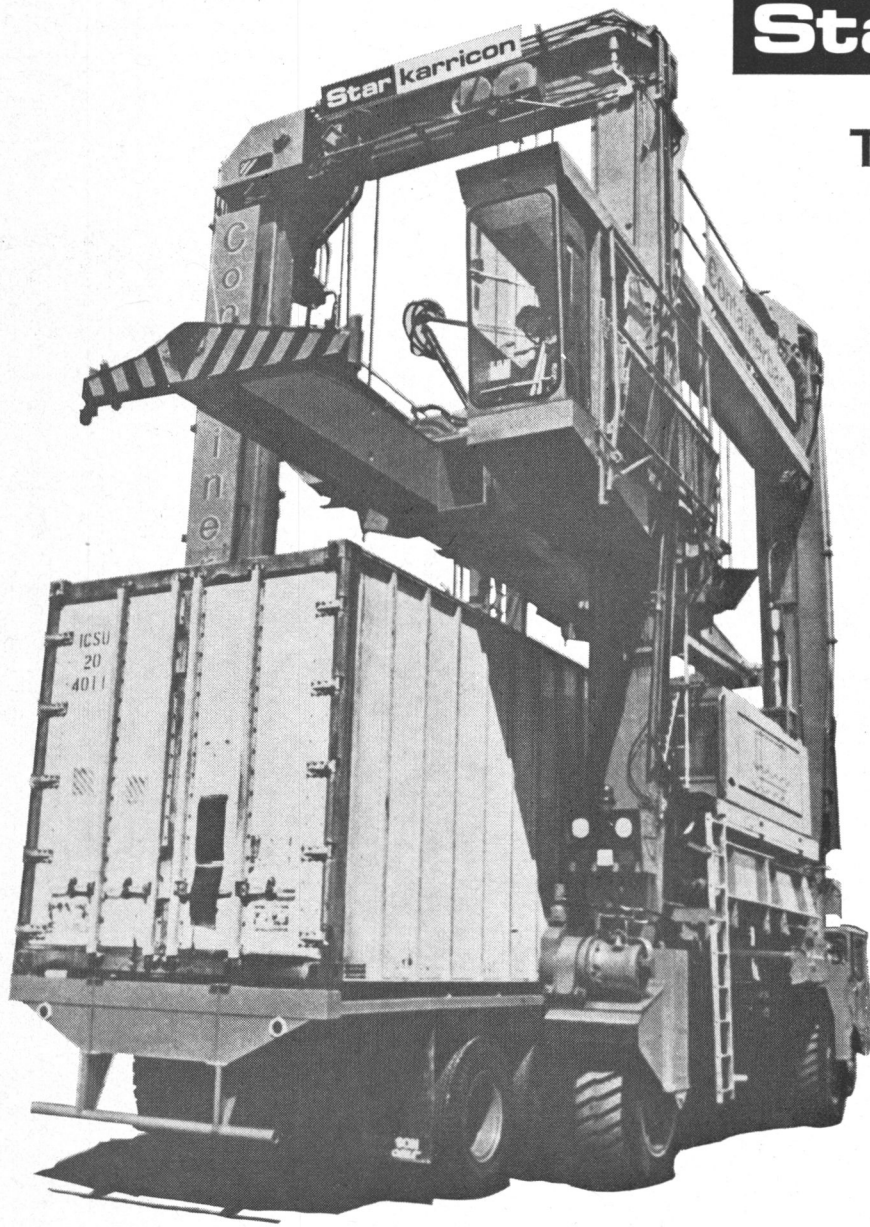
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GE Gas Turbine Engines To Power Navy Destroyers

The General Electric Company, Evandale, Ohio, has been awarded a multi-year subcontract with a potential value of \$130 million by Litton Industries to provide high performance marine gas turbine engines for 30 U.S. Navy Spruance-class destroyers. This initial award covers the engines for the first three ships funded to date and totals \$31.3 million.

The award was announced by **Ellis B. Gardner**, Litton senior vice president, who stated: "This is the largest of several major subcontracts to be awarded on this important national defense effort to produce these advanced multi-mission U.S. Navy destroyers. It is one of the many substantial contracts that will be awarded in the months ahead to hundreds of companies throughout the United States. Contracts worth more than 56 percent of the

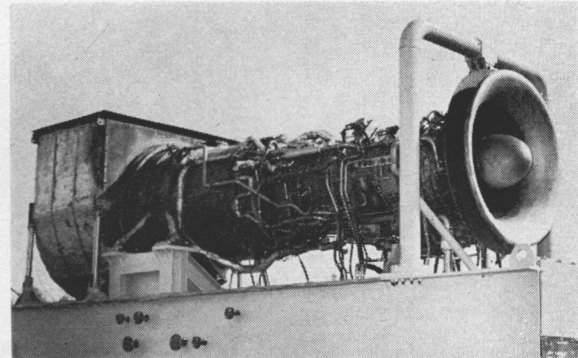
dollar value of each ship will be granted for the purchase of components, systems, and materials."

Litton recently received a multi-year contract from the U.S. Navy to produce 30 of these advanced destroyers. The total ceiling price under the contract for all 30 ships is \$2.14 billion. Three ships were initially funded by 1970 appropriations providing for a ceiling of \$214 million. For fiscal year 1971, \$506.8 million has been approved by Congress to build six additional ships. The contract provides for funding the ships in five consecutive procurement increments, each subject to Congressional approval, from FY 1970 through 1974.

These Spruance-class destroyers will be the first major U.S. Navy combatant ships to use marine gas turbine power plants for main propulsion systems. The first ship, the DD-963, is scheduled for delivery in 1974. The new class

is named after the late **Adm. Raymond A. Spruance**, who led Navy forces in the historic victory at Midway in World War II.

Each destroyer will be powered by four LM2500 gas turbine engines. This unit is a compact gas turbine combining high component efficiency and increased operating temperatures to produce low operating costs and high performance, and is rated in the 20,000 horsepower class. Gas turbine systems were selected by Litton after comparative life cycle cost analysis studies. The marine gas turbine has a rapid cold-plant start-up capability and is combined with controllable pitch propellers for improved ship maneuverability.

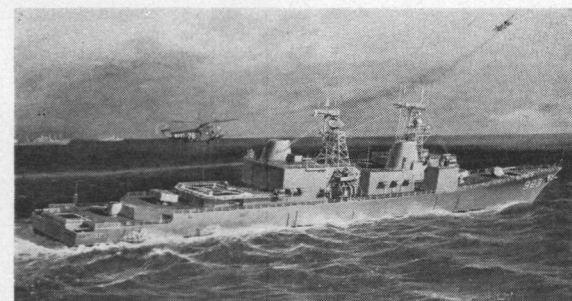


The General Electric LM2500, a compact, high performance, 20,000-hp class marine gas turbine engine, has been selected by Litton Industries to power the Navy's new Spruance-class destroyers. Four LM2500 turbines will power each Spruance-class destroyer, the first major warship in the U.S. Navy to use marine gas turbines for propulsion.

The performance capability of the General Electric LM2500 marine gas turbine engine to be used on these destroyers has already been demonstrated in more than 5,000 hours of operation at sea aboard the all-gas turbine-powered ship, the Admiral William M. Callaghan. The Callaghan is a commercial transport in operation under contract to the Military Sealift Command.

The Spruance-class, the first general purpose destroyer production program since the late 1950s, will be the backbone of the U.S. Navy's destroyer forces in the 1970s and beyond. The primary mission of these ships is antisubmarine warfare, including operations as an integral part of Carrier Task Forces. The destroyers were designed by Litton Ship Systems' advanced marine technology center at Culver City, Calif. The ships will be series-produced in Litton Ship Systems' new mechanized ship manufacturing facility at Pascagoula, Miss. The new ship production plant, one of the most advanced in the world, will manufacture the destroyers using advanced modular techniques.

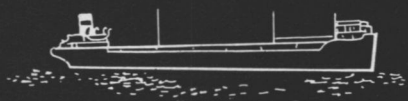
Litton Industries, headquartered in Beverly Hills, Calif., is a major multinational corporation specializing in products, systems and services for business, defense, marine, industrial, and professional markets.



Artist's drawing of the Navy's new Spruance-class destroyer. These innovative and highly-automated vessels will be complex weapon systems incorporating missiles, rocket-assisted torpedoes, electronic warfare equipment, automated gunfire control equipment, multipurpose helicopters and a wide range of ship support systems. Anti-submarine warfare is the primary mission of the new vessels, but they can also carry out naval gunfire missions in support of amphibious assault and land forces.

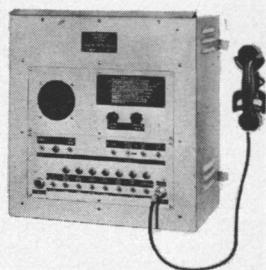
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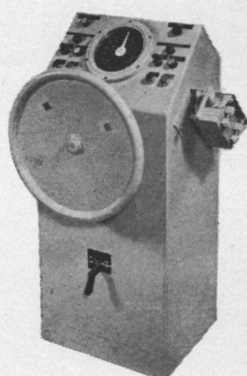


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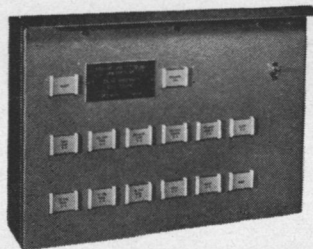
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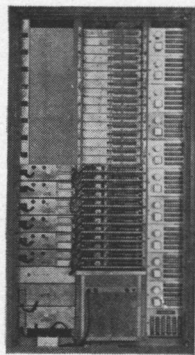
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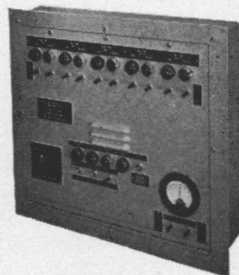
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National Propeller Club Executive Committee Named

The National Executive Committee of The Propeller Club of the United States held its first meeting of the year on January 6, 1971, at the Whitehall Club in New York City. Along with the normal routine measures taken up, the committee considered positions relating to the new maritime program, lease financing and multilateral United States aid through world institutions. Planning measures for the 1971 Convention at Tulsa, Okla., October 13-15, were also discussed.

In making this announcement, The Propeller Club national president, **Arthur E. Farr**, vice president of Northwest Marine Iron Works in Portland, Ore., released a listing of the 1970-71 National Executive Committee which has just been formed, and said: "These gentlemen represent and are prominent in every facet of the American merchant marine industry and its associated and allied industries. We are indebted to them for serving on the committee to assist me in the plans and management of The Propeller Club."

The committee is as follows: **Arthur E. Farr**, chairman and national president, vice president Northwest Marine Iron Works, Portland, Ore.; Vice Adm. **Paul E. Trimble**, USCG (ret.), second vice president, president Lake Carriers' Association, Cleveland, Ohio; Capt. **Alfred R. Philbrick Jr.**, vice president for student ports, executive officer Texas Maritime Academy, Galveston, Texas; **Jasper S. Baker**, vice chairman and national first vice president, director Government relations United Fruit Company, Washington, D.C.; **Jacques Cunningham**, third vice president, vice president Public Service Company of Oklahoma, Tulsa, Okla.; **Alfred C. Filiatrault Jr.**, secretary-treasurer, The Propeller Club of the United States, New York, N.Y.; **Joseph G. Barkan**, president American Export Isbrandtsen Lines, Inc., New York, N.Y.; **Floyd H. Blaske**, president American Commercial Barge Line Co., Jeffersonville, Ind.; **George H. Blohm**, president Cities Service Tanker Corp., New York, N.Y.; **Braxton B. Carr**, president The American Waterways Operators, Inc., Washington, D.C.; **Earl W. Clark**, co-director Labor-Management Maritime Committee, Washington, D.C.; **Harland R. DeWitt**, manager marine department, Esso International, Inc., New York, N.Y.; **Richard P. Eide**, vice president The Cleveland Cliffs Steamship Co., Cleveland, Ohio; **William E. Fogarty**, manager marine department, Foster Wheeler Corporation, Livingston, N.J.; **John T. Gilbride**, president Todd Shipyards Corporation, New York, N.Y.; **George J. Gmelch**, vice president Pacific Far East Line, Inc., San Francisco, Calif.; Vice Adm. **Arthur R. Gralla**, USN, Commander Military Sealift Command, Washington, D.C.; **Edward J. Heine Jr.**, president United States Lines, Inc., New York, N.Y.; **Edwin M. Hood**, president Shipbuilders Council of America, Washington, D.C.; **Harry D. Hunter**, vice president Delta Steamship Lines, Inc., New York, N.Y.; **John S. Jacox**, manager Eastern Marine Zone, Westinghouse Electric Corp., New York, N.Y.; **Ralph A. Leavitt**, chairman Chase, Leavitt & Company, Portland, Maine; **C.M. Lynch**, manager marine operations, Atlantic Richfield Company, Philadelphia, Pa.; **William T. Moore**, chairman Moore-McCormack Lines, Inc., New York, N.Y.; **W.T. Morris**, vice president Lykes Bros. Steamship Company, New York, N.Y.; **Ross E. Mortimer**, executive vice president The Great Lakes Towing Company, Cleveland, Ohio; **John M. Murphy**, vice president National Steel & Shipbuilding Co., San Diego, Calif.; **James J. Reynolds**, president American Insti-

tute of Merchant Shipping, Washington, D.C.; **Joseph L. Roth**, partner Price Waterhouse Company, New York, N.Y.; **William O. Savage**, president Savage Shipping Company, Tampa, Fla.; **Spyros S. Skouras**, president Prudential-Grace Lines Inc., New York, N.Y.; **Thomas J. Smith**, president Farrell Lines, Inc., New York, N.Y.; **W. Tilford Smith**, senior vice president Newport News Shipbuilding & Dry Dock Co., Newport News, Va.; **Thomas E. Stakem**, counsel Macleay, Lynch, Bernhard & Gregg, Washington, D.C.; **Edward D. Vickery**, attorney Royston, Rayzor and Cook, Houston, Texas; **Walter E. Williams**, vice president shipbuilding division, Bethlehem Steel Corporation, New York, N.Y.; **C.W. Wilson**, manager marine sales, Babcock & Wilcox Company, New York, N.Y., and **William J. Wolter**, president Cairo Marine Service, Inc., Cairo, Ill.

Levingston Awarded Drilling Barge Contract

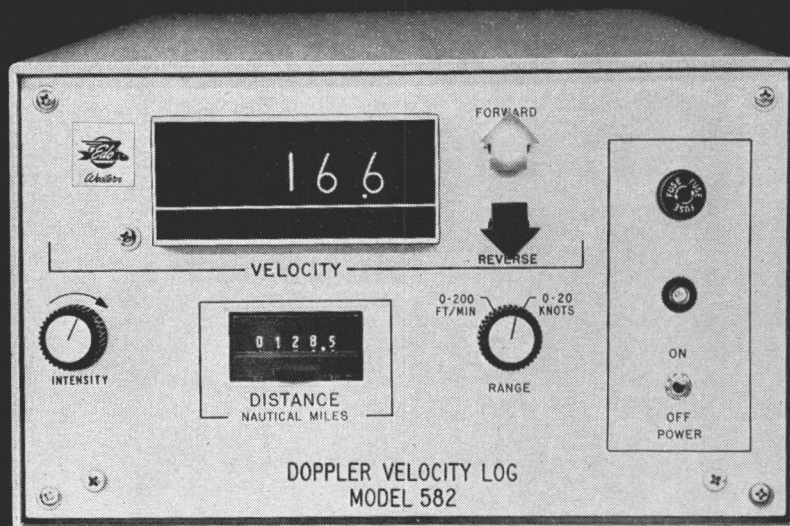
Santa Fe Drilling Company, Los Angeles, Calif., has awarded a contract for construction of two Lake Maracaibo type drilling barges to Levingston Shipbuilding Co., Orange, Texas.

Santa Fe will use the barges to fulfill a two-year contract awarded to Santa Fe Drilling Company of Venezuela, C.A., for development drilling in Lake Maracaibo.

The first barge is expected to be on location and drilling by the end of May and the second by July 15.

The barges will be 180 feet long and 70 feet wide, with a hull depth of 11 feet 3 inches. Each will have a substructure cantilevered over the stern to support the drilling equipment. Each will be equipped with an 8,000-foot diesel electric drilling rig.

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D.A. Groh Elected Vice President Of Pickands Mather

David A. Groh has been elected a vice president of Pickands Mather & Co., a unit of Diamond Shamrock Corporation. Mr. Groh, who has served as manager of the Marine Division since 1968, will continue to be responsible for fleet operations of Pickands Mather's Interlake Steamship Co. Division

and of Labrador Steamship Company, Ltd., a Canadian subsidiary.

A native of Port Huron, Mich., Mr. Groh received a B.S. degree in naval architecture and marine engineering from the University of Michigan. He joined Pickands Mather's Marine Division as assistant to the superintendent of vessel properties in 1948, later became assistant manager, planning, and in 1965, was named associate manager.

Mr. Groh is a trustee of the Lake Carriers Association and chairman of its fleet engineers committee. He is a member of the American Bureau of Shipping's Great Lakes technical committee, The Society of Naval Architects and Marine Engineers' committee on wave loads for Great Lakes vessels, and a joint technical committee for the study of load lines, which is co-sponsored by the U.S. and Canadian Governments. In addition, he

is a member of the board of trustees of the Great Lakes Historical Society.

President Appoints Adm. Mumma To Head Shipbuilding Panel



Adm. Albert G. Mumma

Adm. Albert G. Mumma, USN (Ret.) of Short Hills, N.J., chairman of the Worthington Corporation, has been appointed by President Nixon as chairman of the Commission on American Shipbuilding.

Six other persons were appointed members of the commission, which was established to study problems of the shipbuilding industry in the United States.

They are Stanley Powell Jr. of San Anselmo, Calif., a private consultant and former president of the Matson Navigation Company; Arthur M. Becker of Bethesda, Md., a partner in the law firm of Mudge, Rose, Guthrie & Alexander; Charles A. Black of San Mateo, Calif., national secretary-treasurer of the National Marine Engineers Beneficial Association; W.H. Krome George of Sewickley, Pa., president and director of the Aluminum Company of America; Andrew E. Gibson, Assistant Secretary of Commerce, and John T. Gilbride of Greenwich, Conn., president of Todd Shipyards.

Mowbray Announces Affiliation With T.M.T.

J.A. Mowbray Jr., president of Mowbray Marine Enterprises of New York, has announced his company's affiliation with T.M.T. (Thompson - Mowbray - Templet) Shipping and Chartering, Inc. of Houston, Texas, with offices in the Petroleum Building.

The principals involved are F. Thompson and J. Templet, formerly of C.J. Thibodeaux and Co. of Houston. The new firm will specialize in the chartering and the purchase and sale of commercial floating equipment in the U.S. Gulf, as the Mowbray organization has done in New York for over 20 years.

Michael Kelly recently joined Mowbray and initiated their cargo chartering department. This department will now be extended and implemented in Houston offering the marine field, particularly the offshore oil industry, complete cargo chartering, as well as purchase and sales services throughout the world.

Hoffman's added a 250 ton mobile truck crane to its fleet to help you turn your ships around quicker.

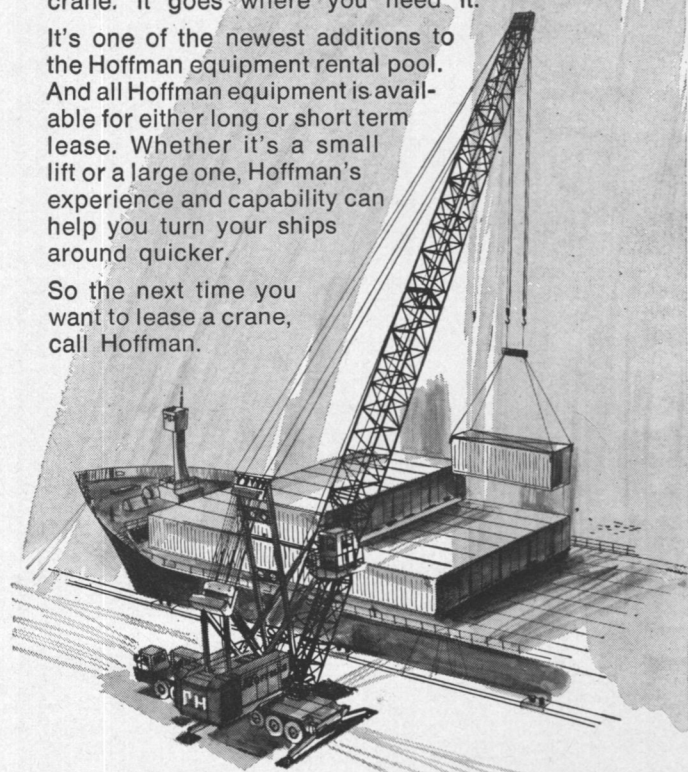
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It's been especially designed to handle all kinds of cargo loads or discharges... balanced or unbalanced, containerized or bulk cargo, dockside or off-shore. The operator's cabin has been elevated, so he can look right into the hatch and not guess the location. And best of all it's a Hoffman mobile heavy-lift truck crane. It goes where you need it.

It's one of the newest additions to the Hoffman equipment rental pool. And all Hoffman equipment is available for either long or short term lease. Whether it's a small lift or a large one, Hoffman's experience and capability can help you turn your ships around quicker.

So the next time you want to lease a crane, call Hoffman.



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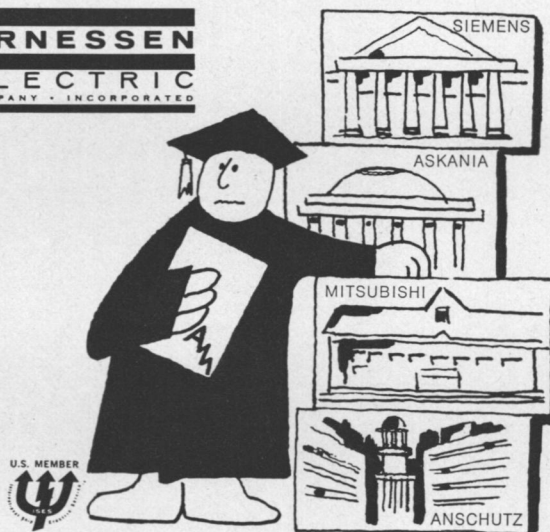
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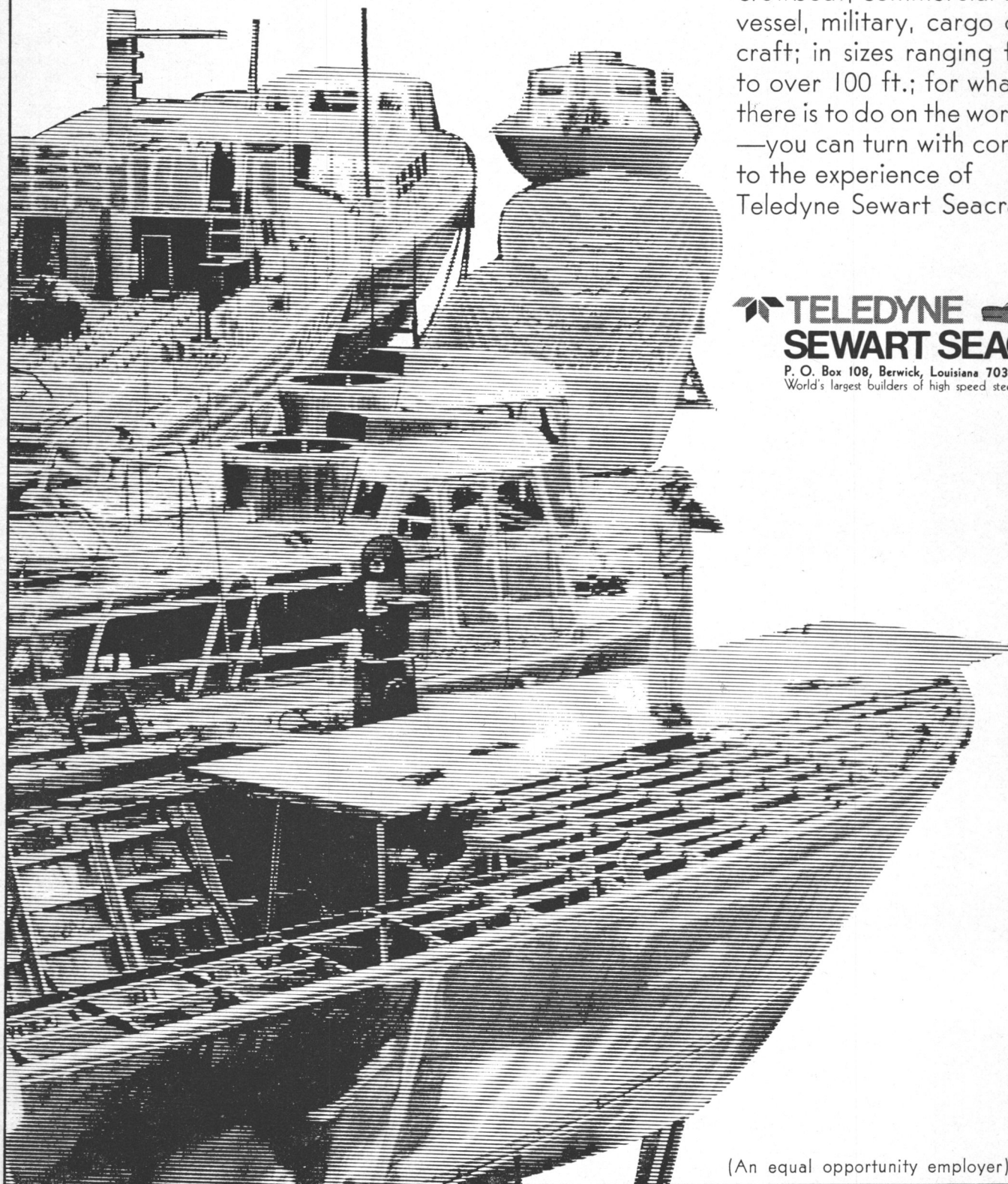
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New Name And Symbol Created For Largest Canadian Towing Fleet

A new name and symbol have been created for the organization managing the combined operations of Island Tug & Barge Limited and Vancouver Tug. The two large towing companies integrated their fleets, personnel, and other facilities in November of last year. The name now chosen for the inte-

grated management is Seaspan International Ltd. The new symbol is a stylized seahorse within a pennant spelling out the "S" in "Seaspan."

While the Island Tug and Vancouver Tug fleets continue to function under their own colors, Seaspan's name and symbol will begin to be seen along the coast of the Pacific Northwest, and in other parts of the world in the near future.

A directory of the new management team assembled to supervise the activities of more than one thousand employees also presents the new name and symbol for the first time, and makes reference to "a lot of innovative ideas for the future." As indicated by its name, the new organization is set up to operate not only in Canada, but in other parts of the world. Island Tug and Vancouver Tug

crews at sea will learn of the new name by radiotelephone.

The directory contains a personnel roster listing the names of executives and department heads. Among these are: **Arthur B. Elworthy**, chairman of the board; **J.C.F. Stewart**, president; **J.R.A. Lindsay**, vice president-operations; **D.B. Elworthy**, vice president-marketing; **John F. Pearson**, treasurer; **Edward Judd**, secretary-controller, and **J.S. Heyrman**, assistant to the president.

J.P. O'Toole Assumes New Post At Quincy



Joseph P. O'Toole

Veteran shipbuilder **Joseph P. O'Toole**, who began his career as an apprentice, has been named manager of steel trades at the Quincy Shipbuilding Division of General Dynamics. The appointment was announced by operations director **Frank Horan**, who said Mr. O'Toole will be responsible for all steel fabrication, assembly and erection in the shipyard.

Mr. O'Toole was a general superintendent prior to the appointment. In 1965, he transferred to Quincy from the corporation's Electric Boat Division, Groton, Conn., as assistant to the works manager. He later served as ship manager for construction and testing of the nuclear attack submarines *Whale*, *Gato*, and *Sunfish*.

Mr. O'Toole started his shipbuilding training as an apprentice, and then studied civil engineering at Northeastern University under the company cooperative program, and graduated with a bachelor's degree in 1964.

Blue Water Marine Named Distributors For Iver C. Weilbach

Blue Water Marine Supply, Inc. has been named exclusive United States distributors for **Iver C. Weilbach & Co.** of Copenhagen, Denmark. The Danish manufacturing firm makes ships clocks and navigation instruments used on commercial vessels, yachts and pleasure boats.

In announcing availability of the Weilbach line, Blue Water vice president **L.L. Moncus** said the Danish firm, founded in 1755, offers "the most complete line of navigation instruments we have seen." Blue Water Marine supply is a Houston-headquartered firm located at 1000 Broadway at Channelside.

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- NEW YORK OFFICE: 29 Broadway, New York, N.Y. 10006, U.S.A. (Cable: NYKAWASAKI NEWYORK, Telex No. 420-293)

General Electric Names Ridgway To New Post



Whitman Ridgway

The General Electric Company, Schenectady, N.Y. has appointed **Whitman Ridgway** as deputy division general manager, Gas Turbine Operations. Mr. **Ridgway** was general manager of the gas turbine department from 1966 until his present appointment.

The announcement, which was made by Dr. **Thomas O. Paine**, GE's vice president and group executive, power generation, indicates the growth of the gas turbine market, which quadrupled in the 1965-70 period.

Gas Turbine Operations, headquartered in Schenectady, recently received the largest single order on record for gas turbines—12 heavy duty units for the Tennessee Valley Authority (TVA).

Mr. **Ridgway** has been with GE since 1940, with the exception of military duty during World War II. He holds B.S. and M.S. degrees in electrical engineering from Princeton University.

Pancontinental Marine U.S. General Agents For Sanyo Marine-Kobe

The appointment of Pancontinental Marine, Inc., 50 Broadway, New York, N.Y., as U.S. general agents for the ship repairs company Sanyo Marine Industry Company Ltd., Kobe, Japan, has been announced by **J.R. Kirsten**, president of Pancontinental. Sanyo Marine effects all types of ship repairs at any port in Japan.

Maritime College Will Hold One-Day Seminar On Maritime Law

The State University of New York Maritime College will again offer a one-day off-campus seminar on maritime law, Rear Adm. **Edward J. O'Donnell**, USN (ret.), president of the college, has announced. The seminar has been scheduled for Wednesday, February 10, in the Seamen's Church Institute, 15 State Street, New York, N.Y.

This one-day seminar—8:30 a.m. to 5 p.m.—will be held under the sponsorship of the Maritime College's Office for Continuing Education, and it provides a non-credit general orientation in maritime law, Admiral **O'Donnell** explained. Among the topics to be included are courts, jurisdiction, procedures, territorial and national waters, ves-

sels on the high seas, charters, liens, collision, and personal injury, he stated.

The lecturers for the seminar, both of whom are eminently qualified on the subject, are Capt. **John C. Hart**, who lectures on admiralty law at the Maritime College, and his brother, **Robert P. Hart**, a member of the New York law firm of Kirlin, Campbell and Keating.

The one-day law seminar was introduced a year ago and was well

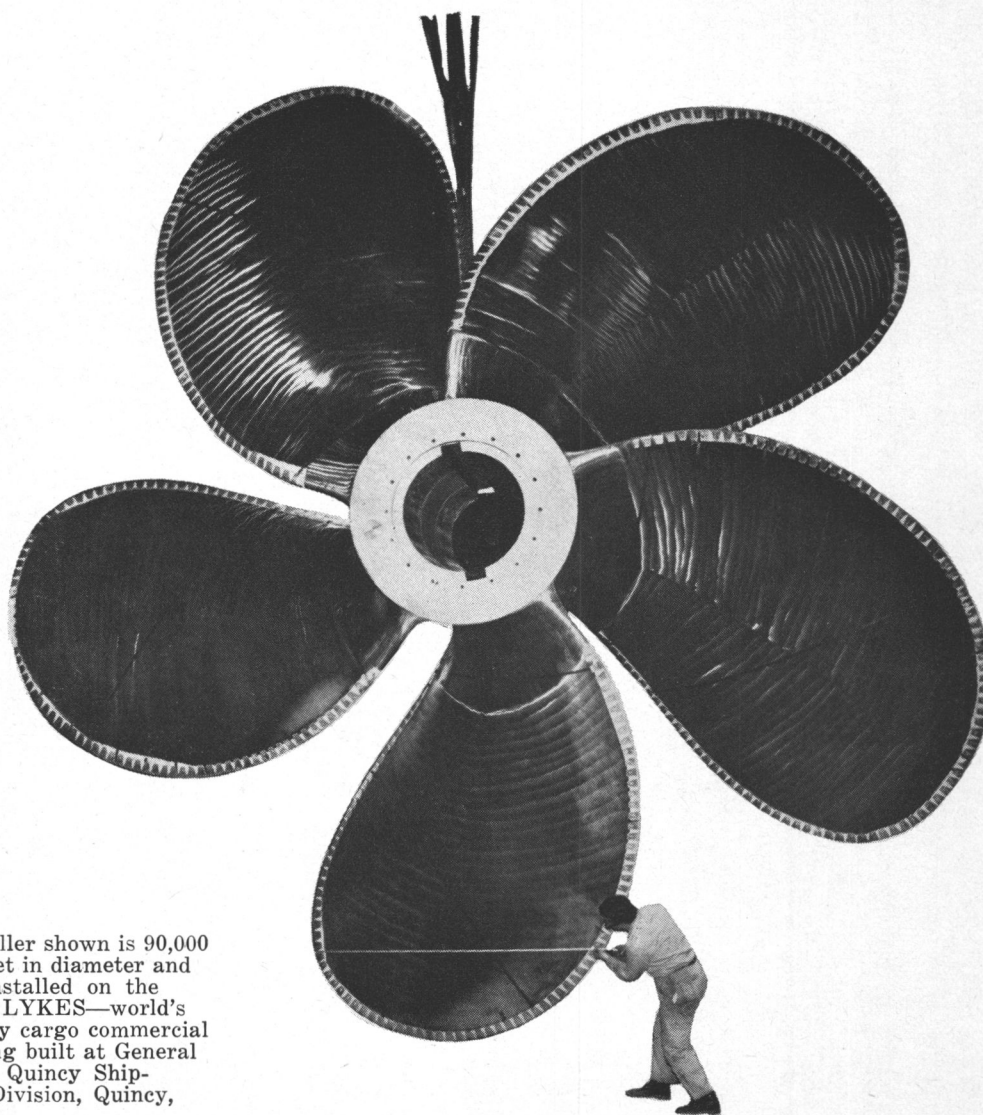
received throughout the maritime industry, warranting repetition. The seminar has particular value to employees at the training level, it was emphasized.

"Maritime Law" is presented in a 10-week, non-credit evening lecture series which the Maritime College will conduct commencing February 22, and will also be held at the Seamen's Church Institute. However, these lectures are held but once a week and the time ele-

ment involved sometimes presents a problem for the student. The seminar, on the other hand, covers the same material in capsulized form on an intensive basis.

Registration forms can be obtained at the Seamen's Church Institute or by request to the Office for Continuing Education, State University of New York Maritime College, Fort Schuyler, Bronx, N.Y. 10465, telephone (212) 892-3000.

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the nation's largest ship owners and operators for over three quarters of a century. Ferguson skill will insure good-as-new quality in a reconditioned wheel at a fraction of the replacement cost.

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DIVISION OF COLUMBIAN BRONZE CORP.

New Ferryboats For Hatteras Inlet From Coast Engineering Company Design



One of six new ferryboats for service from Hatteras Island to Ocracoke Island recently completed by the New Bern Shipyard for the North Carolina State Highway Commission.

The Coast Engineering Company, Norfolk, Va., announces the completion of six new ferryboats for the North Carolina State Highway Commission.

These ferries are specially designed for use at Hatteras Inlet, where the water is rough and the minimum channel depth can vary from 4 feet to 8 feet in one day's time. They provide service from Hatteras Island to Ocracoke Island on the Outer Banks. Traffic over this route was over 150,000 vehicles and 500,000 passengers in 1970. There is no toll charge on these vessels.

The ferries have the following particulars: length, 122 feet; breadth (over deck), 40 feet; depth, 8 feet; maximum draft, 3 feet; cruising speed, 11 knots, and capacity, 24 autos, 250 passengers.

The vessels are single-deck triple-screw all-steel ferries propelled from the after end. The hold

compartments, with the exception of the engine room, are watertight voids.

The main engines are three General Motors Model 6/71 series E, turbo-charged diesel engines, equipped with 3:1 reduction gears driving 38-inch by 28-inch four-blade propellers in tunnels. Electric power is provided by two Delco 20-kw 120/240-volt generators driven by General Motors Model 2/71 diesel engines.

The steering gear is hydraulic with manual emergency operation.

There is no vibration in the vessels at any speed or depth of water.

The vessels were designed and construction supervised by Coast Engineering Company, design agents for the State Highway Commission. The builder is New Bern Shipyards, Inc., New Bern, N.C. All six vessels were delivered less than 12 months after construction was commenced.

Nippon Kokan Names Kiyokatsu Hanita



Kiyokatsu Hanita

Kiyokatsu Hanita, executive director of the shipbuilding division of NKK (Nippon Kokan), has been named a senior managing director of the company.

Mr. Hanita was elected to the company's board of directors in May 1964 and was appointed a managing director in May 1967. In addition to responsibility for the shipbuilding division, he supervises the firm's London and Hong Kong offices, which are primarily engaged in shipbuilding business. He is also in charge of NKK's machinery and materials purchasing department.

Joining NKK in August 1958, Mr. Hanita was appointed assistant general yard manager of Tsurumi Shipyard, near Tokyo, in February 1960, general manager of the company's shipbuilding business department in December 1961, and general manager of the shipbuilding department in March 1964.

Mr. Hanita graduated from the engineering department at Tokyo Imperial University, presently Tokyo University, in March 1935.

Gunderson To Build 160,000-Bbl. Oil Barge For Crowley Launch

An order for a 160,000-barrel-capacity multi-purpose oil barge, the largest to be built in Portland, Ore., has been placed with Gunderson, Inc., according to William R. Galbraith, vice president for sales of the Portland firm. The giant vessel, to be known as Barge 103, will measure 430 feet by 80 feet by 27 feet. It will be used for multiple petroleum product service by the owners, Crowley Launch and Tugboat Company of San Francisco.

Altogether, 2,850 tons of steel and 115,000 man hours of labor will be involved in the fabrication of the tank barge, Mr. Galbraith stated. The keel was laid late last month, and the barge will be ready for launching June 1 of this year.

Mr. Galbraith pointed out that the lower wage structure of yards in the Gulf area resulted in highly competitive bidding for the job. The effect of bringing the order to Portland will be the substantial re-employment of the labor force at Gunderson, Inc.

Fabrication of ocean-rated barges by Gunderson, Inc., for the San Francisco-based firm began in 1968. In 1970 twin barges, the

Agattu and the Kiska, 400-feet in length, were built for Crowley at Gunderson's Portland facility. Gunderson, Inc. is a subsidiary of FMC Corporation, San Jose, Calif.

International Red Hand Appoints C.A. Narwicz



Charles A. Narwicz

International Red Hand Marine Coatings' president, Thomas M. Reinhardt, has announced the appointment of Charles A. Narwicz as assistant East Coast sales manager of the company.

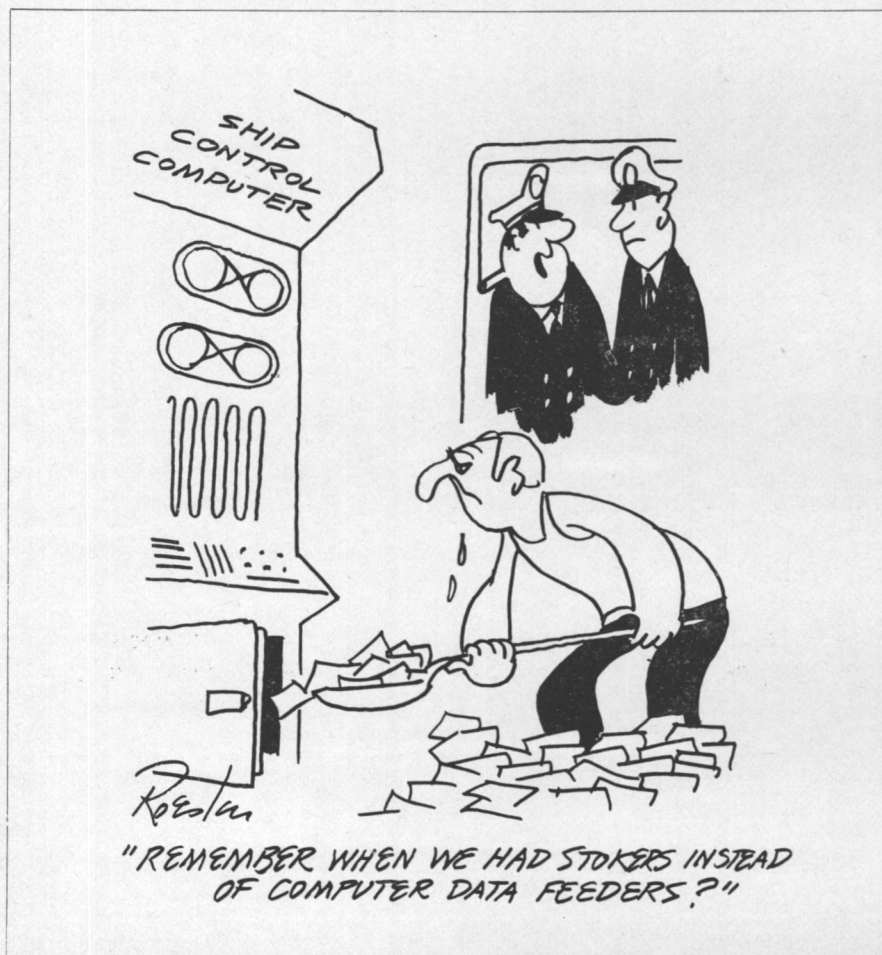
Mr. Reinhardt said that Mr. Narwicz would work with the International Red Hand sales and service team in helping to meet new requirements of today's shipowners for coatings that insure the kind of corrosion protection and hull resistance necessary with today's modern developments, such as fast turnaround in port and the extended period between dry-dockings.

Mr. Narwicz brings with him over 20 years of experience in marine transportation systems, including operation, design, manufacture and marketing. He has recently served as project manager in a study for the U.S. Maritime Administration on the manning of merchant ships. He is past chairman of the New York Section of SNAME, and is a member of its application committee and reliability-maintainability-panel.

He is a past vice president of the U.S. Merchant Marine Academy Alumni Association and a member of the American Society of Naval Engineers. Mr. Narwicz is also a commander in the Naval Reserve, and a member of The Propeller Club and The Hague Post of the American Legion.



FOR CUNARD HELP: Capt. F.L. Slattery, USN, Commander of the U.S. Naval Oceanographic Office, is shown above presenting a Naval Oceanographic Office plaque to C.S. Dickson, vice president of the Cunard Steamship Lines, at New York City, in a expression of official appreciation to the Cunard Lines for helping the ocean charting and research agency "amass a unique body of information" of the Gulf Stream and its related eddies, meanders, and countercurrents.



"REMEMBER WHEN WE HAD STOKERS INSTEAD OF COMPUTER DATA FEEDERS?"

Mobil Oil Names Everett S. Checket



Everett S. Checket

Everett S. Checket, Mobil Oil Corporation's vice president of marine transportation and marine sales, has been named president of a new regional service company. The new company, Mobil South, Inc., will be established in the international division effective July 1.

Mobil South will consolidate the major operations of two service companies, Mobil Mediterranean and Africa, Inc., with headquarters in Paris, and Mobil Latin America Inc., based in New York.

Mr. Checket became general manager of marine transportation in 1966, and his responsibilities were enlarged to include marine sales in 1969. He was elected a vice president of the corporation in July 1969.

Kawasaki To Build \$26 Million Tanker For Gotaas-Larsen

Gotaas-Larsen, the ocean shipping subsidiary of International Utilities based in Philadelphia, has ordered a 216,000-dwt tanker from Japan. The parent company reported that the \$26-million vessel will be built by Kawasaki Heavy Industries Ltd. for delivery in the early part of 1974.

Gotaas-Larsen president H. Ir- gens Larsen said that Kawasaki is now building four other giant tankers for the company, which has an option to build another one of some 280,000 tons.

Gotaas-Larsen operates 49 ships of some 3.3 million deadweight tons.

Newport Ship Yard, Inc. To Convert YSD-22

The U.S. Army Corps of Engineers, Philadelphia District, recently announced the award of a major ship conversion contract to the Newport Ship Yard, Inc., Newport, R.I. According to Neil C. Peirson, president of the 136-year-old firm, the value of the contract, when completed, will exceed one-million dollars. It is presently anticipated that the job will be finished sometime in October 1971.

The project provides for the conversion of a U.S. sea plane wrecking derrick, the YSD-22, originally used for salvage work, to a side casting dredge. The YSD-22 was

built in 1941 at the Boston Naval Ship Yard, and served during World War II to salvage U.S. Navy planes damaged in combat at sea. It was a self-propelled ship and carried a crew including divers to handle underwater salvage operations. When the war ended, the YSD-22 was deactivated and moth-balled in Wilmington, Del.

From this original sea plane wrecking derrick, the Army Corps of Engineers has developed con-

version plans for a side casting dredge, which, when completed, will operate under the jurisdiction of the Philadelphia District. This vessel will dredge by suction and will be able to open up a channel approximately 34-feet wide and up to 20-feet deep. The dredged fill is then either pumped into barges or instead, can be sprayed under pressure off to the side far enough away from the new channel to avoid filling back in.

When completed, the vessel is to be renamed the Raymond J. Fry, after an official formerly with the Civil Works Division, Office of the Chief of Engineers, Washington, D.C.

The Philadelphia Office of the Corps of Engineers have advised that the primary job of the Raymond J. Fry will be to keep the inlets along the New Jersey and New England coasts open for both fishing vessels and pleasure yachts.



4 Big Reasons for Using TRO-MAR SR when Burning Heavy Fuel in Trunk Piston Engines.

System oil contamination is a constant threat in trunk type engines, especially when burning heavy fuel. The higher sulphur and ash content of this fuel produces residue and acids that enter the crankcase. Wear debris and blow-by gases, including water vapor, add to the problem.

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4. Long intervals between engine overhauls — as much as 19,000 hours with performance still satisfactory.

Extensive shipboard experience confirms that Tro-Mar SR 30 and SR 40 are excellent oils for medium-speed trunk engines burning residual fuel. Available worldwide, they assure reliable and economic operation in the most severe applications.

Your local Essomarine representative has a 12-page booklet of detailed performance data about the Tro-Mar SR products. Call for your copy now.



FUELS AND LUBRICANTS

World-Wide Launches 49,300-Ton LPG Ship

The World-Wide Shipping Group of Hong Kong, headed by Y.K. Pao, enters a new field of cargo carriage with a 49,300-dwt liquefied petroleum gas carrier, World Bridgestone, which was launched for the Group at the Kobe Shipyard of Kawasaki Heavy Industries Ltd. in a gala ceremony. The vessel was sponsored by Mrs.

Curran, wife of M. Curran, deputy chairman of the Hong Kong and Shanghai Banking Corporation.

The carrier is a single-screw diesel-driven vessel designed to carry liquefied commercial grade propane and/or butane from the Persian Gulf to Japan. She is of all-welded construction with raked stem, large bulbous bow and cruiser stern. The propulsive machinery, together with accommodation for a complement of 39, is all arranged aft.

The main engine, a Kawasaki M.A.N. K82 78/155 E type, gives the vessel a speed of 15½ knots in loaded condition.

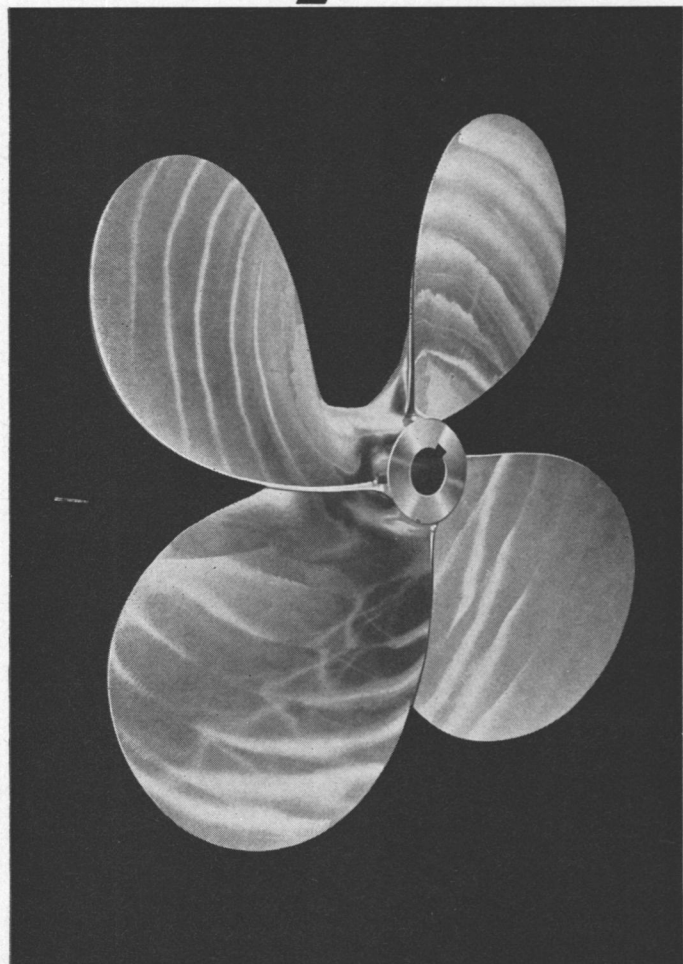
The LPG space is subdivided into four butane and six propane tanks with a total volume exceeding 2.6 million cubic feet. The vessel is designed to carry the gases at near atmospheric pressure with a minimum temperature of minus 46 degrees C. All the necessary machinery for the relique-

faction of the boiloff gas, cargo handling, etc., is also installed.

When the vessel completes her final phases of fitting-out in 4½ months' time, she will go on long-term charter with a Japanese charterer for regular PG/Japan trade.

This is the first of three new ships launched for World-Wide during the month of January, during which period the Group also accepted two new ship deliveries.

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Replace the standard 3-blade propeller on your work boat with Federal's "Power Thrust" and you can expect more power and much smoother operation. In a size for size exchange, "Power Thrust" offers better maneuvering and handling characteristics, reduced engine wear and greater fuel economy. The heavy duty construction of this exceptional propeller was engineered for cutting through mud and debris without damage. Costly haul outs and downtime are practically eliminated, especially if you order your "Power Thrust" in super strong Ni-Bral. Available in all alloys through 96". If you're concerned with economical, efficient operation, more power to you. See your marine dealer about Federal or contact Federal Propellers, Grand Rapids, Michigan 49502.

**FEDERAL
PROPELLERS**

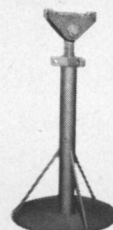
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This fast hook-up tensioner, typical of PATTERSON ingenuity, provides a permanent, positive locking action. Because its hand-wheel is correctly proportioned, cable tension and, therefore, container pre-stressing, can be controlled within pre-set limits. And should slack develop due to wire rope stretch or a slight shift of containers while underway, a quick turn of the handwheel will re-tighten the lashing—no toggle to re-set. Because the devil's claw and fitting will accept swaged ferrules spaced as little as 2½-inches apart, fast lash-up of containers stacked 1, 2, 3 or 4 high is possible with the same cable.



TRAILER JACK

This heavy-duty trailer jack is designed for use with Roll-On, Roll-Off trailers. Three-way nut provides rapid height adjustment of square-thread screw head. Broad base, securely welded and braced, firmly resists shifting or tipping.



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Pittsburgh, Pa. 15233 • 412/332-2012

American Trading Names Frank J. Murphy



Frank J. Murphy

The promotion of Frank J. Murphy to vice president-marine transportation, has been announced by Dr. Morton K. Blaustein, president of American Trading and Production Corporation, Baltimore, Md. The Marine Division offices are located at 555 Fifth Avenue, New York, N.Y.

In announcing the appointment, Dr. Blaustein said, "This promotion is in recognition of Mr. Murphy's successful leadership of the Marine Division, as well as his many years of devoted service to the company."

Mr. Murphy began his career with American Trading in 1939 and rose through various managerial positions to general manager of the Marine Division. He will continue to serve as general manager.

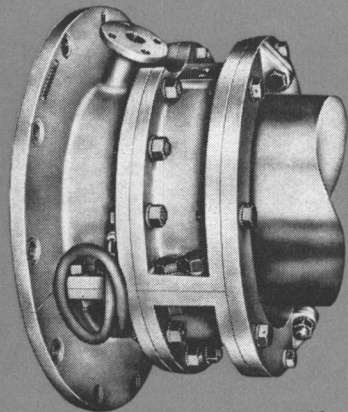
In addition to owning and operating a fleet of oceangoing tankers, American Trading and Production Corporation engages in oil and gas exploration and production, manufactures communication equipment, kitchenware and giftware, and develops and operates commercial real estate properties throughout the United States. The company also has important holdings in major oil companies, as well as substantial interests in banks and financial institutions.

Sanders Receives Navy Buoy Contract

Sanders Associates, Inc., Nashua, N.H. has announced receipt of a \$425,000 contract from the U.S. Naval Ship Systems Command for initial production of shipboard tactical buoys.

The award, the first significant production order for the new type buoys, follows the successful performance of prototype units which were developed by Sanders under an earlier research and development contract. Work will be performed at the company's ocean systems plant in Nashua, N.H.

THE ULTIMATE IN MARINE SHAFT SEALS

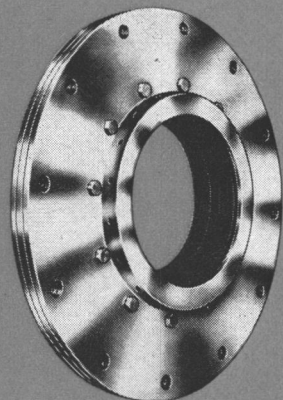
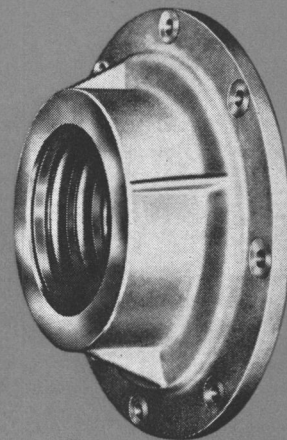


"Face Type" Marine Shaft Seal

Split type bronze construction provides ease of large marine installations after tail shaft has been set up. Inflatable sealing ring permits maintenance when afloat. For water-lubricated systems. Long, trouble-free service. No scoring of shaft or sleeve, no periodic adjustments. Ready to install. Diameters 3 $\frac{3}{4}$ " and up.

"Cartridge" Marine Seal and Bulkhead Seal

Economical, maintenance-free service. Cartridge seals for oil or water lubricated stern tubes. Shaft diameters up to 15". Bulkhead seals with split-face seal advantages. All with marine bronze housing. 4" diameter shafts and up.

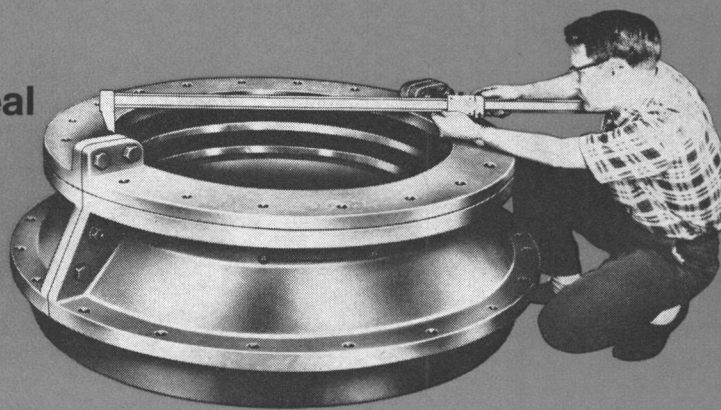


"STS" System

A complete package for oil-filled stern tubes... seals, bearings and lubrication system components. You can install, remove and replace either seal without removing tailshaft or wheel. No scoring of shaft or sleeve. Marine bronze housing. Diameters, 6" and up.

Rudder Stock Marine Seal

Split construction allows installation without removal of rudder stock. A set of upper and lower seals can be supplied with lubrication system components. Upper seal has inflatable ring. Marine bronze housing. Diameters 6" and up.



Our engineers want to work with you - phone or write



SYNTRON

398 Lexington Ave.
Homer City, Pa. 15748
Telephone 412-479-8011



In Canada: Syntron (Canada) Limited

71MS1



THE BOSTON METALS CO.

313 E. BALTIMORE ST. • BALTIMORE 2, MD.

Main Office: LExington 9-1900 • Marine Dept.: ELgin 5-5050

TURBO GENERATOR SETS

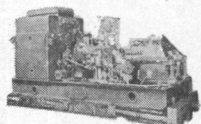
1



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

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

2



**700 KW NON-
CONDENSING MARINE
TURBO GENERATOR SET**

TURBINE: DRV-318-MRI—850#—850°TT—24 pounds back pressure—10938 RPM. GEAR—Type S—432—10932/1200 RPM. GENERATOR: 700 KW—440/3/60—1200 RPM.

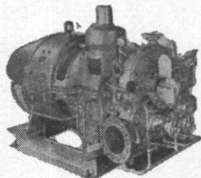
3



**75 KW 120 VDC
GENERAL ELECTRIC
TURBO GENERATOR SET**

TURBINE: 225 lb W.P.—150° superheat—15 lbs back pressure—4962 RPM. GEAR—4962—1800 RPM. GENERATOR: compound—75 KW—120 VDC—651 amps—1800 RPM.

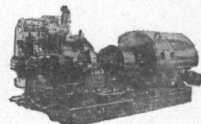
4



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

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

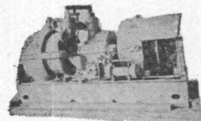
5



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

AP2 Ex-Medina Victory units. Worthington-Moore turbine—440 lbs—740°TT—28 1/2" vac.—type S4—5-stage—6097 RPM—serial 7547 & 7548. GEAR: 14x7—6097/1200. GENERATOR: Crocker-Wheeler 300 KW 120/240 DC—1250 amps—type 102-H—compound—973643—999759—armature flange 8 1/4" bolt circle 7"—12 holes. Also new armature in stock (weighs 1840 lbs). Also have 2 units—generator 102 HP—300 KW—120/240—stab. shunt—1200 RPM.

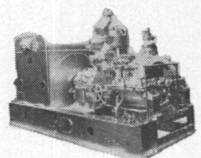
6



**VICTORY 300 KW
WESTINGHOUSE TURBO
GENERATOR SET**

440#—740°F—5930 RPM—2A-9794-15-16-17—coupling non-recessed on steam end of pinion—53 1/4". GENERATOR: Westinghouse 300 KW—120/240 DC—1250 amps—1200 RPM—C.B. 208.4.

7

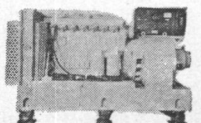


**1000 KW G.E. TURBO
GENERATOR—READY
TO GO—WITH A.B.S.**

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

DIESEL GENERATOR SETS

8



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

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

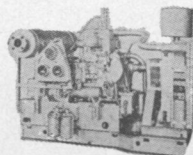
9



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

Ingersoll-Rand—heavy duty type S engine—8 cyl.—505 HP—10 1/2" x 12". GENERATOR: G.E. 350 KW—120/240—600 RPM—switchgear. Good condition—as removed from Grace Line ships.

10



**NEW—UNUSED
10 KW SUPERIOR
GAB-2 DIESEL GEN.**

4 1/2" x 5 3/4"—BHP 16—RPM 1200—radiator cooled. GENERATOR: Delco 10 KW 120 VDC—83.3 amps—75" OAL—57" OAW—57" OAH. **\$1695.**

TURBINE ROTORS

11



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

Reconditioned—balanced—with ABS. Serial 4A-2079—type B—19 stage reaction blades. Excellent—just out of shop.

12

SPECIAL! ATTENTION—OWNERS OF SUN-BUILT C-4 HULLS

GE LP ROTOR—77943 GE HP ROTOR—77942
These rotors will interchange on all Sun C-4 vessels.

13

AUXILIARY GENERATOR ROTORS



DOW—325—T-2 Tanker Aux. Generator.

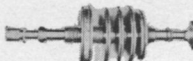
14



**LARGE G.E. ROTOR
FOR T-2 TANKER**

Turbine serial 77418—reconditioned, with certificate. Schenectady.

15

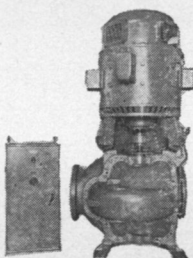


ALLIS-CHALMERS ROTOR

Typical serial No. 3067—will interchange with most 250 KW & 300 KW Allis-Chalmers as installed on Victory's and C-3 vessels.

PUMPS

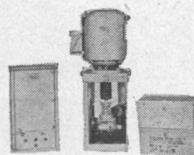
16



**VICTORY AP2 MAIN
CIRCULATOR**

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

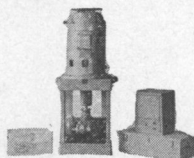
17



**NEW BLACKMER
FUEL OIL TRANSFER
PUMP**

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

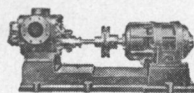
18



**UNUSED BLACKMER
VERTICAL ROTARY
PUMP**

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

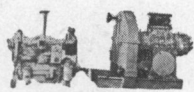
19



**KINNEY MOLASSES
PUMP**

430/215 GPM—size 8x8—pressure 60 lbs.—142/280 RPM. Motor RPM 875/1750. Falk 6.25:1 reducer. G.E. 30/15 HP motor.

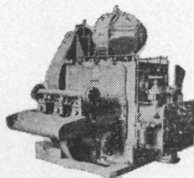
20



**R-2418 WATEROUS
CARGO PUMP**

Bronze—14"—top discharge—capacity 2500 GPM—20 PSI. Bilge service—oil service—2400 GPM—75 PSI. Reduction gear. ENGINE: Cummins JN-130M—6 cylinder—4 1/8" x 5"—130 HP—air starting.

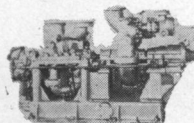
21



**UNUSED BOILER
FEED PUMP**

Worthington Triplex—36.5 GPM—590 PSI—variable stroke—2 3/4" x 5"—P2—S2—R2 vessels. 40 HP—230 VDC—1800/2400 RPM.

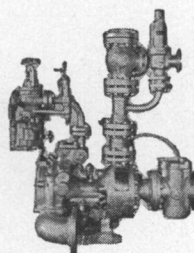
22



**UNUSED SIZE 4
BUFFALO FEED PUMPS**

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

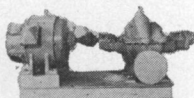
23



**COFFIN MODEL F
BOILER FEED PUMP—
VICTORY OR T2**

Control valve 1 1/4"—Form V1—constant pressure regulator—type C—150 HP—200 GPM at 575 lbs discharge pressure. 7200 RPM—440 PSI—500°TT.

24



**UNUSED WARREN
BRONZE PUMP**

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

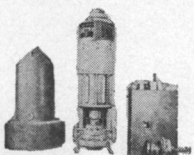
25



**2 BRONZE I.R. 10GT
CARGO PUMPS—14x12**

4400 GPM—280' head—3500 GPM—350' or 4000 barrels/hr. IR-10GT—14 x 12—1750 RPM—driven by Elliott 2DRY turbine—400 HP—400 PSIG—500° TT—10 lbs. back pressure—4550 RPM. Gear: 4550/1750. Good condition.

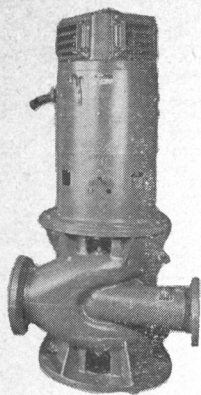
26



**NEW WORTHINGTON
VERTICAL SUBMERS-
IBLE BILGE PUMP**

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

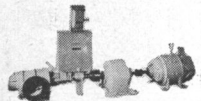
27



NEW—UNUSED BRONZE VERTICAL LST BALLAST PUMP

1500 GPM—56' head or 25 lbs.—8" suction—6" discharge. MOTOR: Century 30 HP—230 VDC—110 amps—1750 RPM—40° rise—stab. shunt—BB drip proof—controls available.

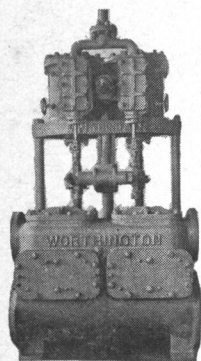
28



EXCELSIOR MOLASSES PUMP—SIZE 5½"

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

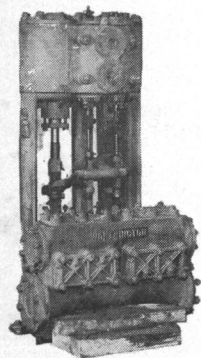
29



BRONZE 14x14x12 CARGO STRIPPING PUMPS

700 GPM @ 100 lbs. Ex-T2 Tanker pump. Also available in steel.

30

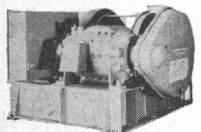


T-2 TANKER BILGE, BALLAST AND FIRE PUMP

Bronze—10x7x10—vertical duplex. Steam pressure 150 lbs. gauge—exhaust pressure 10# gauge—discharge pressure 100# gauge—300 G.P.M.

WINCHES AND WINDLASSES

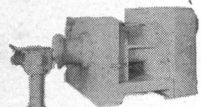
31



AH&D SINGLE SPEED WINCHES

7250 lbs. @ 220 FPM—50 HP—230 VDC—with control. \$1750 as is.

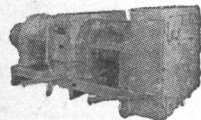
32



VICTORY UNIT WINCHES

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

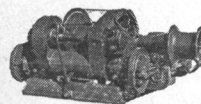
33



MODEL U-6 DOUBLE DRUM WINCHES WITH GYPSIES

50 HP—230 VDC—reconditioned.

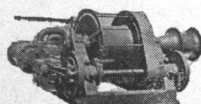
34



WATERMAN STEAM DECK WINCH COMPOUND GEARED

Compound-geared "Valle Type"—9½ x 10. 7000 lbs.—185 FPM—single geared. 12,800 lbs. 101 FPM—compound geared.

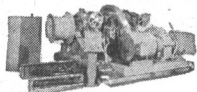
35



WATERMAN STEAM DECK WINCH— SINGLE GEARED

Single-geared "Valle Type"—9½ x 10—10,720 lbs. @ 238 F.P.M.

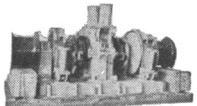
36



HYDE NO. 7 WINDLASS

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

37



NEW—UNUSED LINK BELT WINDLASS

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

38



IDEAL WINDLASS— UNUSED

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

39



UNUSED 70 HP McKIERNAN-TERRY WINDLASSES

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

40

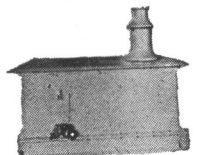


3-TON CLYDE DOUBLE DRUM WINCH

3-Ton double drum winch—10 HP—115 VDC—de-clutchable drums—with controls. Drum is 16" in diameter and 28" wide. Winch OAW 10'2"—OAL 8'1".

MISCELLANEOUS

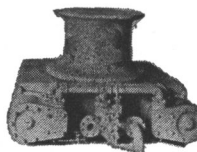
41



UNUSED DOCK CAPSTAN

15 HP—220/440/3/60—3000 lbs @ 100 FPM. Gypsy 8"—waterproof box—floorplate.

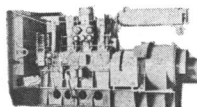
42



HYDE 30" DOCK CAPSTAN

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

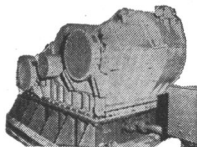
43



LORIMER 75 KW 120/240 D.C. DIESEL GENERATOR SET

Lorimer engine FN—5 cylinder—7.5 bore—9.5 stroke—720 RPM—radiator cooled. GENERATOR: Ideal type DD—75 KW—120/240 VDC—720 RPM—313 amps—frame 350-27. CAN ALSO OFFER SAME GENERATOR WITH 75 KW 440/120/3/60 A.C. Emergency sets from T-2 tankers.

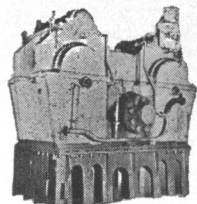
44



DOUBLE INPUT— SINGLE OUTPUT DIESEL REDUCTION GEARS

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

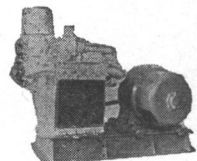
45



VICTORY AP2—WESTINGHOUSE MAIN PROPULSION GEAR

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

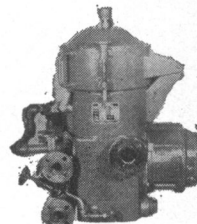
46



INGERSOLL-RAND MODEL 40 AIR COMPRESSOR

Two stage—135 CFM—7" x 6¼" x 5"—110 lbs.—870 RPM—inner cooler. MOTOR: Allis-Chalmers 40 HP—230 VDC—145 amps—1750 RPM—Model EB121.

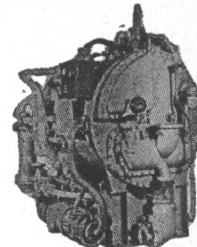
47



DeLAVAL PURIFIERS

Model 55-13—225 GPM. MOTOR: L.A.—Frame 224—2 HP—230 VDC—1750 RPM. Oil inlet & outlet 1"—water discharge 1½". Also available A.C. 440/3/60.

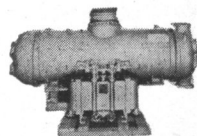
48



GRISCOM-RUSSEL EVAPORATOR

12,000 evap.—230 VDC pumps or 440 A.C. pumps. Complete with Weir automatic water valve.

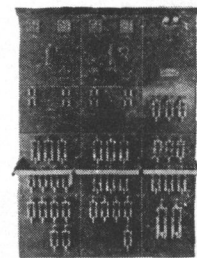
49



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

20" Ex. inlet—5/8" Cu-Ni tubes—with or without air ejector.

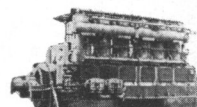
50



UNUSED 20 KW SWITCHBOARD

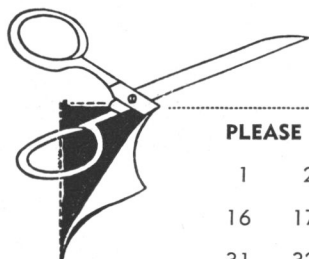
20 KW 120 volt switchboard for two generators in parallel with distribution.

51



1 PAIR OF 300 HP UNION DIESEL ENGINES

Port and starboard—model 06—300 HP at 350 RPM—4 cycle—direct reversible—11 x 15—overhauled 1966—in good condition. Just in from Navy.



PLEASE SEND INFORMATION ON THE FOLLOWING: (Please circle items)

2/1/71

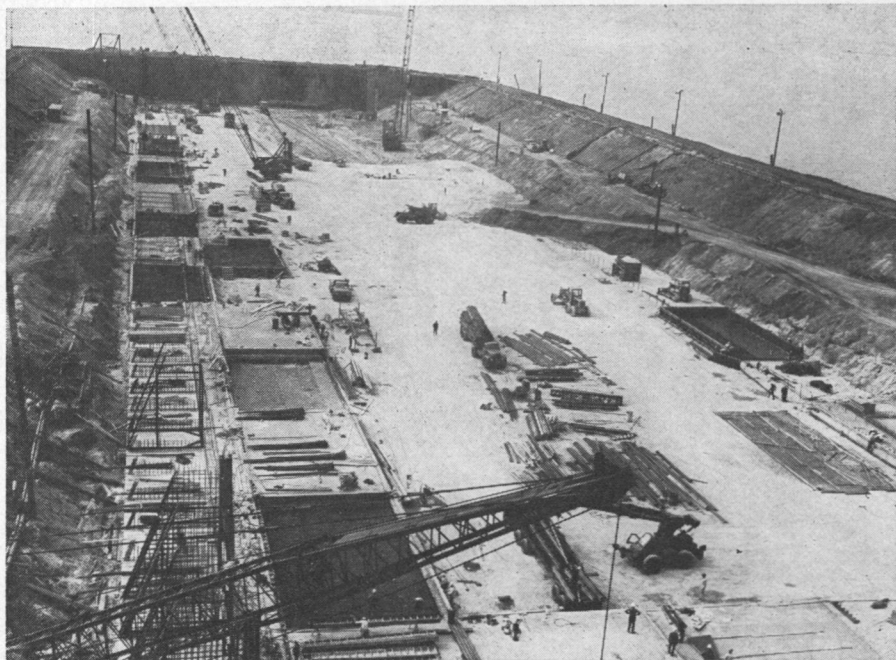
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16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51									

NAME..... COMPANY.....

ADDRESS..... POSITION..... PHONE.....

CITY..... ZONE..... STATE.....

Dravo Building Giant Graving Dock At Bethlehem Steel's Sparrows Point Yard



Inside the 1,200-foot-long cofferdam, the graving dock's 4-foot-thick floor is being placed in 40-by-60-foot sections. Wall thickness will vary from 3 feet at base to 2 feet 4 inches at top. All three walls will be braced externally by 2-foot-thick counterforts, vertical members under construction at left.

A giant graving dock in which "super tankers" and other large ships will be built is taking shape at Bethlehem Steel Corporation's Sparrows Point shipbuilding yard near Baltimore, Md.

Dravo Corporation, Pittsburgh, Pa., which is building the facility under a multimillion dollar contract from Bethlehem, recently completed an unusual vibratory compaction operation for 100,000 cubic yards of sand fill on which the river end of the structure will rest. It is believed to be only the fourth time this method of compaction has been used.

The three-sided, reinforced concrete graving dock, which will be 1,200 feet long, 200 feet wide and 37½ feet deep, is being built inside a cofferdam composed of two parallel earth dikes. Extending 1,200 feet into the Patapsco River,

the dikes are joined at the river end by nine steel sheet pile cells.

The land end of the drydock will rest on original sandy soil and the river end on the sand fill area, which is 450 feet long, 250 feet wide and 35 feet deep. The sand was placed with bottom-dump scows before the cofferdam was dewatered.

Compaction of the sand fill to 80 percent relative density was accomplished with two specially designed vibratory probes and electrically powered vibratory units commonly used for pile driving. The probes were 45-foot-long 30-inch-diameter open-end pipes. They were inserted in the sand according to a grid system by crawler-mounted cranes working back from the river end of the cofferdam.

On top of the sand fill and original sandy soil, Dravo is installing

an under-drain collecting system to keep the area beneath and around the completed structure free of water. The system includes a 4-foot-deep filter bed of sand and crushed stone and 10,000 feet of 8, 12 and 15-inch-diameter porous-wall concrete pipe to carry drainage to a pump station. The station, to be located at the river end of the drydock's south wall, will house two dewatering pumps, two under-drain pumps and two surface or rain water pumps.

The drydock's 4-foot-thick concrete floor is now being poured in 40-foot by 60-foot sections. Concreting is also progressing on the drydock's sides where sections 60 feet long and 24 feet high are being placed.

Walls of the drydock vary in thickness from 3 feet at the base to 2 feet 4 inches at the top. Extending 28 feet below sea level, all three walls will be braced externally by 2-foot-thick counterforts located every 15 feet.

At the end of the year, concreting was about two-thirds complete. About 65,000 cubic yards of concrete will be used to complete the structure. When it is finished next summer, 300,000 cubic yards of land fill will be placed around the graving dock to make its top flush with the ground.

A one-piece floating caisson steel gate will be fitted to the river end by Bethlehem.

Volpe To Address NDTA-Propeller Club Joint Meeting In NYC

The Honorable John A. Volpe, Secretary of Transportation, will address a luncheon meeting sponsored jointly by the New York Chapter, National Defense Transportation Association (NDTA) and The Propeller Club of New York on February 11 at the Hotel Commodore.

Announcement of the Secretary's acceptance for the meeting was made by Brig. Gen. Edwin B. Owen, Commander, Eastern Area Military Traffic Management and Terminal Service (EAMTMTS) and president of the NDTA Chapter.

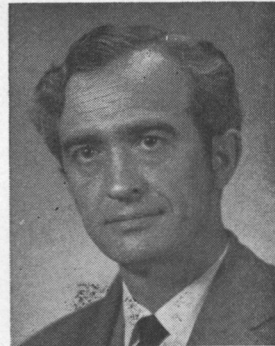
The Propeller Club and the New York Chapter NDTA have extended an invitation to all members of the transportation and maritime industries to attend the luncheon and the talk by the Secretary.

Hanna Mining Names Vessel Manager

John W. Manning, who joined Hanna Marine Services in 1953 and has served as superintendent of vessel operations since 1962, has been named the vessel manager of the Hanna Mining Co., it was announced by the Cleveland-based firm.

Mr. Manning succeeds Stuart W. Sexsmith, who has retired after 25 years at that post.

Dubuque Boat & Boiler Names Capt. D. Trone



Capt. Dennis Trone

Dubuque Boat & Boiler Company has announced the appointment of Capt. Dennis Trone as president and chairman of the board of directors. He has served the company in the capacity of vice president, engineering, since 1965.

Captain Trone is a graduate of the United States Naval Academy, Annapolis, Md. and did postgraduate work in the marine engineering curriculum at the U.S. Naval Post Graduate School, Monterey, Calif. During his service with the United States Navy, he was not only qualified for command at sea, but also served as engineering officer aboard two combat ships.

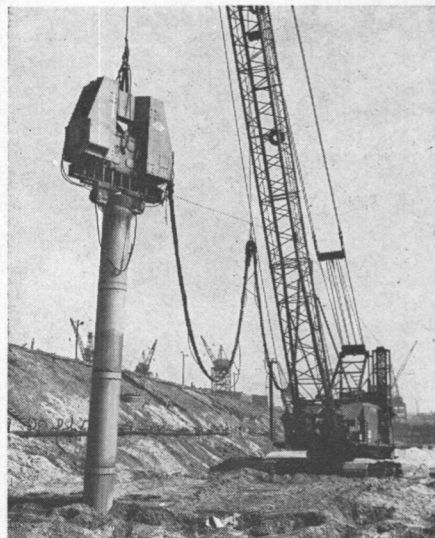
Captain Trone founded the Sangamon Packet Company in 1960, and became its chief executive. Sangamon Packet Company now has four vessels operating commercially on the inland rivers.

Dubuque Boat & Boiler Company is now in the 101st year of vessel construction on its present yard site at the Foot of Third Street, Dubuque, Iowa. The company built the nation's first iron hull commercial river vessel in the spring of 1870. Since then, though several times reorganized, the company has been in continuous operation building steel hull vessels of all descriptions.

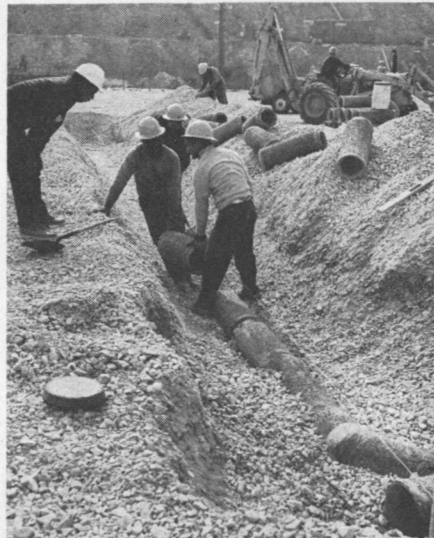
At the present time, Dubuque Boat & Boiler Company has three vessels under construction. One of these vessels will be shipped to Lake Arrowhead, Calif. by rail car, assembled and launched at the site 5,200 feet above sea level in the San Bernardino mountains.

The performance of unusual and unique construction jobs are Dubuque Boat & Boiler Company's stock in trade. Clarence Mackert, yard superintendent, has just returned from Lake Geneva, Wis., where he supervised the lengthening or "jumboizing" of an entertainment excursion boat. The vessel was lengthened by cutting it in half and adding an 18-foot section amidships. This additional length adds almost 100 passengers to the vessel's rated capacity.

Dubuque Boat & Boiler Company is now equipped to do semi-automatic welding of all types of aluminum and steel structures.



Compaction of a 100,000-cubic-yard sand fill area on which the river end of the structure will rest was accomplished with two specially designed vibratory probes and electrically powered vibratory units commonly used for pile driving. It is believed that this was only the fourth time this method of compaction has been used.



Under-drain collection system beneath the drydock floor includes a 4-foot-deep filter bed of sand and crushed stone and some 10,000 feet of 8, 12 and 15-inch-diameter porous-wall concrete pipe to carry drainage to a pump station. The system is designed to keep the area under and around the completed structure free of water.

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SNAME Calls For Scholarship Applicants

Scholarships in both the graduate and undergraduate levels are again being provided by The Society of Naval Architects and Marine Engineers to encourage young men to pursue studies in the naval architectural and marine engineering or closely related fields. For

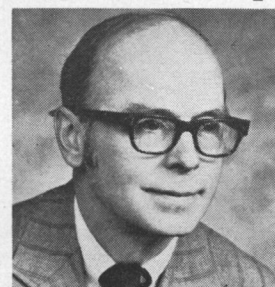
the graduate study program, application forms have been forwarded to ship operating and shipbuilding companies, affiliated trades, and to universities located in all sections of the country. Applications for graduate scholarships for the fall of 1971 should be filed with the Secretary of the Society at 17 Trinity Place, New York, N.Y. 10006. The maximum value of the schol-

arships are equal to the cost of tuition at the college selected plus living expenses in the amount of \$2,100. The Committee on Scholarships will determine in each case the exact value of the graduate scholarship award. Successful candidates may select the institution for advanced studies subject to the approval of the Committee on Scholarships. Factors considered

in making the selection include scholastic ability, the candidate's capacity to pursue advanced study, his ambition, personality, and other factors indicative of prospective leadership status in the marine industry.

In addition to the graduate program, eight undergraduate scholarships of \$1,000 each are made available by the Society at the Massachusetts Institute of Technology and the University of Michigan. Two grants-in-aid of \$1,000 each are also made available at the University of California in Berkeley. Those interested should contact the above institutions directly and not the Society, since the award decisions on the undergraduate program have been assigned to them.

Melvin A. Hendrickson Joins Farboil Company



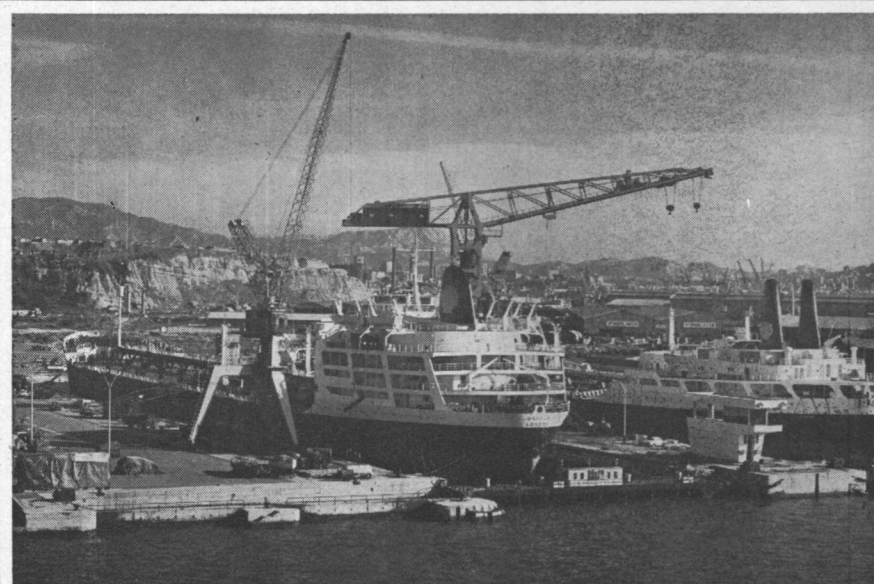
Melvin A. Hendrickson

William F. Moran, executive vice president of Farboil Company, Baltimore, Md., announces the appointment of Melvin A. Hendrickson as general manager of the powder compound coatings division. Mr. Hendrickson was formerly vice president and director of marketing for the Ethylene Corporation of New Jersey, a company principally engaged in the processing of TFE Fluorocarbon resins.

As product manager of the Corrosion Protection Products Division of Minnesota Mining & Manufacturing Co., Mr. Hendrickson created a new concept in corrosion control with the gas and electrical utilities. He also designed and established the resin manufacturing facility now in use at 3M.

Mr. Hendrickson received his education in mechanical and chemical engineering from the University of Minnesota and brings to his new position a wide range of experience which includes field engineering with the American Bridge Company, the negotiation of contracts between the U.S. Air Force and Northwestern Aeronautical Corporation of Minneapolis, and executive positions in corporate planning, publishing, advertising and marketing.

Farboil Company, a division of Beatrice Foods Company, is a leading manufacturer of sophisticated industrial, marine and architectural coatings with main plant and offices in Baltimore, Md. Their marine coatings have worldwide distribution through distributors located in leading ports.



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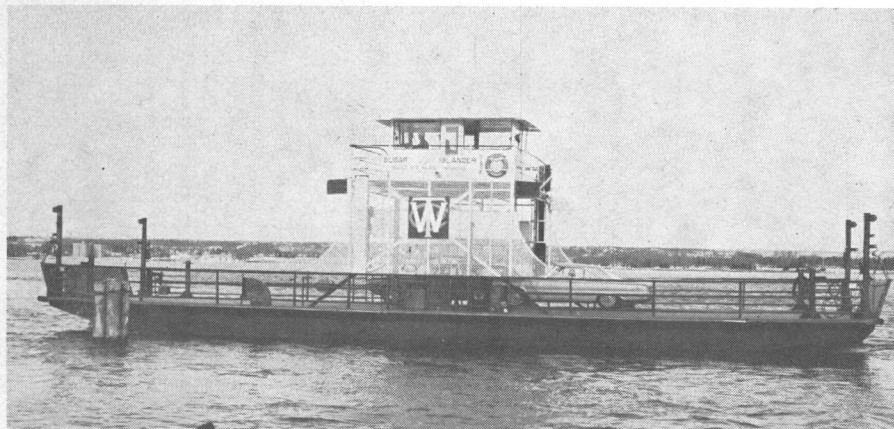
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Ferryboat Sugar Islander Undergoes Modifications At Soo Dry Dock Company



The ferryboat Sugar Islander, owned and operated by Wellington Transportation, shown returning to service after having been lengthened and widened by the Soo Dry Dock Co.

Soo Dry Dock Company, Sault Ste. Marie, Mich., recently delivered to Wellington Transportation Company the rebuilt and lengthened double-ended ferry Sugar Islander. The vessel was in the shipyard for a total of 55 days. The job included cutting the ferry amidships and the insertion of a 20-foot midbody. Also the car deck was widened by the construction of 18-inch sponsons on each side. The conversion increased the ferry's capacity from 9 to 12 cars. This was the first lengthening project undertaken by Soo Dry Dock Co.

After the ferry was cut in two, it was pulled apart 20 feet and the frames and deck beams of the midbody were placed and welded. The bridge, originally amidships and 20 feet off center after lengthening, was then skidded 10 feet forward so as to be centered and widened to correspond to the new main deck. In order not to increase the length of the drive shafts, bearings, etc., the ferry was cut in two between the engines, which remained in each original half in the same respective positions.

The Sugar Islander operates on a route 1,500 feet long on the St. Mary's River, from Mission Point ferry dock in the city of Sault Ste. Marie, to Ferry Landing on Sugar Island. This area is 1½ miles below the famous Soo Locks. The ferry's route crosses the main steamship channel between Lake Superior and Lake Huron. Year-round service is maintained by the ferry's owners, the Wellington Transportation Company. This is the northernmost 12-month ferry operation in the United States.

Ferry service to Sugar Island began in the mid-1920s. Observant vacationers to the North Country had found Sugar Island ideal for summer cottages, fishing, and general recreation. With this popularity, the ferry service grew to the extent that in the 1940s the Road Commission of Chippewa County, Mich., decided to operate its own ferry.

The Sugar Islander was built in 1947 at Sault Ste. Marie by the Lock City Machine and Marine Company for Chippewa County. Since then the vessel has been modified several times and in 1961

it was acquired by its present owners, the Wellington Transportation Co. of which Capt. **James D. Wellington** is president, Capt. **John P. Wellington** is vice president, and **Charles P. Wellington** is secretary-treasurer.

Soo Dry Dock Co. was established in 1963 as a subsidiary of Soo Welding Co., owned by the Fabry family, and has built up a reputation for excellent marine repair service in the northern Great Lakes area. A steel scow was converted and altered into a 110-foot by 40-foot drydock. This dock lifted its first hull, the Sugar Islander, in April 1963. Since then, all types of commercial, service, and private pleasure craft up to 800 gross tons have been lifted.

The recent lengthening of the Sugar Islander was done under the supervision of **Arthur Fabry**. Stability calculations and other technical details were worked out by the College of Naval Architecture

and Marine Engineering, University of Michigan, of which Prof. **Harry B. Benford** is chairman. Drawings were prepared by Rev. **Edward J. Dowling, S.J.**, professor of engineering graphics, University of Detroit.

New Appointments At Shipcraft Agency, Inc.

Arne Larsson, president of Shipcraft Agency, Inc., New York-based general agents for Caribbean Trailer Express Line, has announced several appointments to Shipcraft's staff at New York. These appointments will enable the firm to better serve their principals and shippers and care for the increased freight carryings which Caribbean Trailer Express Line has been experiencing in its direct, weekly trailership service between New York, the Dominican Republic, and Jamaica.

H. Stuart Clarry, formerly with Black Diamond Lines, has been named manager of operations for Shipcraft Agency, Inc. Mr. Clarry, a 30-year veteran in the maritime industry, has served in both operating and chartering capacities during that time. His new duties will include full supervision of Shipcraft's operations at New York and all Caribbean ports.

Eugene Mazzuckis, formerly with Norton, Lilly & Co. at New York, has been named freight sales representative and brings with him many years of experience in the Caribbean trade.

Carlos E. Ducruet, formerly with Baez & Rannek, Santo Domingo steamship agents, has been added to Shipcraft's New York

staff to offer experienced and improved service to C.T.E.'s Dominican Republic importers and exporters.

Caribbean Trailer Express Line employs two modern, 15-knot trailerships in this service, the Caribbean Venture and the Caribbean Enterprise. All of C.T.E.'s services are operated from Pier 12, Port Authority Terminal, Foot of Wolcott Street, Brooklyn, N.Y.

Two additional roll-on/roll-off vessels now building in Germany and England, will be delivered in 1971. These new, as yet unnamed ships, with a speed of 17½ knots, will be capable of carrying ninety-three 40-foot trailers or, alternatively, fifty-two 40-foot trailers, plus seventy-six 40-foot containers. They will also offer space for heavy equipment, automobiles, machinery, and other out-sized equipment.

Esso Signs Contract With A.G. Weser For 250,000 Ton Tanker

A contract has been signed between Esso Tankers, Inc., an affiliate of Standard Oil Company (New Jersey) and A.G. Weser Shipyard for the construction of a 250,000-dwt tanker.

The tanker will be built at the A.G. Weser Shipyard in Bremen, Germany, for delivery December 30, 1974, with the following approximate measurements: length, 1,141 feet; breadth, 170 feet, and draft, 65 feet 5 inches. Operating speed is 16 knots.

The ship will be propelled by a 31,550 shaft horsepower steam turbine and will be used in Esso's fleet in international tanker service.



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Sandock Ltd. (South African National Dock) - Durban

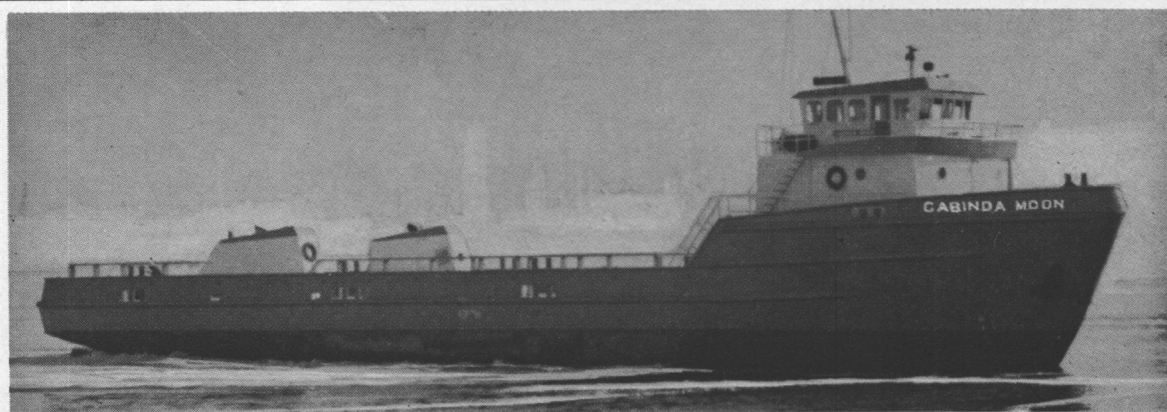
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BP Goup Operates 350 Ships Totaling 18.5 Million Dwt

British Petroleum's largest supertanker to date, the 240,000-dwt Blois, was christened recently at La Ciotat, near Marseilles, France.

When the Blois is commissioned, BP will have 21 supertankers (of more than 200,000 dwt each) in service either owned or on period charter. By the beginning of 1975, the supertanker fleet is expected to increase to around 50.

The Blois is the third company-owned supertanker to join the BP fleet in 1970 and will be operated by Societe Maritime des Petroles BP, a wholly-owned subsidiary of BP's French company. The other two, the British Explorer and the British Inventor, were built in Japanese yards and were the first of nine tankers of up to 261,000 dwt ordered by the company from Japan.

In August, BP placed orders for four supertankers from yards in Holland—two vessels of 249,000 tons each, and two of 225,000 tons each. The first of these four supertankers is expected to be in service during 1973 and the remainder during 1974.

Additionally, two 240,000 tonners have been ordered from La Ciotat, near Marseilles, and another of 219,000 from a St. Nazaire shipyard.

The total fleet operating for The BP Group presently consists of more than 350 owned and chartered vessels of all kinds totaling some 18.5 million dwt.

Captain F.W. Gooch Joins Robert E. Carr Associates

Capt. F.W. Gooch, USN (ret.), former Commander, Philadelphia Naval Shipyard, has joined Robert E. Carr Associates, Inc. as vice president. Robert E. Carr Associates, systems test management consultants specializing in integrated weapons/electronics test programs for the Navy Surface Shipbuilding Program, is expanding in the area of marine systems testing and engineering.

Prior to his duty at the Philadelphia Naval Shipyard, Captain Gooch served in senior management positions in the Portsmouth Naval Shipyard and San Francisco Naval Shipyard, as well as in the Polaris Program. He received his engineering degrees from the University of Oklahoma, is a licensed professional engineer, and a member of The Society of Naval Architects and Marine Engineers and the American Society of Naval Engineers.

Robert E. Carr Associates, Inc. is located at Building P-5, New York Shipbuilding, Camden, N.J. 08104.



"WHAT DO YOU MEAN, - YOU 'GOTTA GO'?"

Decca Names Vanina National Sales Manager

ITT Decca Marine Inc. of New York has appointed **Rene A. Vanina** national sales manager, according to an announcement by **Keith Dickenson**, executive vice president.

ITT Decca Marine Inc. is a leading supplier of marine electronic navigation aids, communications and automation equipment. Its products range from yacht radar to automation equipment for mammoth tankers.

As national sales manager, Mr. Vanina will be responsible for liaison with I.D.M.'s nationwide distribution network consisting of over 80 dealers.

Mr. Vanina's past associations include Sperry and General Dynamics, where he served in various marketing and engineering management capacities. He joined ITT Decca in November 1966.

A 1937 electrical engineering graduate of the College of the City of New York, Mr. Vanina is a member of The Society of Naval Architects and Marine Engineers and the American Society of Naval Engineers.

Devoe Marine Appoints J.M. Quinn Jr. And Dr. Verbanic



Joseph M. Quinn Jr.



Dr. Carl J. Verbanic

Clete Pinaire, vice president of marketing, has announced that **Joseph M. Quinn Jr.** and **Dr. Carl J. Verbanic** have assumed new positions in the Devoe Marine Division of Celanese Coatings Company.

Mr. Quinn has been appointed manager of field sales, and will be responsible for selling all product lines in the domestic marine industry.

Dr. Verbanic has been appointed to the newly created position of manager, marketing and planning.

Mr. Quinn joined Celanese Coatings Company in 1962 as a Devoe Marine Division sales representative. Most recently he was manager of Government sales. Mr. Quinn holds a B.S. degree from the U.S. Merchant Marine Academy and has completed the Harvard Business School Program for Management Development.

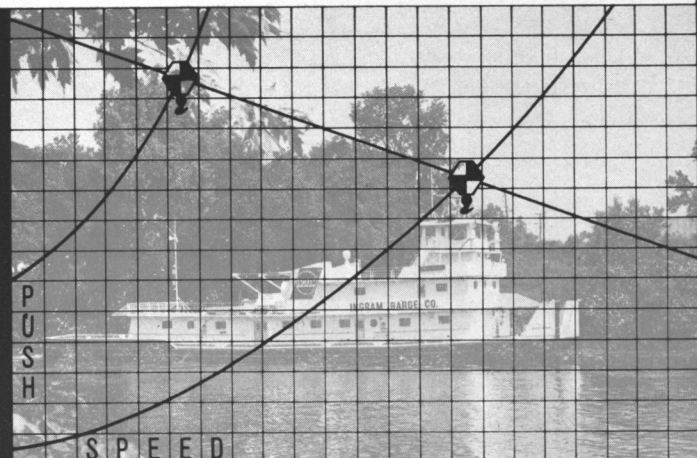
Dr. Verbanic transferred from Celanese Chemical Company to Celanese Coatings Company in 1965 as manager of market research. Since 1968 he has filled the position of manager of planning and new product development. Dr. Verbanic holds a B.S. from Canisius College, an M.S. from Holy Cross, and a Ph.D. from Indiana University.

Financing Approval For American Mail Line

Approval has been received by the American Mail Line, Ltd., Seattle, Wash. for mortgage bonds in the amount of \$9,750,000. The proceeds of this financing will be applied to the conversion of three C-4 type cargo ships into full containerships. Work on the vessels is to be done by the Bethlehem Steel Corp.'s San Francisco yard.

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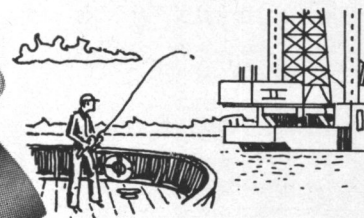
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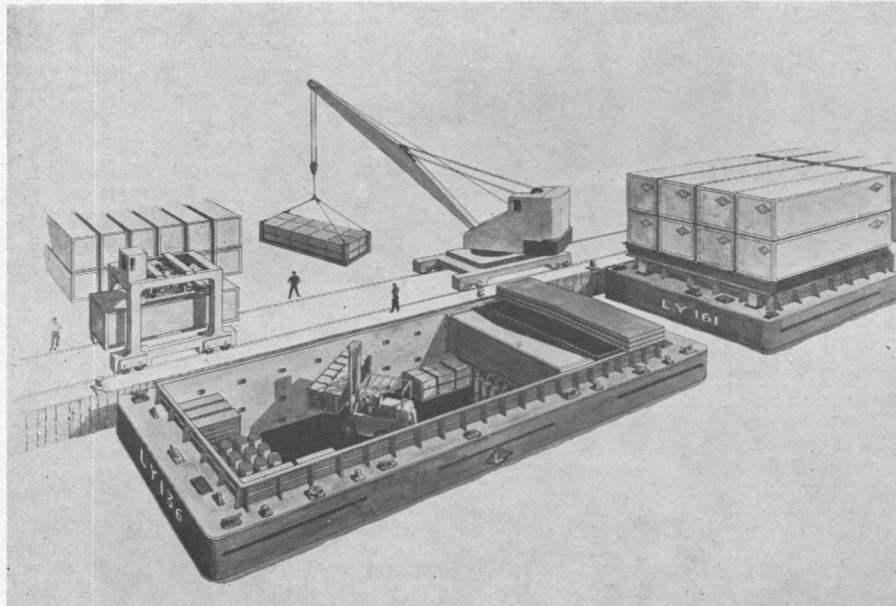
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Lykes Bros. Steamship Company Invites Bids For 265 Seabee Barges



Artist's rendering of Lykes Seabee barges at quayside. Each barge is 97½ feet long and 35 feet wide and its cargo hold is approximately 16 feet deep. The barge hatch opening is 85 feet by 32 feet. It is double-skinned and its cargo hold forms a perfect rectangle. Each Seabee barge unit can handle up to 40,000 bale cubic feet and up to 850 long tons of cargo. These Seabee barge units can carry products ranging from bulk to modern intermodal containers and pallet loads. An intermediate deck system allows all or a portion of the interior to be decked at various heights to provide separation and stowage integrity. These same deck segments can function as vertical bulkheads when required. Specialized Seabee barge units are also planned for liquids and other products. The Seabee System includes the carriage of modern intermodal containers in 20-foot, 30-foot, and 40-foot lengths. Containers will be carried in and on the barge units which operate as small container vessels.

Lykes Bros. Steamship Co., Inc., has issued invitations to bid for the construction of 265 barges to service the company's three new mammoth Seabee class barge and intermodal carriers already under construction.

The bids are to be received by Lykes in New Orleans, La., not later than 2 p.m. on February 18. Lykes officials said they plan to select not more than three contractors to meet the production schedule set for construction of the barges.

The first of the 265 barges is to be delivered to the Quincy, Mass., shipyard of General Dynamics Corp., where the Seabees are being built, on or before June 1, 1971. A prototype barge, now under construction by Equitable Equipment Company in New Orleans, will also be sent to the Quincy shipyard where both new barges will be used in testing the loading and discharging facilities of the vessels.

Production schedule for construction of the barges calls for delivery of 36 barges by November 1 and 38 others by December 15 of this year, with five additional series of 38 barges each being delivered by February 1, March 15, May 1, June 15 and August 1 of 1972.

The first of the new Seabees is set for delivery in January 1972, with the other two carriers due in April and July of next year. They will operate between Lykes' terminals on the Gulf, and terminal points in the United Kingdom and Continental Europe.

The Lykes Seabees will be the

largest common carriers ever built for the American merchant marine. They are 875 feet long and 106 feet wide, have a speed of 20 knots and can transport 24,500 long tons of cargo in 1,900,000 cubic feet of cargo space, and they will have a heavy lift capacity of 2,000 tons. A Seabee will sail from the Gulf every 10 days.

Each vessel can transport 38 fully loaded barges, or 1,800 containers, or vehicles on three-and-a-half miles of single laned highway on three decks that run unobstructed the length of each ship, or any combination of these cargoes, including liquids in tanks, unitized cargoes, or breakbulk cargoes.

The Seabee barges are also huge when compared with other ship-carried barges now in operation or planned for operation. Seabee barge units are 97½ feet long and 35 feet wide, have a bale capacity of 40,000 cubic feet and can load 850 long tons of cargo, while other barge units are 61 feet long and have 19,900 bale cubic feet of stowage space.

Lykes' barges will fit readily into integrated tows on inland waterway systems both in the United States and Europe; they are double-skinned all-welded steel construction, and built to the standards of the American Bureau of Shipping. Spokesmen for Lykes describe the Seabees as the most flexible ships ever built and the Seabee barges as the most sophisticated cargo barges ever designed.

"They had to be to meet the ultra high standards established by the Lykes organization for its new

total service concept for which the Seabees were created," said F.L. Betz, project manager.

"Container handling was a major consideration in designing the Seabee barge units," said Mr. Betz. Containers of various sizes may be stowed either in the hold of the barges or on top of the hatch covers, or they may be stowed aboard the Seabees in special container trays holding as many as 32 twenty-foot containers or 16 forty-foot containers.

Ameron Names Jackson Corporate Vice Pres.

Ameron (with corporate offices in Monterey Park, Calif.) has named **Earl E. Jackson** to the newly-created corporate position of vice president-sales promotion. Mr. Jackson will have responsibility developing sales potentials in all company marketing areas. He will report to **Elliott E. Brainard**, senior vice president-operations staff.

For the past two years, Mr. Jackson has been on assignment in Washington, D.C., serving as vice president-Washington representative, in charge of liaison between the company and Federal and foreign Government agencies, as well as representing the company generally throughout the Eastern United States. In his new position, Mr. Jackson will also continue with his Government activities, but will be based in California.

Joining the company in 1948, Mr. Jackson has since held a number of executive positions, including vice president and division manager of the company's Northern California Division. He is a graduate of the University of California

at Berkeley, with a B.S. degree in civil engineering, and presently holds memberships in the American Water Works Association, the American Society of Civil Engineers, and the Inter-American Association of Sanitary Engineering.

Ameron is the manufacturer of a broad range of basic and finished concrete and steel products, fiberglass-reinforced plastic pipe and tanks, PVC sheet plastic linings, and corrosion-resistant protective coatings and cements—all of which are widely-used for a variety of construction needs. Ameron maintains manufacturing facilities both in the United States and in Canada, Mexico, South America, Europe, and Japan. Sales and distribution are throughout the free world.

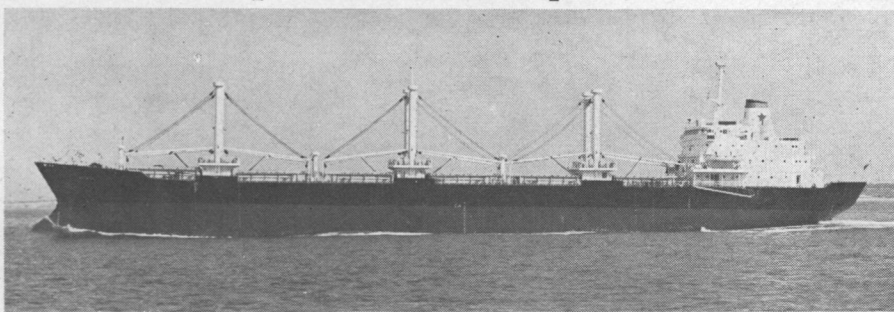
Marine Purchasing Elects T. Wang Pres.



Theodore Wang

Marine Purchasing Corporation, an affiliate of Marine Transport Lines, Inc. has announced the election of **Theodore Wang** as president. Mr. Wang has been a vice president of Marine Purchasing Corporation since 1958 and was previously affiliated with Pan-Atlantic Development Corporation.

Fourth Freedom-Hispania Class Ship Built By Astilleros Completes Trials



Freedom-Hispania Class ship, 15,500-dwt Kolasin, shown above, recently completed sea trials in the Bay of Cadiz. The ship was built for a Yugoslavian ship operator.

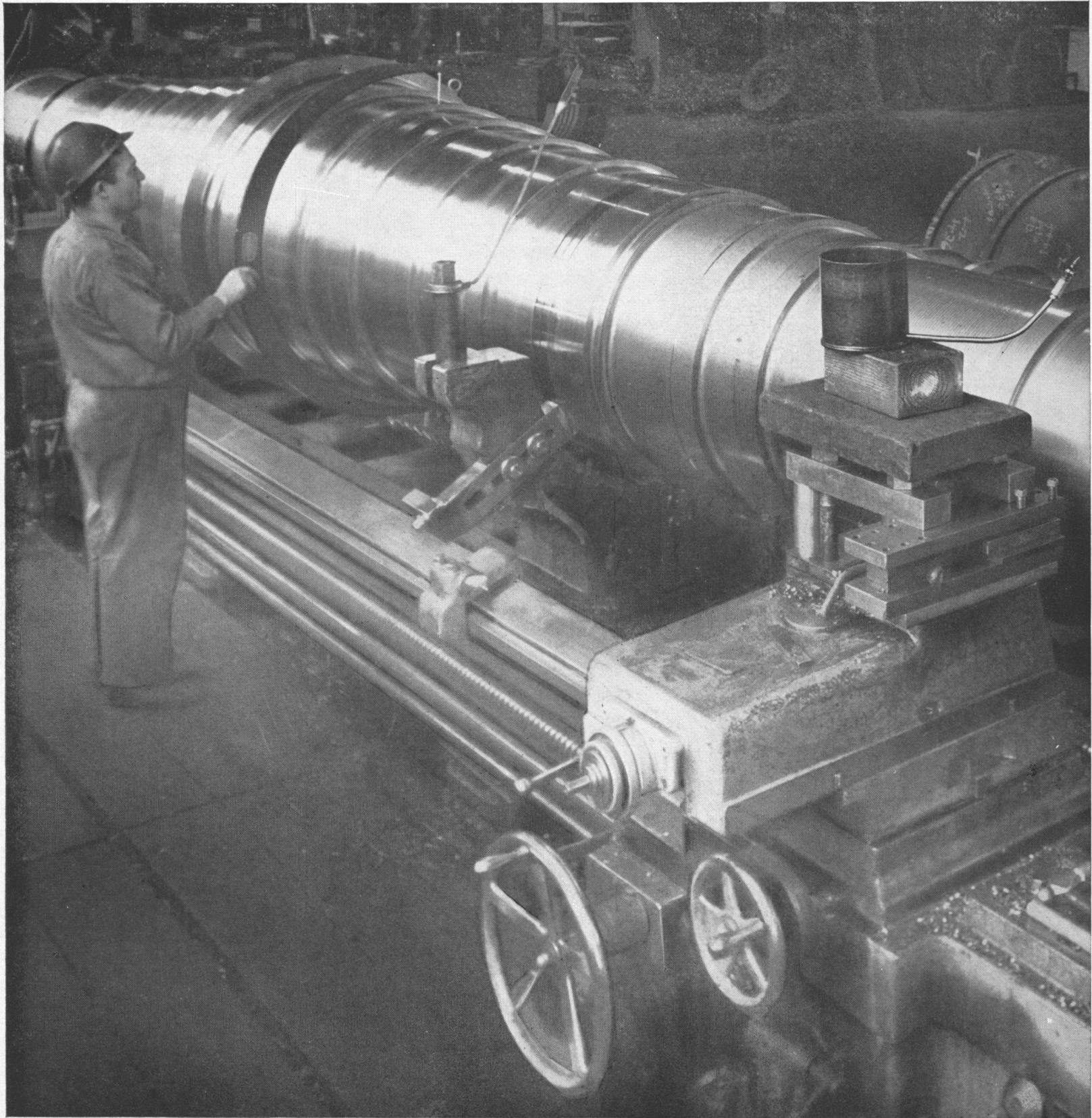
The fourth standard Freedom-Hispania class cargo ship to be built at the Matagorda Shipyard of Astilleros Espanoles S.A. recently completed sea trials conducted in the Bay of Cadiz, Spain. The 15,500-dwt Kolasin is the 161st ship to be built in the Matagorda Shipyard. It was constructed for the Yugoslavian firm of Compania Prekookeanska Plovidba.

The Kolasin has an overall length of 472 feet, a beam of 67 feet 9 inches, a depth of 41 feet 9 inches and a loaded draft of 30 feet 4 inches. Propulsion is by a Naval-Sulzer diesel engine devel-

oping 8,000 bhp, built by Astilleros Espanoles in its Sestao Shipyard. This 6RD-68 type engine provided a trial speed of 17.14 knots, which is in excess of contract requirements.

Most of the equipment used on this vessel was built at the various shipyards controlled by the Astilleros Espanoles S.A. group. These components included the exhaust-gas boiler, deck machinery, steering gear, hatch covers and the propeller.

This same shipyard recently delivered a 24,000-dwt tanker, Hull No. 156.



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Last East Coast Sailing Of U.S.-Flag Passenger Ship

When the S/S Santa Rosa departed from New York on a 13-day Caribbean cruise on January 8, 1971, it marked the last sailing of the last United States-flag passenger ship on the East Coast. In fact, it seemed to forecast the end of all such sailings, since only four other passenger ships remain of the once proud fleet of this type of ship, and they are on the West Coast.

The Santa Rosa thus sadly follows the wakes of the America, Atlantic, Independence, Constitution, Brasil, Argentina, United States, Lurline and a host of others. Most of these ships were built after World War II and had fore-shortened careers. Despite Government subsidies, the steamship companies decided

that they were no longer able to operate them profitably.

On board for this last sailing were a valiant band of Propeller Club members, embarked for the purpose of dramatizing the plight of the American merchant marine and its faded passenger ship fleet. Their Caribbean cruise was conceived before the announcement of the pending termination of further sailings of the Santa Rosa and Santa Paula of the Prudential-Grace Lines, which were the last two remaining U.S.-flag passenger ships on the East Coast. Additional members of the club embarked at Port Everglades, Fla., on January 10, where a reception by the Port Everglades Propeller Club was held.

Arthur E. Farr, national president of The Propeller Club of the United States and vice president of Northwest Marine Iron Works,

a Portland, Ore., shipyard, was on board with his wife. At a pre-sailing party on board, he commented wryly: "It is indeed ironic that The Propeller Club cruise coincides with the last sailing of the last United States-flag passenger ship on the East Coast. Nevertheless, we are honored to have the choice to sail on this safe American passenger ship, built in America, operated under the American flag, and served by American personnel. We look forward to the day when a substantial number of American passenger ships will once again cruise the international sea lanes and proudly show the American flag in the ports of the world."



Shown on board the Santa Rosa before departure are, left to right: Arthur E. Farr, national president of The Propeller Club of the U.S., and Mrs. Farr; Mrs. Earl W. Clark and Mr. Clark, who is Co-director, Labor-Management Maritime Committee, Washington, D.C.

Mr. Farr added: "The Propeller Club, with its 13,000 members and 77 local clubs in the United States and overseas, remains dedicated to the promotion of measures to revitalize our merchant marine. We intend to re-dedicate ourselves to this prime purpose. I cannot recall in our history when U.S. passenger ships have not sailed from the East Coast. This is indeed tragic! I find it hard to believe that the Administration, the Congress and the people of a great country will allow this situation to continue!"

The Propeller Club of the United States is pledged to support necessary measures to implement the new 1970 Merchant Marine Act, particularly in the area of improved labor-management relations and the use of American-flag vessels for the shipment of American exports and imports overseas. Since the formation of its first local club in 1923, it has sought to insure the existence of an American merchant marine adequate to meet the requirements of national security and economic welfare of the United States.



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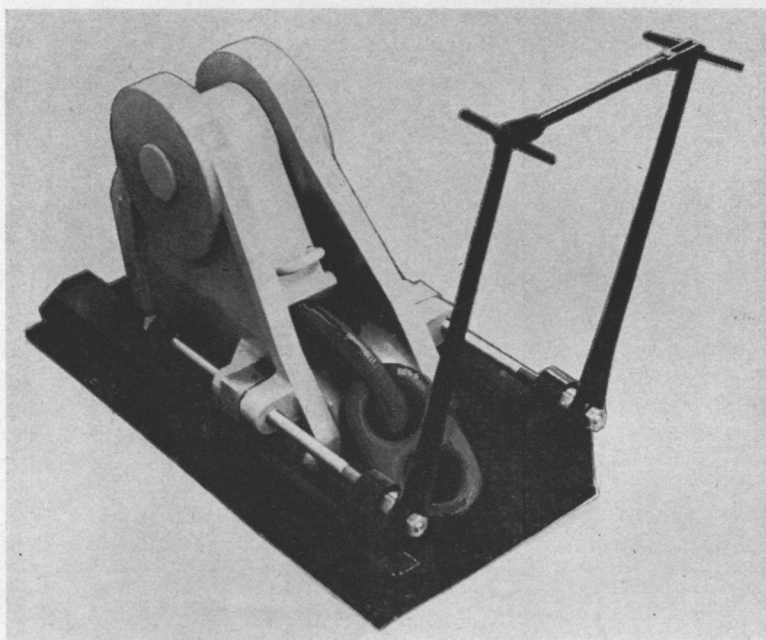
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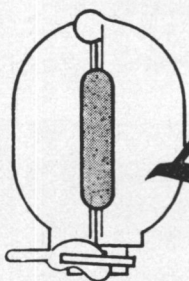
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Marine Supply Of Singapore Appoints Marjet In U.S.A.

Marjet International, Inc., 705 Fourth Avenue, Brooklyn, N.Y. 11232, has been named as the U.S. representative for Marine Supply Co., Ltd., of Singapore, according to an announcement by **Lee Ah Ngoh**, managing director of the 24-year-old Singapore firm.

Marine Supply Co. operates three cargo supply ships (one with a cold room) licensed to service vessels outside the Singapore Port Limits, which is especially important to the supertankers on the run between Japan and the Persian Gulf.

The company also owns and operates nine passenger motor launches which are used to convey steamship officials, small items of stores, spare parts, etc., as well as being available to provide launch services to ships' crews.

Regular truck and launch service is provided to the major oil refineries of Shell, Esso, Caltex, and Mobil, as well as the shipyards at Keppel, Sembawang, and Jurong, and all the Port of Singapore Authority wharves.

Inquiries from vessel owners and operators trading in or near the Port of Singapore may be directed to **D.J. MacDougall**, president of Marjet International or to **Tom M. Finnican**, vice president/sales.

USCG Will Seek Bids On 400-Ft. Icebreaker

Requests for bids for the construction of a 400-foot icebreaker are scheduled to be issued by U.S. Coast Guard Headquarters, 400 Seventh Street, S.W., Washington, D.C. 20591, on March 1, 1971. Contract plans and specifications are being prepared and completion is expected about February 1.

Halcyon Steamship Co. Appoints A.J. Dimino

Anthony J. Dimino has joined Halcyon Steamship Company, of New York City, as a chartering and cargo broker. Halcyon Steamship Company, Inc., an owner and operator of U.S.-flag vessels, is expanding its activities to include both agency and brokerage.

Mr. Dimino was previously a vice president of Tidal Companies, Inc., and Brewer Shipping Company, Inc.

Wilcox Enters Marine Market With Omega Navigation

Wilcox (an American Standard Company), Kansas City, Mo., world leader in the manufacture of aviation navigational and communication equipment, has expanded into the marine electronics market with the acquisition of an Omega navigation receiver design.

The latest of several designs developed by Pickard & Burns Electronics Division of LTV ElectroSystems, Inc., Wilcox's Omega receiver is used in a navigational system that can now obtain a position fix at any time of the day or night over the entire North Atlantic and over the northeast Pacific Ocean. When fully operational in 1973, the system will provide global coverage and accuracies of one nautical mile by day and two nautical miles by night.

Concerning the acquisition, Wilcox director of marketing **R.J. Wolin** stated: "Wilcox is elated to have acquired a capability in Omega, one of the most significant developments in the navigational field. For the first time, ocean crossing vessels will be able to carry a precise navigational aid at a reasonable price, and we at Wilcox are pleased to play such an important part."

The Omega very low-frequency (VLF) radio navigation system, under development by the United States Navy since the early 1950s,

will use eight transmitters to girdle the world with low-frequency navigational signals that can be used to help guide all aircraft and ships, civilian and military, of all nations. The Omega system already has four working installations strategically located. Both military and commercial marine receivers can be utilized and are now being marketed.

The four Omega transmitting stations now in operation are located at Bratland, Norway; Port of Spain, Trinidad; Haiku, Hawaii, and Forestport, N.Y. When complete, eight transmitter stations will be located roughly 5,000 nautical miles apart around the world. Each transmits three frequencies (10.2, 11.333 and 13.6 kilohertz) sequentially for 10 seconds at precise times, pulse lengths and intervals for identifications. The stations will radiate a 10-kilowatt signal to a range of 8,000 nautical miles.

With extensive supporting study and experimentation preceding the implementation, the Omega navigational system is considered one of the most thoroughly researched projects ever carried out. Omega is described as an important breakthrough for all transoceanic navigators that may not have the large funds necessary for ultra-sophisticated electronic and inertial navigation aids. Before the Omega system, 1,000 miles out from shore meant reliance on the compass, the sextant, and dead reckoning for many.

Entering the marine electronics market is Wilcox's first major step outside of the aviation field, where they have designed over 800 VOR installations, installed several hundred ILS systems for airports throughout the world, and have become one of the leading manufacturers of airborne electronics for private, commercial and military aircraft.



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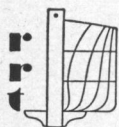
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Belgian Line Elects Luc Van Mossevelde

Eric de Spirlet, president of the Belgian Line Incorporated, announced that at the annual meeting of the board of directors of the Belgian Line, Luc Van Mossevelde was elected executive vice president of the company. Mr. Van Mossevelde was formerly vice president of the company.

He was educated in Belgium and attended St. Ignatius University in Antwerp. He spent two years in Kinshasha and Matadi, Republic of the Congo, where he represented the Compagnie Maritime Belge during those years. In 1967, Mr. Van Mossevelde joined the Belgian Line in New York, where he has been associated with the Belgian African Line as vice president.

Mr. Van Mossevelde is secretary general

of the Belgian American Chamber of Commerce in the United States and is a director of the organization.

Blount To Build Replica Of Paddle Wheel Excursion Boat

Blount Marine Corporation of Warren, R.I. announces the signing of a contract to design and build a full size replica of a Mississippi River paddle wheel excursion boat for the Combined Thousand Island Boat Tours, Inc. The owners of the new vessel operate Uncle Sam's Boat Tours out of Alexandria Bay, N.Y., and conduct sightseeing tours in the Thousand Islands.

Complete with a hinged antique smoke stack and all the filigree of the nostalgic river steamers, the all-steel 65-foot two-deck boat will have a single stern paddle wheel and will be twin diesel powered. It will have a 150-passenger capacity.

The new owners came all the way to Rhode Island because they needed a sea-kindly paddle boat. The St. Lawrence gets rough at times and the ordinary Mississippi style flat bottom doesn't work too well. In fact, a flat bottom boat has difficulty even stemming the wake of the many cargo freighters using the St. Lawrence Seaway. The flat bottom pounds and slaps in the waves, so the new boat will have a Mississippi style superstructure, but a modern seagoing "V" bottom.

Delivery will be made in May via Long Island Sound, the Erie Canal and St. Lawrence Seaway.

Newport News Gets Poseidon Contract

Newport News Shipbuilding & Dry Dock Co., Newport News, Va. has received a contract for advance planning and design for the Poseidon (C-3) conversion and overhaul of the nuclear-powered ballistic missile submarine Henry L. Stimson (SSBN-655).

The value of the contract is in excess of \$2.5 million. This contract is in addition to a contract for similar work on two other submarines which the yard won in June 1970.

Equity 65-Foot Service Boat Delivered To British Firm



New 65-foot Equity tanker service launch.

A new 65-foot tanker service launch, built by Equitable Equipment Company, Inc., New Orleans shipbuilder and manufacturer of a diversified line of marine products, recently left New Orleans aboard the S/S Hohenfels for delivery to the Arabian Gulf.

The new vessel, the Grayswift, was built for Gray, Mackenzie & Co., Ltd., London, England, from an Equity Standard 65-foot Water Taxi hull and provides additional berthing space for the crew as well as complete galley facilities. She is furnished with complete electronics and is powered by twin GM 12V71 engines developing 800 horsepower.

The Grayswift, operating under Dubai flag and registry, will be used for crew changes, mail delivery and handling light stores for large tankers anchored in the vicinity of Ras al Khaimah.

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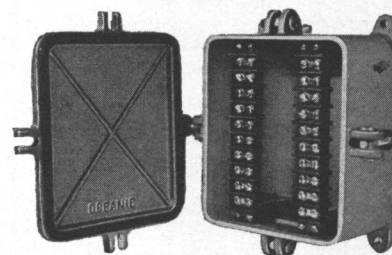
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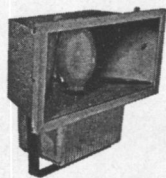
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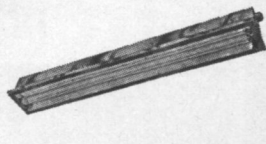
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Tokyo Shipping Tug Amaryllis Starts 11,500-Mile Tow With Two C-2s From Reserve Fleet



The Amaryllis is shown in Upper New York Harbor with the two C-2 ships lashed together astern.

The Tokyo Shipping Company ocean tug Amaryllis, one of the most powerful afloat, left New York Harbor recently with two C-2 ships from the Hudson River reserve fleet in tow. They were the Elden H. Johnson and William H. Thomas, both formerly operated by the Military Sea Transportation Service. They will be towed 11,500 miles to Taiwan for scrapping.

The C-2s were cut out from the reserve fleet by two Moran tugboats which also escorted the Amaryllis downstream with the C-2s lashed together astern, then through the Upper Harbor and Narrows out to the vicinity of Ambrose Light. There the Amaryllis played out two separate cables so that one of the C-2s would ride 1,500 feet and the other 2,400 feet astern of the big tug. This position will be maintained for most of the voyage halfway around the world. They will be towed separately through the Panama Canal.

Gannet Freighting Inc., general agents for Tokyo Shipping Co., Ltd., said that a somewhat smaller ocean tug, the Freesia, also owned by Tokyo Shipping, is expected in New York to pick up two freighters, the Exchange and the Examiner, formerly operated by American Export Isbrandtsen Lines.

The Amaryllis made maritime history two years ago for the longest oil rig tow on record. This was the towing of The Offshore Company's 4-leg rig Jubilee almost 14,000 miles from Houston, Texas, around the Cape of Good Hope to Freemantle, Australia. Most recently, she towed the rig North Star nearly 12,000 miles from Southampton, England, to Singapore.

Built in Japan four years ago, the Amaryllis has two diesels developing 8,000 ihp. The first ocean tug to be fitted with Kort nozzle rudders, she has a proved Bollard pull of 105 tons. The 5,000-ihp Freesia was built in Japan in 1969.

Star Iron To Build And Sell Karricon Straddle Carriers

Star Iron & Steel Co., Tacoma, Wash., has been granted an exclusive licensing agreement from Rubery Owen Co., Ltd., Staffordshire, England, to manufacture and sell Karricon self-propelled straddle carriers in the United States and its territories, according to Charles Allen, president of Star. Karricons are already being sold throughout the world, exclusive of the United States, by Rubery Owen. Star Iron & Steel Co. plans to market the vehicles they produce under the name of Star Karricon, Mr. Allen added. "This will broaden Star's capability to offer clients a

complete line and service in the area of container handling systems," he added. Star now manufactures Starporter cranes and other container, bulk and general cargo handling equipment. They have 24 Starporter container cranes installed or on order for facilities all over the world.

Two models of the Star Karricon will be offered. Model 3042 has a capacity up to 30 tons and can stack containers two high or transfer containers one over one. Model 3043 also has a capacity up to 30 tons, but has the ability to stack containers three high and transfer containers one over two.

Both models also feature a telescopic spreader which adjusts to any size container up to 40 feet and can pick up twisted containers or those resting on uneven ground; a very small maximum outside turning radius of 405 inches with load (overall length is no longer than a 480-inch container); full access to all service areas and modular replacement units for the hoist and drive motors; and four-wheel drive, steering and braking for maximum control. Both models are capable of handling a great variety of industrial applications, particularly long and abnormal loads such as steel coils, girders, bars, pre-stressed concrete beams, pipes, timber and large assemblies. Star Karricon is adaptable to these loads by the use of special fittings, such as clamps, electro-magnets, grapples and vacuum sling lifts.

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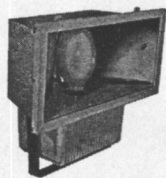
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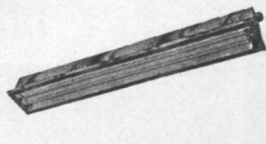
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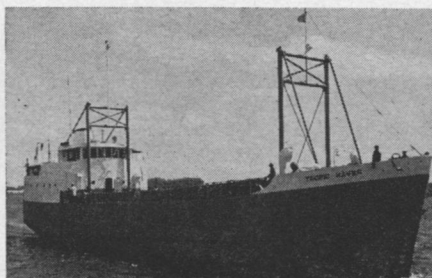
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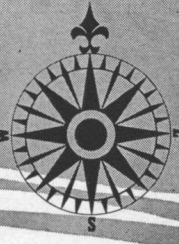
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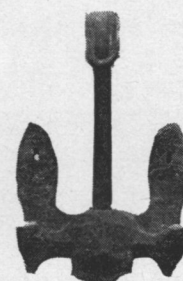
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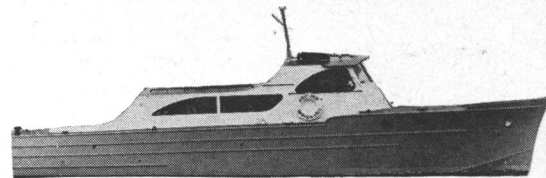
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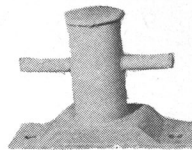
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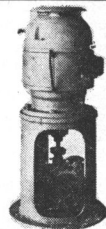
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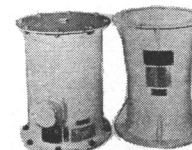
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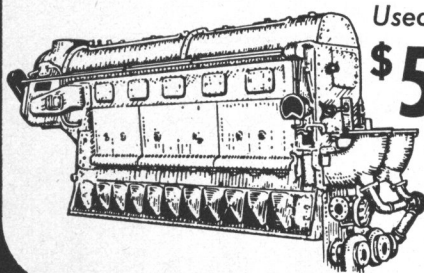
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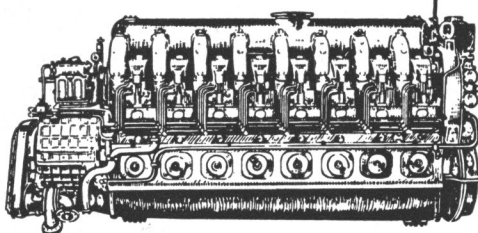
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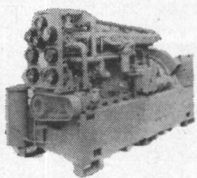
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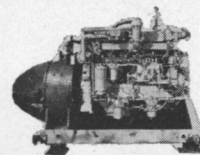
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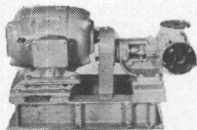
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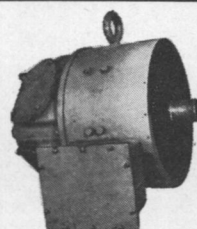


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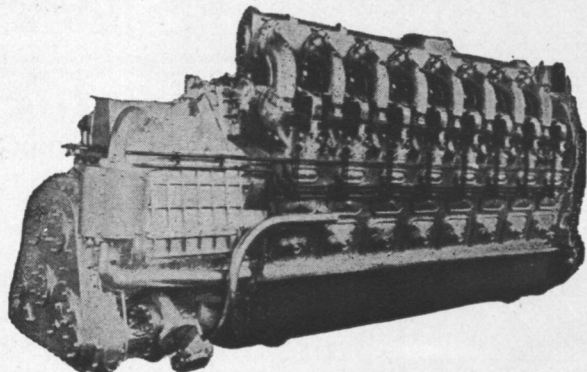
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Complete — Clean — And
in very good condition

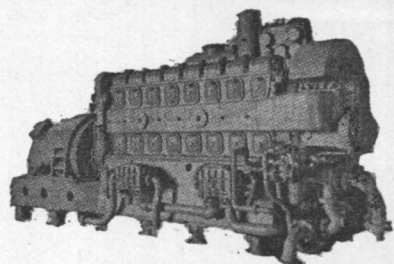
AS REMOVED FROM U. S. NAVAL VESSELS

1700 H.P. @ 750 R.P.M.
YOUR THOROUGH INSPECTION INVITED

NOW! \$6750

F.O.B.
BALTIMORE

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



As-Is- While They Last at This Price

Engine: 6½" bore x 7" stroke — 1200 — driving 200 KW
Westinghouse generator: 440 volts — 3-phase — 60-cycle —
321 amps — 80% power factor at 1200 RPM.

WITH 200 KW WESTINGHOUSE
GENERATORS. YOUR THOROUGH
INSPECTION IS INVITED.

NOW! \$2750

F.O.B.
BALTIMORE

THE BOSTON METALS CO.

313 E. Baltimore Street

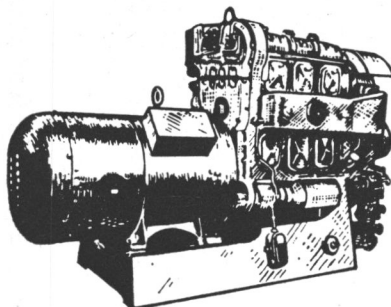
(301) 539-1900 or 355-5050

Baltimore, Md. 21202

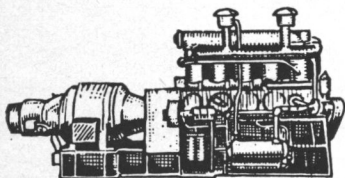
MARINE DIESEL GENERATORS

SUPERIOR, 10 KW, 120 Volts DC.
HERCULES DOOC, 10 KW, 120 DC, Radiator cooled.
CATERPILLAR, radiator cooled, 15 KW, 120/240 Volts DC.
GM, 4-71, 60 KW, 220/440 AC.
HERCULES, DJXC, 25 KW, 120 DC.
CUMMINS A1, 30 KW, 120 DC.
MURPHY, Model ME 66, radiator cooled, 75 KW, 120/240 Volts DC.
CATERPILLAR DIESEL ENGINE, Model D13000, 167 HP, 900 RPM, with Louis-Allis Generator, 85 KW, 220 AC.
LORIMER F5SS, 75 KW, 120/240 DC, radiator cooled.

GM-3-268A, 100 KW, 240/120 Volts DC.
SUPERIOR, Model 1DB-8 100 KW, 450/3/60.
GM, 8-268, 300 KW, 260/345 DC.



GENERAL MOTORS Model 3-268A, 152 BHP, 1200 RPM, with 100 KW Generators, 450 Volts AC, 3 phase, 60 cycles.
GM 8-268A, radiator cooled, air start with Fairbanks-Morse Generator, 300KW, 440/3/60, complete with switchboard.
FAIRBANKS-MORSE, 38 E 5/4, 300 KW, 260/345 DC.



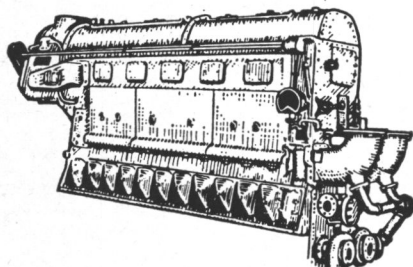
LORIMER 100 KW, 450/3/60 Volts DC.
BUDA 6DHG691, 60 KW, 120 Volts DC.
SUPERIOR GBD-8, 100 KW, 240/120 Volts DC.

FAIRBANKS-MORSE

MARINE DIESEL ENGINES

matched pair . . . Model 38D8 1/8

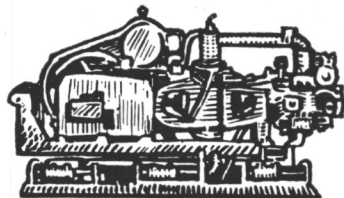
1 Port
 1 Starboard
 Used condition
 1800 HP, 800 RPM,
 2 cycle, 8 1/2" bore,
 10" stroke, Air Start,
 Complete with
 Westinghouse
 Reduction gears
 2,216:1 ratio, with
 Hydraulic Coupling



4-COOPER-BESSEMER
MODEL LS-8-DR
 1300 HP
 277 RPM
 Direct
 Reversing,
 Turbo charged.

AIR COMPRESSORS

INGERSOLL-RAND, 50 CFM, 150 PSI, 20 HP, 440/3/60.
INGERSOLL-RAND, 150 CFM, 600 PSI, Model 75, with Westinghouse Motors, 75 HP, 230 DC.
INGERSOLL-RAND, 50 CFM, 600 PSI, Model 30, with Westinghouse Motors, 15 HP, 230 DC.
CHICAGO-PNEUMATIC, 161 CFM, 100 PSI, 40 HP, 230 DC.
WESTINGHOUSE Air Brake, 246 CFM, 140 PSI, with 50 HP Motors, 440/3/60.



WORTHINGTON, 175 CFM, 125 PSI, with 50 HP Motors, 440/3/60.
JOY, Class WG82, 2-stage rated 100 CFM at 300 PSI, water cooled, size 7" x 3 3/4" x 7" with Reliance motor, 30 HP, 220/440/AC/3/60.

STEAM AIR COMPRESSORS Westinghouse Air Brake Co., Size 9 1/2 x 9 x 10 Vertical.

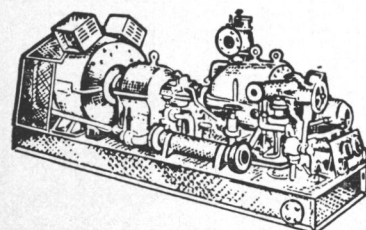
TURBINE GENERATORS

JOSHUA HENDY Turbines, 300 PSI, temperature 550° F with Westinghouse Generators, 300 KW, 120/240 Volts DC.
WORTHINGTON Turbines, Form S-4, 440 PSI, 740° F, driving on same common shaft a 250 KW Generator, 440/3/60, and a 90 KW Generator, 125 Volts DC.
WORTHINGTON Turbines, Form S-4, 440 PSI, 740° F, with Crocker-Wheeler Generators, 300 KW, 120/240 Volts DC.
GENERAL ELECTRIC, DORV 325, 300 KW, 440/3/60.

ALLIS-CHALMERS, 440 PSI, 740° F, with Allis-Chalmers Generators, 300 KW, 120/240 DC.
TERRY Turbines, Type TM5, 440 PSI, 750° F, with Crocker-Wheeler Generators, 300 KW, 120/240 DC.
GENERAL ELECTRIC Turbine, Type FN3-FN24, Steam 265#G., Serial 54110, with G.E. Generator, 750 KW, 440/3/60, Frame 985 Y, Serial 580447.
2-G.E. DORV Turbines, with G.E. Generators, 200 KW, 440/3/60.

CLYDE 17-DE-90 WHIRLEY

Lifting Rate: 25 tons @ 50 Ft. Radius @ 50 to 60 FPM.—
Boom: 80' to headblock (with 10' whip)
Whip: 10 tons @ 125 FPM—2 part line
Track Centers: 20'—Engine: Cummins HBIS 601, 180 HP supercharged, elec. start—
Motors: Each leg (4 tot.) 7 1/2 HP, 230 DC.—
Power: Diesel electric (DC)



DE-LAVAL Turbines, 450 PSI, 750° F, with Crocker-Wheeler Generators, 300 KW, 120/240 DC.

**RED
HOT
BUYS**
from

ZIDELL EXPLORATIONS, INC.

if it's on a ship we probably have it!

NEED IT NOW?



Contact
Ralph E. Ingram

Telex:
36-701

3121 S.W. Moody
 Portland, Ore. 97201
 (503) 228-8691

Submarine Type PROPULSION MOTORS AND GENERATORS

ELLIOTT MOTORS, 1362 HP, 415 Volts DC, 2585 Amperes, Design 28AN02.

ELLIOTT GENERATORS, 1122 KW, 720 RPM, 415 Volts DC, 2705 Amperes, Design 37C02.

GENERAL ELECTRIC MOTORS, 1375 HP, 415 Volts DC, 2600 Amperes, Type MCF.

GENERAL ELECTRIC GENERATORS, 1100 KW, 750 RPM, 415 Volts DC, 2650 Amperes, Type MCF.

ELECTRIC MOTORS 230 VOLTS D.C.

1—250 HP, G.E., Type CY, Form HJ, Model 24G, 1200 RPM Horizontal, 2 B.B., Shunt Wd.

2—220 HP, G.E., Type CDM—1348S, Form HA, Model 25G 339, 1800 RPM, Stab. Sh. Wd. Horizontal, 2 B.B.

6—100 HP, Westinghouse, Type SK, FR. 163, Style 1B4631 1150 RPM, Shunt Wd. Horizontal, 2 B.B.

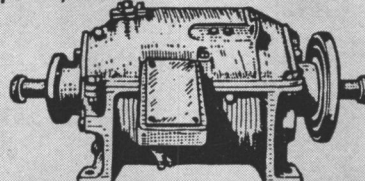
2—55 HP, Electro-Dynamic, FR 25-SL, 550 RPM, Compound Wound, Single Ball Bearing. Originally for high pressure Air Compressor.

1—40 HP, Allis-Chalmers, 1750 RPM, Compound Wound, Horizontal, 2 B.B.

1—65 HP, WESTINGHOUSE, 560 RPM, Type CK, Form 10, 260 Ampere, B.B., D.P., Compound Wound.

2—220 HP, G.E., 1800 RPM, Type CDM—1348S, Model 25G 339, 775 Ampere, B.B., D.P., Stab. Shunt.

4—9.3 HP, Westinghouse, 640/852 RPM, Type SK, FR. 93.



52—WESTINGHOUSE 50 HP

230 Volts DC, 600 RPM, Type CK, Frame 9, Compound Wound, 181 Amperes, Double Shaft, Totally Enclosed—Waterproof, Horizontal, Approximate Weight 2000 lbs.

CARGO HOISTER BLOCKS

5 ton rated, steel, as removed from surplus Liberty Ships. Manufactured by Young, Draper, etc. 12" or 14" sizes, your choice

\$34.50 each



\$39.50 each with pull test certificates.

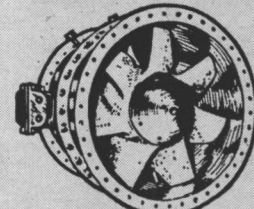
ESCAPE SCUTTLES

18" Steel
 Quick Acting
 Complete
 with coaming.
 Wheel control
 from above and below.



\$95.00 ea., F.O.B. Portland

AXIAL FLOW FANS



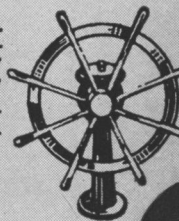
LaDel,
 STURTE-
 VANT
 etc.

Rebuilt—Guaranteed
 In 440 AC, in 115 DC, and in 230 DC, and in sizes 1 HP through 20 HP. Completely reconditioned.

STEERING STANDS

Brass Steering Stands. Complete with angle indicator on top, used 11" base diameter by 35 1/2" high, and with 42" over-all, 8-spoke brass steering wheel.

\$225.00 each

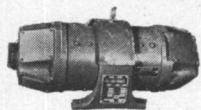


**ALSO SEE ZIDELL'S 5 PAGE SPREAD
 IN ALTERNATE ISSUES OF MARITIME REPORTER**

M.G. SETS

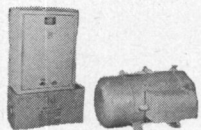
115 VOLTS D.C. TO

115 VOLT SINGLE PHASE A.C.



NEW JANETTE 1 KVA SETS

INPUT: 2 HP 115 volts DC—3.5 amps.—1800 RPM. OUTPUT: 1 KVA—120 volts single phase A.C.—.8 PF—40°C rise.



UNUSED SURPLUS 1 KVA SETS

INPUT: 1.75 HP—115 volts DC—17 amps.—1800 RPM. OUTPUT: 1 KVA—115 volts—8.7 amps—60 cycle single phase—0.9 PF. Unit is self excited and will carry load immediately on starting. Regulation \pm 5%. Complete with magnetic starter & spare parts. Units designed and built to rigid Navy specs. SIZE: 19.5" long—26.5" wide—16" high. Weight 285 lbs. SPARES: 85 lbs. CONTROLS: 20" x 15" x 10"—75 lbs.

\$28950

LOUIS ALLIS MG SETS JUST RECEIVED—UNUSED

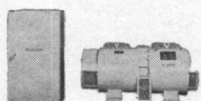


INPUT: 10 HP—115 volts DC—78 amps.—1800 RPM. OUTPUT: 5 KW—115 volts single phase A.C. 4-bearing—with 10 HP 115 volt D.C. magnetic starter.

FIRST TIME IN A LONG TIME THAT 5 KW UNITS ARE ON THE MARKET

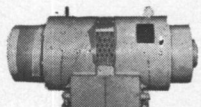
230 VOLT D.C. INPUT—115

VOLT SINGLE PHASE OUTPUT



NEW—UNUSED MG SETS

Mfg. by KATO Electric Co. INPUT: 25 HP—115 volts DC—160 amps.—1800 RPM. OUTPUT: 12.5 KVA—120 volts single phase. Westinghouse magnetic controller. 36"x20"x18 1/2".



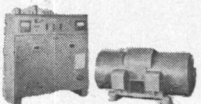
FIDELITY ELECTRIC MG SETS

INPUT: 30 HP—230 volts DC 120 amps 1800 RPM. OUTPUT: 20 KW—25 KVA—120 volts AC 208 amps—single phase. Excellent condition.



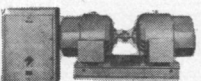
UNUSED CONTINENTAL MG SET

INPUT: 7 1/2 HP 230 volts DC 36 amps 1800 RPM. OUTPUT: 5 KW 10 KVA 120 volts single phase 60 cycles AC.



25 KW MG SETS 115 DC to 440/3/60 A.C.

INPUT: 40 HP—115 volts DC—290 amps—1800 RPM. OUTPUT: 31.5 KVA—25 KW—440/3/60. Complete with motor and generator control.



30 KW MG LIGHTING SETS FOR C-3, C-4 VESSELS

Unused—62.5 HP 2 hours; 50 HP 24 hours. 230 volts DC 186 amps 1750 input. OUTPUT: 30 KW 24 hours—37.5 KW 2 hours—120 volts DC—250 amps—1750 RPM. With spare armature and parts.

INQUIRE ABOUT MANY MORE
SIZES NOT LISTED HERE

THE BOSTON METALS COMPANY

313 E. Baltimore St. Baltimore, Md. 21202
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G.E. TURBINE ROTOR

For G.E. DORV —618N
Serial 70717 GEI 17716

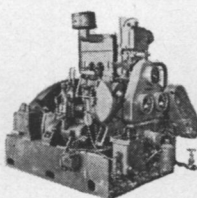
Steam conditions: 525 P.S.I.—350°F superheat or buy complete 450 KW turbo generator set with S-193 reduction gear. Will upgrade to 600 KW.

PRICED TO SELL

THE BOSTON METALS COMPANY

313 E. Baltimore St. Baltimore, Md. 21202
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UNUSED 10KW SUPERIOR DIESEL GEN. SETS



GENERATOR: Delco 10-KW—120 volts DC—83.3 amps—1200 RPM. ENGINE: Superior diesel—2 cylinder—4 1/2" x 5 3/4"—15 HP—heat exchanger cooled.

PRICED TO SELL!
While They Last

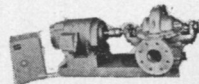
\$1395

**ONLY 9
UNITS LEFT**

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UNUSED AURORA PUMP



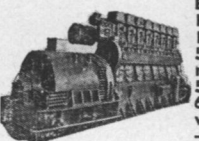
\$877.77

300 GPM—37" head—5 HP—120 volts DC Centrifugal Pump. Bronze—size 5x4—flanged. MOTOR: Reliance—super T.D.C. Electric Motor—5 HP—120 VDC—36.8 amps—1750 RPM—Frame L216A—with control by Cutler-Hammer. Excellent condition. Latest USN surplus.

THE BOSTON METALS COMPANY

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UNUSED 500 KW 120/240 VOLT D.C. BALDWIN/ALLIS CHALMERS DIESEL GENERATOR SET

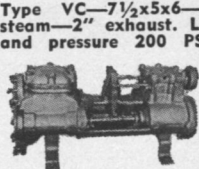


ENGINE: Baldwin-DeLaverne 725 HP—12-2/3"x15 1/2"—8 cyl.—500 RPM—air starting. Dry weight 54050 lbs. GENERATOR: Allis-Chalmers 500 KW—120/240 V.D.C.—500 RPM—550 RPM overspeed. 60°C rise—class B insulation—3-wire—25% unbalance—2083 amps—stab. shunt—open—drip-proof—self-ventilated—8 poles.

THE BOSTON METALS COMPANY

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UNUSED WORTHINGTON BRONZE-FITTED HORIZONTAL MARINE DUPLEX PUMPS



Type VC—7 1/2"x5x6—4" suction—3" discharge 1 1/2" steam—2" exhaust. Liquid pressure to 250 lbs.—steam and pressure 200 PSI. Capacity 100 GPM—100 PSI @ 80 strokes/minute. OAL 48 1/4" 20"x23"—weight 930 lbs. Suitable for port feed, general service, evaporator feed, fuel oil and other pressure service.

\$775 each

THE BOSTON METALS COMPANY

313 E. Baltimore St. Baltimore, Md. 21202
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HAZARDOUS DUTY DEEP WELL PUMP

4x4—for cargo oil, water, gasoline, bilge, etc. MOTOR: Westinghouse—U.L. approved for hazardous duty—3 H.P.—220/440/3/60—3450 R.P.M.—9 foot shaft. 300 G.P.M. @ 60'—4 units available.

\$447.50 each

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HIGH PRESSURE STARTING AIR TANKS



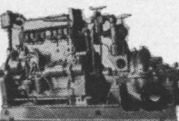
600 lb working pressure—1200 lb test pressure—16 1/2" diameter—7' 3" overall length.

\$26950

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DIESEL FIRE & GENERAL SERVICE PUMP 500 PSI @ 100 lbs—with self-priming attachment

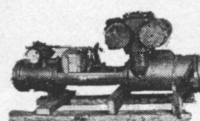


Mfg by John Reiner & Co.—DP-60—diesel engine 4 cyl. Continental—electric starting—42 HP—1800 RPM. PUMP: 500 GPM—100 PSI—4" suction—4" discharge. Unused.

THE BOSTON METALS COMPANY

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UNUSED 10x9x12 VERTICAL SIMPLEX FUEL OIL TRANSFER PUMPS



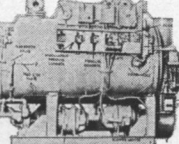
Furnished on some T2 tankers. 160 GPM Bunker C—viscosity 70 to 700 SSF 122°F @ 100 lbs discharge press. WP steam 150#—exhaust 10#. 1 1/4" Steam Inlet—1 1/2" exhaust. 4" pump suction—3 1/2" discharge.

\$1250

THE BOSTON METALS COMPANY

313 E. Baltimore St. Baltimore, Md. 21202
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CYCLOTERM SELF-CONTAINED AUX. BOILERS



Oil burning 0 2500 lbs/hr. Design pressure 125 lbs—WP 100 lbs—2-pass. Complete with self-contained motor-driven blower 5HP—440/3/60—Fuel Oil Service pump 3 HP—440/3/60. Burner is pressure atomizing type.

\$795.00 each

YOUR INSPECTION INVITED

THE BOSTON METALS COMPANY

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14" ALL-BRONZE PORTLIGHTS with deadlights

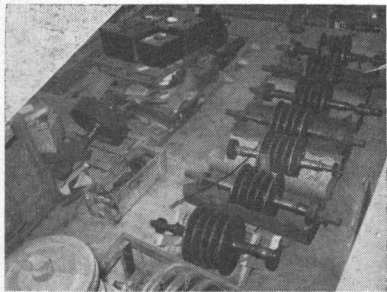
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NEW & REBUILT EQUIPMENT FOR IMMEDIATE DELIVERY

NEW AND REBUILT TURBINE ROTORS

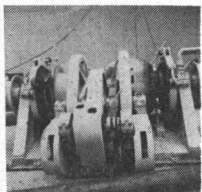
We have the largest stock of turbine rotors in the United States for C1, C2, C3, and T2 vessels



- One (1) rebuilt Rotor for **Westinghouse** 8500 HP C3 vessel
- One (1) rebuilt **General Electric** 11 stage 8500 HP C3 Turbine Rotor
- One (1) new 6000 HP **General Electric** C2 Rotor
- One (1) rebuilt **DeLaval** 8500 HP C3 Turbine Rotor
- One (1) new 6000 HP **General Electric** LP Rotor for Carolina C2 type vessel
- One (1) new 6000 HP **General Electric** LP Rotor for Moore C2 type vessel
- One (1) new 6000 HP **General Electric** Turbine Rotor for AP 2 type vessel
- One (1) new 6000 HP **General Electric** LP Rotor for AP 2 type vessel
- One (1) rebuilt 6000 HP Rotor, manufactured by **Allis Chalmers**, for AP2 vessels
- One (1) new LP 6000 HP LP Rotor, manufactured by **Allis Chalmers**, for AP2 type vessel
- One (1) rebuilt 6000 HP, HP Rotor manufactured by **Westinghouse** for AP2 type vessel
- One (1) new 6000 HP, LP Rotor for **Westinghouse** AP2 type vessel
- One (1) rebuilt 6000 HP, LP **DeLaval** Rotor for C2 type vessel
- One (1) new 4000 HP **Westinghouse** Rotor for C1A type vessel
- One (1) new 4400 HP **Westinghouse** HP Rotor for C1 type vessel

We also have new Gears, Turbine Rotors and Armatures, for Westinghouse, Allis-Chalmers, General Electric and DeLaval Auxiliary Turbo Generators, for C1, C2 and C3 vessels. This equipment is offered at less than cost of removing it from scrapped vessels.

REBUILT ANCHOR WINDLASS



One (1) rebuilt, equal to new, American Engineering, 13x14 steam anchor windlass, capable of handling 2-3/8ths chain; wildcats can be changed to handle 2-11/16ths chain. Replacement cost for a windlass of this type is approximately \$60,000. We can offer this units at \$15,000 FOB West Coast, with ABS Certificate.

Five (5) new Worthington main air ejectors, complete with valves and intercoolers for C2, C3
New price: \$2,950.00 each
Our price: **\$395.00 each**

NEW AND REBUILT

C2, C3, C4 and T2 equipment for less than price of equipment from scrapped vessels

One (1) new **9500 GPM @ 40' hd.** Main Circulating Pump, Worthington, complete with 100 HP, 230 V DC Westinghouse motor for C2

New price: \$14,500.00
Our price: **\$6,900.00**

One (1) new **150 GPM @ 1465 ft. hd.** Main Feed Pump for Carolina C2 vessel, Worthington, complete with 115 HP, 440 PSI Worthington S2RM Steam Turbine

New price: \$10,500.00
Our price: **\$3,750.00**

One (1) new **408 GPM**, Dean Bros. 10x10x12 horizontal duplex general service pump

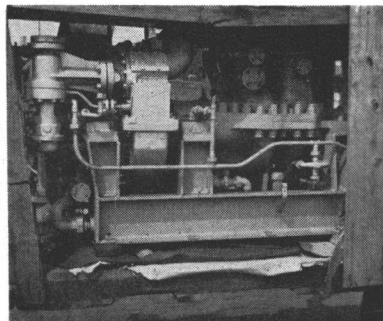
New price: \$3,900.00
Our price: **\$1,900.00**

One (1) new **1600 GPM @ 33.6' hd.** Allis Chalmers Ballast Pump, driven by Coppus TF16, 18 HP, 1800 RPM, 220# Steam Turbine

New price: \$7,000.00
Our price: **\$2,750.00**

Two (2) new **26000 GPM @ 25' hd.** vertical, all bronze, circulating pumps, Warren, complete with 300 HP, 450/600# vertical Westinghouse Steam Turbines

New price: \$35,000.00 each
Our price: **\$7,500.00 each**



Four (4) new **375 GPM @ 165' hd.** two stage condensate pumps, all bronze, Buffalo, complete with Terry Steam Turbines, 25 HP, 575# steam pressure. Can be furnished with AC motors

New price: \$8,500.00 each
Our price: **\$2,750.00 each**

Five (5) new **3300 GPM @ 25' hd.** vertical, bronze, circulating pumps, Warren, driven by Terry, type ZS1, Turbines, 410# steam pressure

New price: \$7,000.00 each
Our price: **\$1,800.00 each**

One (1) new **6000 GPM @ 30' hd.** Allis Chalmers circulating or ballast pump, complete with 35 HP, Coppus Turbine, 275# steam pressure

New price: \$6,800.00
Our price: **\$2,900.00**

One (1) new **500 GPM @ 175' hd.** Warren, fire and Butterworth pump, driven by 100 HP, 440# steam turbine—pump all bronze

New price: \$9,000.00
Our price: **\$3,750.00**

One (1) new **350 GPM**, 750 PSI, main boiler feed pump, manufactured by DeLaval, driven by DeLaval Turbine, 590# steam pressure, casing tested to 1125 PSI, complete with Leslie Regulating Valve

New price: \$15,800.00
Our price: **\$5,900.00**

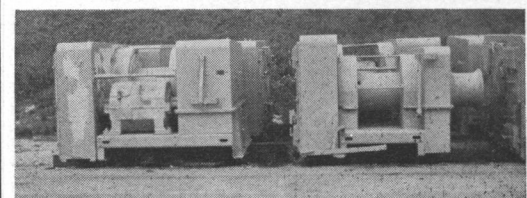
One (1) Goulds 8x6 all bronze auxiliary circulating or ballast pump, **1000 GPM**, 60' hd., driven by 20 HP, 1750 RPM, 230 V DC motor, unused

New price: \$3,900.00
Our price: **\$1,950.00**

One (1) General Electric, 200 HP, 440 V, T2 Cargo Pump Motor, 1750 RPM, used, in excellent condition
\$1250.00

One (1) complete set of gears, G.E. type S162, Form E, unused, for 300 KW Generator, C2 type vessels
New price: \$12,000.00
Our price: **\$2,850.00**

One (1) new 5" cast steel Andale duplex Strainer
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Six (6) U1 Unit Winches, 5 ton @ 118' per minute, driven by 50 HP, 230 V DC, General Electric Motors, complete with all controls, in water tight cabinets. Equal to new.

New price: \$10,000.00 each
Our price: **\$1,995.00 each**

Four (4) U5 Unit Winches, 30 ton at 30' per minute, driven by 50 HP, 230 V DC General Electric motors and controllers, in water tight cabinets

New price: \$14,000.00 each
Our price: **\$2,250.00 each**

One (1) rebuilt Tailshaft for Federal C2 vessel \$5500.

One (1) used Tailshaft for "Esso Zurich" class vessel, complete with liner
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Three (3) rebuilt 1250 KW, 440 V AC marine type General Electric Generators, 3600 RPH

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Four (4) new **95 GPM @ 46' hd.** horizontal centrifugal circulating pumps manufactured by Condenser Service Co. 1800 RPM—on base

New price: \$495.00 each
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Eighteen (18) new **100 GPM @ 100 PSI**, all bronze fuel oil transfer pumps, Blackmer, driven by 15 HP, 440 V AC General Electric gear head motors, 1750/400 RPM, vertical

New price: \$1,875.00 each
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Four (4) new 200 KW General Electric Turbo Generators, 400# steam pressure, 440 V, 3 ph. 60 cy. AC output

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Turbines and reduction gears for low pressure cargo pumps:

Turbine: 665 HP, Westinghouse, Type C225, 250# steam pressure, 10# exhaust, complete with reduction gear to 1750 RPM

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One (1) new 300 KW **Worthington**, Allis Chalmers Turbo Generator:

Turbine: Worthington, 440#, 28" exhaust, driving through reduction gear, 120/240 V DC generator manufactured by Allis Chalmers, 1200 RPM marine type

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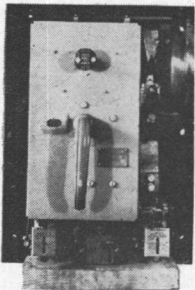
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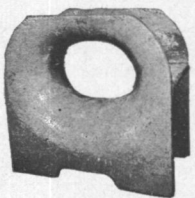
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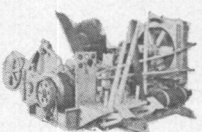


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Terminal Annex, Los Angeles, Calif. 90054
Johnson Rubber Co., Marine Division, Middlefield, Ohio 44062
Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wis. 53186

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York, N.Y. 10019

Refineria Panama, S. A. 277 Park Ave., New York, N.Y. 10017
The West Indies Oil Co., Ltd., St. John's Antigua, W. I.

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Fawick Airflex Div. Power Transmission Systems, 9919 Clinton Rd.,
Cleveland, Ohio 44111
Wichita Clutch Co., Inc., Wichita Falls, Texas 76307

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Carboline Co., 328 Hanley Industrial Court, St. Louis, Mo. 63144
Enjay Chemical Company, 60 West 49th St., New York, N.Y. 10020
Farbail Company, 90 West St., N.Y., N.Y. 10006
Intercoastal Corp., 2320 Edgewater Ave., Baltimore, Md. 21222
Patterson-Sargent, P.O. Box 494, New Brunswick, N. J.
Porter Paint Co., Louisville, Ky. 40201

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Ameron Corrosion Control Div., Brea, Calif. 92621
Lighter Aboard Ship, Inc., 225 Baronne St., New Orleans, La. 70112
Paceco, Div. Fruehauf Corp., P.O. Drawer E, Alameda, Calif. 94501
RPC Corp., Marine Sales, 200 Park Ave., New York, N.Y. 10017
Star Iron & Steel Co., 326 Alexander Ave., Tacoma, Wash. 98421
York Trailer Ltd., Corby, Northants, England

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American Engineered Products Co., Box 74, McKees Rocks, Pa. 15136
W. W. Patterson Co., 830 Brockett St., Pittsburgh, Pa. 15233
Pro Par Div. Fruehauf Corp., 10940 Harper Ave., Detroit, Mich. 48232
Seasafe Transport AB, Torstenssonsgatan 3, S 114 56 Stockholm,
Sweden

CONTROL SYSTEMS

Galbraith-Pilot Marine Corp., 600 Fourth Ave., Brooklyn, N.Y. 11215
General Electric Industry Control Dept., Salem, Virginia
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
Kongsberg Systems, Inc., 10 De Angelo Dr., Bedford, Mass. 01703
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of
Sperry Rand Corp.

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Carboline Co., 328 Hanley Industrial Court, St. Louis, Mo. 63144
Corrosion Dynamics, 1100 Walnut St., Roselle, N.J. 07203
Intercoastal Corp., 2320 Edgewater Ave., Baltimore, Md. 21222
Radiator Specialty Co., 1400 Independence Blvd., Charlotte, N.C.
28205

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Duchess Baker Mfg. Co., Superior, Wis.
Hoffman Rigging & Crane Service, 560 Cortlandt St., Belleville,
N.J. 07109
Kocks Pittsburgh Corp., Four Gateway Center, Pittsburgh, Pa. 15222
Lidgerwood Mfg. Co., (Superior Lidgerwood Mundy Corp.), 1010
Third Ave., New York, N.Y. 10021
M.A.N. Maschinenfabrik Augsburg-Nurnberg AG, Werk Augsburg,
West Germany
Paceco, Div. Fruehauf Corp., P.O. Drawer E, Alameda, Calif. 94501
Hensen-Rotterdam, P.O. Box 5040, Rotterdam, Holland
Star Iron & Steel Co., 326 Alexander Ave., Tacoma, Wash. 98401

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Blackburn Marine Equipment, 6105 England St., Houston, Tex. 77021
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Lidgerwood Mfg. Co., (Superior Lidgerwood Mundy Corp.), 1010
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Nashville Bridge Co., P.O. Box 239, Nashville, Tenn. 37202
Red Fox Machine & Supply Co., P.O. Drawer 640, New Iberia, La.
70560

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Western Gear Corp., Heavy Machinery Div., Everett, Wash. 98201

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Kiene Diesel Accessories, Inc., P.O. Box 216, Franklin Park, Ill. 60131

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N.J. 07644
Caterpillar Tractor Co., Industrial Div., 100 N.E. Adams St., Peoria,
Ill. 61602
Coit Industries Inc., Power Systems Div., Beloit, Wisc. 53511
Electro-Motive Division General Motors, La Grange, Illinois 60525
Fiat, Turin, Italy, U.S.A. 375 Park Ave., New York, N.Y. 10022
Golden Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231
M.A.N. Maschinenfabrik Augsburg-Nurnberg AG, Werk Augsburg,
West Germany
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Walz & Krenzer, Inc., 20 Vesey St., New York, N.Y. 10007

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Galbraith-Pilot Marine Corp., 600 4th Ave., Brooklyn, N.Y. 11215
L. F. Gaubert & Co., 700 So. Broad St., New Orleans, La. 70150
Merrin Electric, 162 Chambers St., New York, N.Y. 10007
Oceanic Electrical Mfg. Co., Inc., 148 Perry Street, N.Y. 10004

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

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Nashville Bridge Co., P.O. Box 239, Nashville, Tenn. 37202
Robvon Backing Ring Co., 675 Garden St., Elizabeth, N.J. 07207

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Dravo Corporation, Neville Island, Pittsburgh 25, Pa.

GALLEY RANGES

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

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Valad Elec. Heating Co., 71 Cortlandt St., Tarrytown, N.Y. 10591

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Bird Johnson Co., 883 Main St., Walpole, Mass. 02081

Vickers, MGO Div., Troy, Mich. 48084

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Bailey Carpenter & Insulation Co., Inc., 74 Sullivan St., Brklyn, N.Y. 11231

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Carboline Co., 328 Hanley Industrial Court, St. Louis, Mo. 63144

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Philadelphia Gear Corp., Schuylkill Expressway, King of Prussia,
Pa. 19406

Western Gear Corp., Industrial Products Div., P.O. Box 126, Belmont,
Calif. 94003

MARINE NAVIGATION EQUIPMENT & AIDS

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Edo Western Corp., 2645 So. 2nd St., W. Salt Lake City, Utah 84115

ITT Decca Marine, Inc., 386 Park Ave. South, New York, N.Y. 10016

ITT Mackay Marine, 133 Terminal Ave., Clark, N.J. 07066

Marquardt Corp., 16555 Saticoy St., Van Nuys, Calif. 91406

National Marine Service, 1750 So. Brentwood Blvd., St. Louis, Mo.

Radiomarine Corp., 20 Bridge Avenue, Red Bank, N.J. 07701

RCA Service Co., A Division of RCA, Marine Communications and

Navigation Equipment Service, Bldg. CHIC-225, Camden, N.J. 08101

Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of

Sperry Rand Corp.

Tracor, Inc., 6500 Tracor Lane, Austin, Texas 78721

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Beaver Tool & Machine Co., P.O. Box 94717, 525 S.E. 29th St.,

Oklahoma City, Okla. 73109

Nicola Joffe Corp., P.O. Box 2445, 445 Littlefield Ave., So. San

Francisco, Calif. 94080

Kearfott Marine (Div. of The Singer Co.) 21 West St., New York,

N.Y. 10006

Chas. Lowe Co., 6340 Christie Ave., Emeryville, Calif. 94608

Merrin Electric, 162 Chambers St., New York, N.Y. 10007

Pacific Coast Eng. Co., P.O. Drawer E, Alameda, Calif. 94506

Stow Mfg. Co., 225 Shear St., Binghamton, N.Y. 13902

Vokes Filter Div. (Cardwell Machine Co.), Cardwell and Castle-

wood Rd., Richmond, Va. 23221

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Midland Insurance Co., 29 Broadway, New York, N.Y. 10006

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Natale Machy & Tool Co., Box 95, Carlstadt, N.J. 07022

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Buehler Corp., 9000 Precision Drive, Indianapolis, Ind. 46236

Combustion Engineering, Inc., Windsor, Connecticut 06095

De Laval Turbine, Inc., 853 Nottingham Way, Trenton, N.J. 08602

General Electric Co., Gas Turbine Dept., Schenectady, N.Y. 12305

Murray & Tregurtha, Inc., 2 Hancock St., Quincy, Mass. 02171

Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014

Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523

Western Gear Corp., Precision Products Div., P.O. Box 190, Lyn-

wood, Calif. 90262

MARINE RADIO COMMUNICATIONS EQUIPMENT

Collins Radio Co., M/S 416-118, Dallas, Texas 75207

Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011

ITT Decca Marine, Inc., 386 Park Ave. South, New York, N.Y. 10016

ITT Mackay Marine, 133 Terminal Ave., Clark, N.J. 07066

E. F. Johnson Corp., Waseca, Minn. 56093

Paul J. Plishner, 45 West 45 St., New York, N.Y. 10036

Radiomarine Corp., 20 Bridge Avenue, Red Bank, N.J. 07701

Raytheon Marine Products Operation, 213 East Grand Avenue, South

San Francisco, California 94080

RCA Service Co., A Division of RCA, Marine Communications and

Navigation Equipment Service, Bldg. CHIC-225, Camden, N.J. 08101

NAVAL ARCHITECTS AND MARINE ENGINEERS

BG Marine Services, Div. of Genge Industries, Inc.,

4419 Van Nuys Blvd., Sherman Oaks, Calif. 91403

Breit Engrg. Inc., 441 Gravier St., New Orleans, La. 70130

Coast Engineering Co., 711 W. 21st St., Norfolk, Va. 23517

Commercial Radio Sound Corp., 652 First Avenue, N.Y., N.Y. 10016

Crandall Dry Dock Engrs., Inc., 238 Main St., Cambridge, Mass. 02142

Cushing & Nordstrom, 50 Trinity Place, New York, N.Y. 10006

Design Associates, Inc., 3308 Tulane Ave., New Orleans, La. 70119

Designers & Planners, Inc., 114 Fifth Ave., New York, N.Y. 10011

M. Mack Earle, 103 Mellor Ave., Baltimore, Md. 21228

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14 Vanderventer Ave., Port Washington, N.Y. 11050

Friede and Goldman, Inc., 225 Baronne St., New Orleans, La. 70112

Gibbs & Cox, Inc., 21 West St., New York, N.Y. 10006

John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston,

Mass. 02110

Morris Guralnick, Associates, Inc., 583 Market St., San Francisco,

Calif. 94105

J. J. Henry Co., Inc., 90 West St., New York, N.Y. 10006

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C. T. Ilariucci & Associates, Tourism Pier #3, San Juan, Porto Rico

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Ethyl Corp. Marine Div. Perolin Co., New York, N.Y. 10001
Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
Humble Oil & Refining Co., Humble Building, Houston, Texas 77002
Mobil Oil Corp., 26 Broadway, New York, N.Y. 10004
Refineria Panama, S. A., 277 Park Ave., New York, N.Y. 10017
Shell Oil Co., 50 W. 50 St., New York 10020
Texaco, Inc., 135 E. 42nd St., New York, N.Y. 10017

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Ameron Corrosion Control Div., Brea, Calif. 92621
Caroline Co., 328 Hanley Industrial Court, St. Louis, Mo. 63144
Devco & Reynolds, Subsidiary Celanese Coats Co., 224 E. Broadway, Louisville, Ky. 40201
Enjay Chemical Co., 60 West 49th St., New York, N.Y. 10020
Farboil Company, 90 West St., New York, N.Y. 10006
Intercoastal Corp., 2320 Edgewater Ave., Baltimore, Md. 21222
International Paint Co., 21 West St., New York, N.Y. 10006
Mobil Chemical Company, Metuchen, N.J. 08840
Patterson-Sargent, P.O. Box 494, New Brunswick, N. J.
Woolsey Marine Industries Inc., 201 E. 42nd St., New York, N.Y. 10017

PETROLEUM SUPPLIES

Independent Petroleum Supply Co., 1345 Ave. of Americas, New York, N.Y. 10019
Refineria Panama, S. A., 277 Park Ave., New York, N.Y. 10017
Shell Oil Co., 50 W. 50 St., New York, N.Y. 10020
Texaco, Inc., 135 E. 42nd St., New York, N.Y. 10017
The West Indies Oil Co., Ltd. St. John's, Antigua, W. I.

PLASTICS—Marine Applications

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

POLLUTION CONTROL

Enjay Chemical Co., 60 West 49th St., New York, N.Y. 10020
Hemisphere Marine Chemicals Co., Inc., 300 Main St., Orange, N.J.

PROPELLERS: NEW AND RECONDITIONED

Avondale Shipyards, Inc., P.O. Box 52080, New Orleans La. 70150
Bethlehem Steel Corp., Shipbuilding, 25 Broadway, N.Y., N.Y. 10004
Bird-Johnson Co., 883 Main Street, Walpole, Mass. 02081
Coolidge Propeller Co., 1608 Fairview Ave. E., Seattle, Wash. 98102
Federal Propellers, 1501 Buchanan Ave. S.W., Grand Rapids, Mich. 49502
Ferguson Propeller, 1132 Clinton St., Hoboken, N.J. 07030

PUMPS

Coffin Turbo Pump/FMC Corp. 326 So. Dean St., Englewood, N.J. 97631
Colt Industries, Inc., Fairbanks Morse Pump & Electric Div., 3601 Kansas Ave., Kansas City, Kansas 66110
Goulds Pumps, Seneca Falls, N.Y. 13148
Worthington Corporation, Harrison, New Jersey 07029

RATCHETS

American Engineered Products Co., Box 74, McKees Rocks, Pa. 15136

REFRIGERATION—Refrigerant Valves

Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
York Corp., Grantley Road, York, Pa. 17405

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Cating Rope Co., 309 Genesee St., Auburn, N.Y. 13022
Columbian Rope Co., 309 Genesee St., Auburn, N.Y. 13022
Jackson Rope Corp., 9th & Oley, Reading, Pa. 19604
Tubbs Cordage Company, P.O. Box 709, Orange, Calif. 92669
Wall Rope Works, Inc., Beverly, N. J. 08010

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Yokohama Rubber Co. Ltd., P.O. Box 46, Shiba, Tokyo 105, Japan

RUDDER ANGLE INDICATORS

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Galbraith-Pilot Marine Corp., 600 Fourth Ave., Brooklyn, N.Y. 11215
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

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

SEALS

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Syntron, Div. FMC Corp., 398 Lexington Ave., Homer City, Pa. 15748

SEARCHLIGHTS

Portable Light ITT, 67 Passaic Ave., Kearny, N.J. 07032
Snelson Oilfield Lighting Co., 1201 E. Doggett St., Fort Worth, Texas 76104

SEWAGE DISPOSAL

Seapax, Inc., 3645 Warrensville Center Rd., Cleveland, Ohio 44122
Youngstown Welding & Engineering Co., 3708 Oakwood Ave., Youngstown, Ohio 44509

SHAFT REVOLUTION INDICATOR EQUIP.

Electric Tachometer Corp., 68th & Upland Sts., Phila., Pa. 19142

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National Metal & Steel Corp., 1251 New Dock St., Terminal Island, Cal. 90731
Northern Metal Co., Minor & Bleigh Sts., Philadelphia, Pa. 19136
Peck Equipment Co., 3500 Elm Ave., Portsmouth, Va. 23704
Zidell Explorations, Inc., 3121 S. W. Moody St., Portland, Ore. 97201

SHIP BROKERS

Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
Mowbray's Tug and Barge Sales Corp., 21 West St., N.Y., N.Y. 10006
Oaksmith Boat Sales, Inc., Fisherman's Terminal, Seattle, Wash. 98119

SHIPBUILDING STEEL

Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh, Pa. 15219
Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Bethlehem Steel Corp., 25 Broadway, New York, N.Y. 10004
Huntington Alloy Products, Div. International Nickel Co., Inc., Huntington, W. Va. 25720

SHIPBUILDING—Repairs, Maintenance, Drydocking

Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Astilleros Espanoles, S.A. Zurbano, 70, Madrid 10, Spain
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans La. 70150
Beliard Murdoch S. A., Kattendijkdok Westkaai 21, Antwerp, Belgium
Bethlehem Steel Corp., Shipbuilding, 25 Broadway, N.Y., N.Y. 10004
Blount Marine Corp., P.O. Box 360, Warren, Rhode Island 02885
Conrad Industries, P.O. Box 790, Morgan City, La. 70380
Detyns Shipyards, Inc., Route 2, Box 180, Mt. Pleasant, So. Carolina 29464
Dillingham Corp., P.O. Box 3288, Honolulu, Hawaii 96801
Dravo Corporation, Neville Island, Pittsburgh 25, Pa.
Equitable Equipment Co., Inc., P.O. Box 8001, New Orleans, La. 70122
General Dynamics, Electric Boat Division, 99M Eastern Point Road, Groton, Conn. 06340
General Dynamics, Quincy Division, Quincy, Mass. 02169
Gotaverken American Corp., 39 Broadway, New York, N.Y. 10006
Grogan Shipyards, P.O. Box 829 Colbert, Marseilles, France.
Gundersen Bros. Engrg. Corp., 4700 N.W. Front St., Portland, Oregon 97208
Halter Marine Services, Inc., Route 6, Box 287H, New Orleans, La. 70126
Harbor Boat Building Co., 258 Cannery St., Terminal Island, Calif.
Havre de Grace, Havre de Grace, Md.
Hillman Barge & Construction Co., Grant Bldg., Pittsburgh 19, Pa.
Hitachi Shipbuilding & Moch. Works, Inc., P.O. Box 2217, Gulfport, Miss. 39501
Ishikawajima-Harima Heavy Industries Co., Ltd., 15 William St., New York, N.Y. 10005

Jacksonville Shipyards, 644 E. Bay St., Jacksonville, Fla. 32203

Jeffboat, Inc., Jeffersonville, Ind. 47130
Kawasaki Dockyard Co., 8 Kaigan-dori, Ikuta-ku, Kobe, Japan
Kelso Marine, Inc., P.O. Box 268, Galveston, Texas 77550
Kockums Malmö, Fack, Malmö, Sweden
Levingston Shipbuilding Co., P.O. Box 968, Orange, Texas 77630
LISNAVE, P.O. Box 2138, Lisbon, Portugal
Litton Industries, 9920 W. Jefferson Blvd., Culver City, Calif. 90230
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
Marine Industries, Ltd., 1405 Peel St., Montreal 2, Quebec
Matton Shipyard Co., Inc., P.O. Box 428, Cohoes, New York 12047
Melville Shipping & Towing, Ltd., P.O. Box 722, Port of Spain, Trinidad, W.I.

Mitsui Shipbuilding & Eng. Co., Ltd., Nihonbashi-Muromachi, Chuo-ku, Tokyo, Japan
Nashville Bridge Co., P.O. Box 239, Nashville, Tenn. 37202
National Steel & Shipbuilding Corp., San Diego, Calif. 92112
Newport News Shipbuilding and Dry Dock Co., Newport News, Va.
Nippon Kokan Kabushiki Kaisha, 2, 1-chome, Otemachi, Chiyoda-ku, Tokyo, Japan

Northwest Marine Iron Works, P.O. Box 3109, Swan Island, Portland, Oregon 97208
Nuclear Service & Construction Co., Inc., 9296 Warwick Blvd., Newport News, Va. 23607

O.A.R.N. (officine Allestimento e Riparazioni Navi) Genoa, Italy
Paceco, Div. Fruehauf Corp., P.O. Drawer E, Alameda, Calif. 94501
Pearson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Fla. 33156
Perth Amboy Dry Dock Co., Perth Amboy, N.J. 08862
Rodermond Industries, Foot of Henderson St., Jersey City, N.J. 07302
St. Louis Shipbuilding—Federal Barge, Inc.
611 East Marceau St. Louis, Mo. 63111

Sasebo Heavy Industries Co., Ltd., New Ohtemachi Bldg., Chiyoda-ku, Tokyo, Japan
Sumitomo Shipbuilding & Machy. Co., Ltd. 2-1 Ohtemachi 2-chome, Chiyoda-ku, Tokyo, Japan

Teledyne Sewart Seacraft, P.O. Box 108, Berwick, La. 70342
Todd Shipyards Corp., 1 Broadway, New York, N.Y. 10004
Transportation Technology, Inc., 3210 Conflans Rd., Irving, Texas 75060

Zigler Shipyards Inc., P.O. Box 492, Jennings, Louisiana 70546

SHIP MODELS

Boucher-Lewis Precision Models, Inc., 36 E. 12 St., N.Y., N.Y. 10003

SHIP MODEL BASIN

Arctec, Inc., 2834 Belair Drive, Bowie, Md. 20715
Hydronautics, Incorporated, Laurel, Maryland 20810

SHIP ROUTING

Bendix Commercial Services Corporation, Owings Mills, Md. 21117
Weather Routing, Inc., 90 Broad Street, New York, N.Y. 10004

SHIP STABILIZERS

Duchess Baker Mfg. Co., Superior, Wis.
Lidgerwood Mfg. Co., (Superior Lidgerwood Mundy Corp.), 1010 Third Ave., New York, N.Y. 10021
Maritech, Inc., 38 Union Sq., Somerville, Mass. 02143
John J. McMullen Associates, Inc., 110 Wall St., N.Y., N.Y. 10005
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.

STEAM GENERATING EQUIPMENT

Combustion Engineering, Inc., Windsor, Connecticut 06095

STEVEDORING

Luckenbach Steamship Co., 120 Wall Street, New York, N.Y. 10004
M. J. Rudolph Corp., 8 Sackett St., Brooklyn, N.Y. 11231

SWITCHBOARDS

Hose McCann Telephone Co., Inc., 524 West 23 St., N.Y., N.Y. 10011

TANK CLEANING MACHINES

Pyrate Sales, Inc., 222-17 Northern Blvd., Bayside, N.Y. 11361

TOWING—Lighterage, Transportations, Barge Chartering

American Waterways, 1250 Connecticut Ave., Washington, D.C. 20036
M. J. Batty & Co., P.O. Box 2316, Singapore, 1
Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002

Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202

G & H Towing Company, 509 Texas Building, Galveston, Texas 77550

Henry Gillen's Sons Lighterage, 140 Cedar St., New York, N.Y. 10006

James Hughes, Inc., 17 Battery Pl., New York, N.Y. 10004

Jackson Marine Corp., P.O. Box 1087, Aransas Pass, Texas 78336

McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004

McDonough Marine Service, P.O. Box 26206, New Orleans, La.

P. F. Martin, Inc., Mall Bldg., 325 Chestnut St., Philadelphia, Pa.

Moran Towing & Transportation Co., Inc., 17 Battery Place, New York, N.Y. 10004

L. Smit & Co., 11 Broadway, New York, N.Y. 10004

Suderman & Young Towing Co., 329 World Trade Center, Houston, Texas 77002

M. & J. Tracy, Inc., 1 Broadway, New York, N.Y. 10004

Turecamo Coastal and Harbor Towing Corp., 1752 Shore Parkway, Brooklyn, N.Y. 11214

VALVES AND FITTINGS—Hydraulic—Safety Flanges

Empire Machinery & Supply Co., 3550 Virginia Beach Blvd., Norfolk, Va. 23501

Hubeva Marine Plastics-Lining, 435 Hamilton Ave., Brooklyn, N.Y. 11231

Hydrasearch Co., Inc., Riva Rd., Annapolis, Md. 21401

Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696

Mechanical Marine Co., 45-15 37th St., Long Island City, N.Y. 11101

WINCHES

Skagit Corp., Box 151, Sedro Woolley, Wash. 98284

WIRE ROPE

Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042

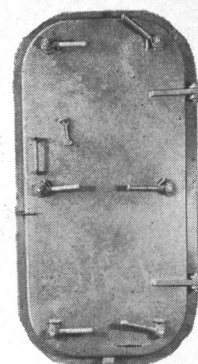
Bethlehem Steel Corp., Bethlehem, Pa. 18018

Don R. Hinderliter, Inc., 1240 No. Howard, Tulsa, Okla. 74104

United States Steel Corp., P.O. Box 86, Pittsburgh, Pa. 15230

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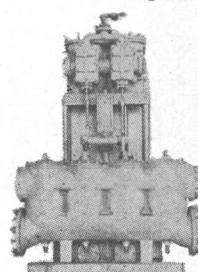
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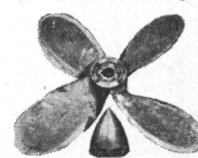


1400 G.P.M. at 110 P.S.I.
—suction lift 11.5 feet—
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Discharge—2 1/2" Steam—
4" Exhaust. Overall Width
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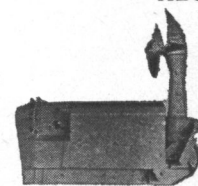
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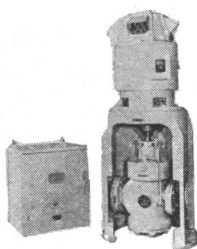
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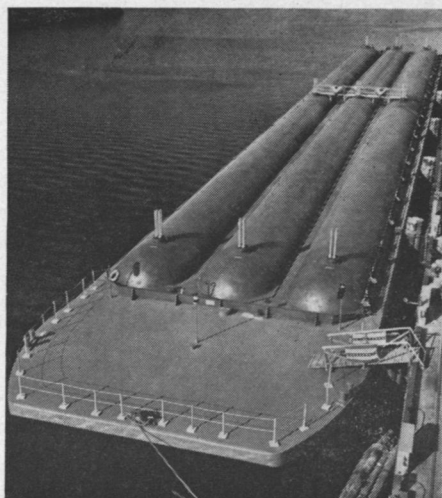


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—1750 R.P.M.—serial
E-8619—frame 324VY
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Electro Dynamics. With
magnetic control. Excel-
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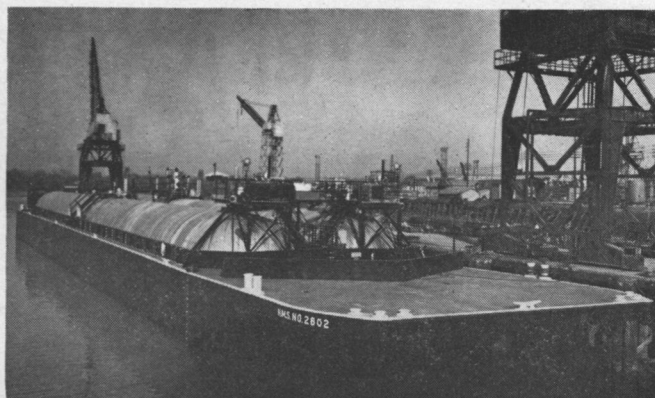
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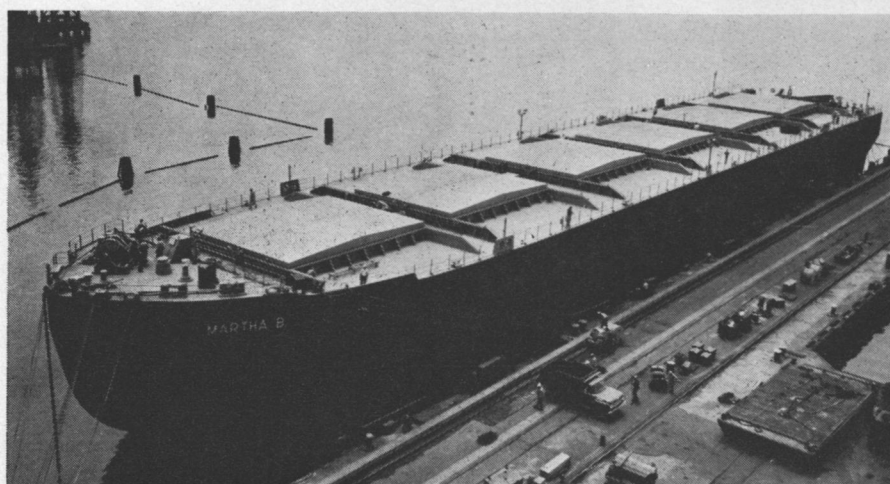
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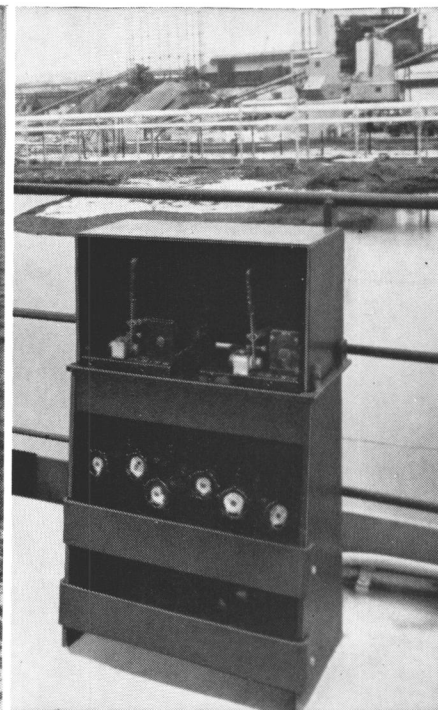
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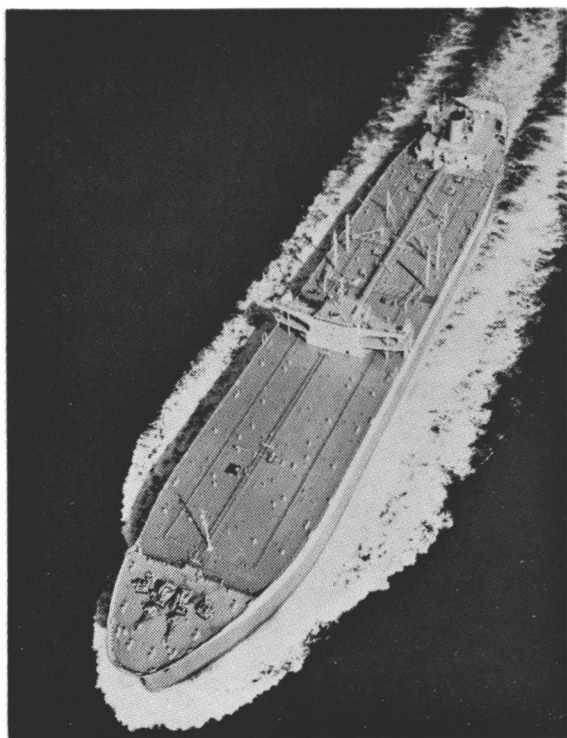
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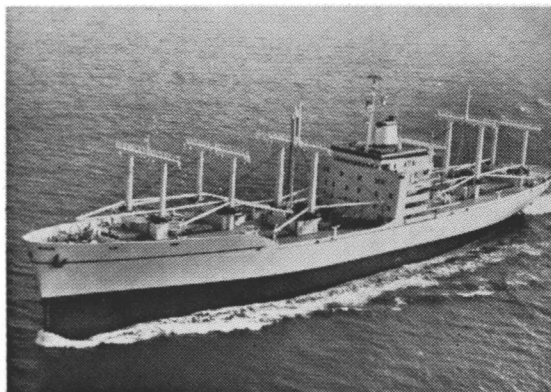
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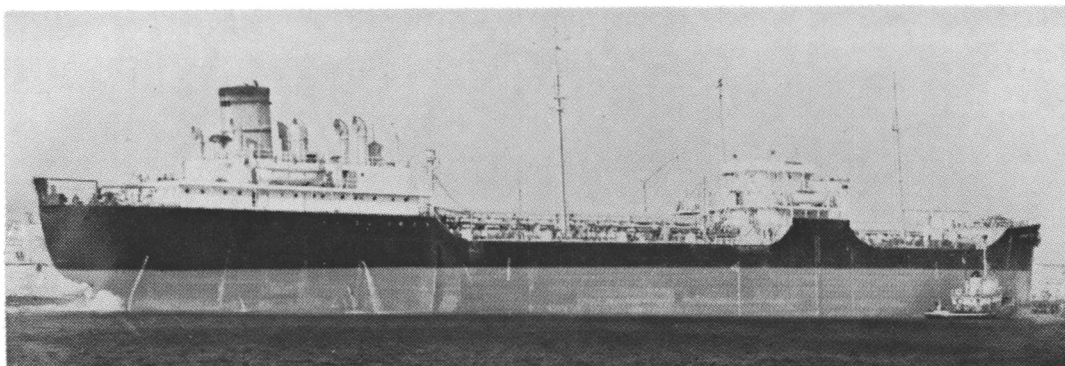
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