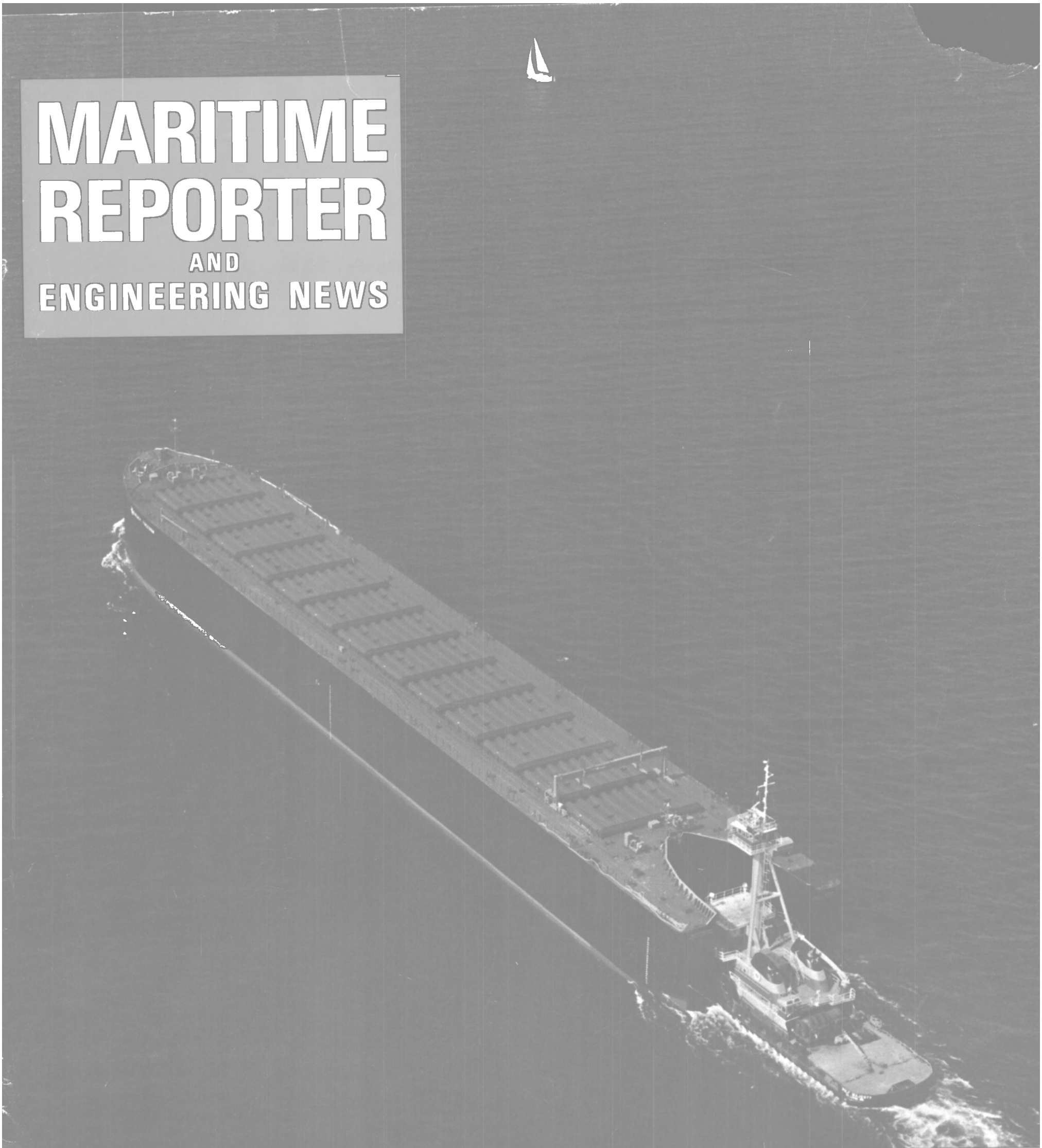
MARITIME REPORTER
AND
ENGINEERING NEWS



'Energy Freedom' And Tug 'Gulf Majesty'

Bay Shipbuilding Delivers Jumbo Barge To Universal American In Record Time

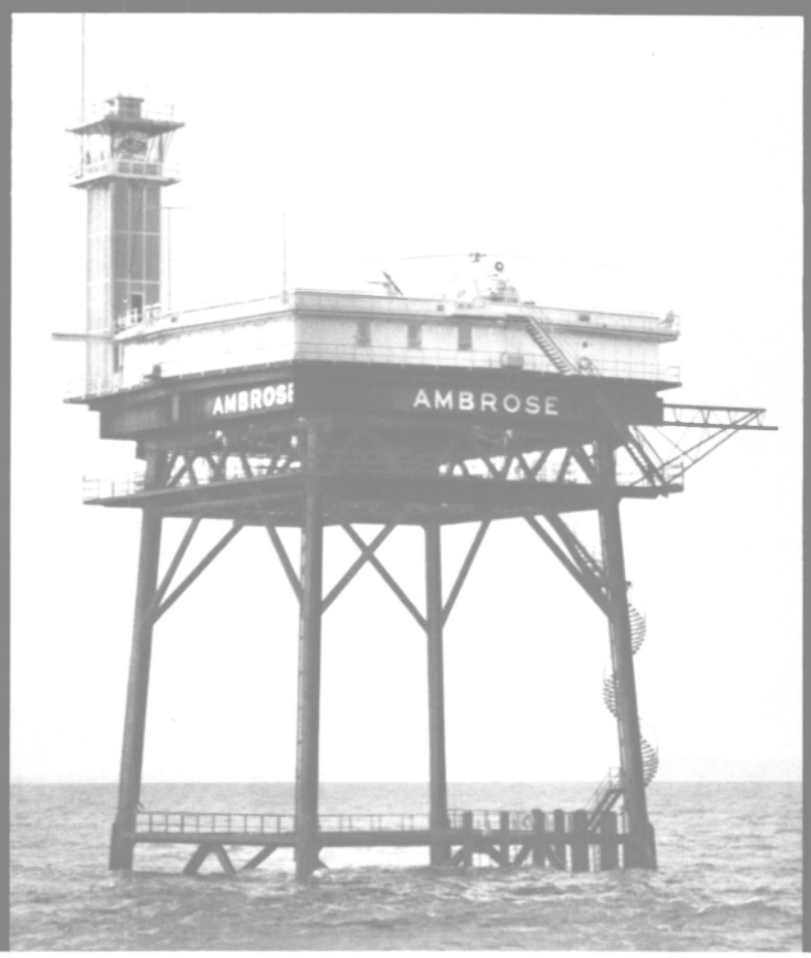
(SEE PAGE 4)

GASTECH '81
And
Extreme Loads Symposium

(SEE PAGE 4)

OCTOBER 1, 1981

When you pass The Ambrose Light, you're not far from Gulf.



Back in 1908, U.S. Lightship No. 87 first dropped her mushroom anchor at 40° 275'N, 73° 49.9' W.

She was stationed there to guide square riggers and steamers through the shifting sandbars of the newly dredged Ambrose Channel and on into New York harbor.

When fog obscured her light, she blared a warning heard for miles.

And in 1912, ships began to home in on her radio beacon, the first in the world to operate successfully.

You can board the original Ambrose at New York's South Street Seaport Museum. The less romantic, but more efficient tower above now stands where she rode at anchor, a welcome sight (or sound) to seamen inward bound.

New York. Still another port where you'll find premium Gulf marine lubricants like Gulf Veritas Cyloils.

These highly alkaline cylinder lubricants are for use in all low-speed crosshead diesel engines burning residual fuel oils. They're manufactured from highly refined base oils having maximum film strength and high oxidation stability, compounded with oil-soluble additives to provide the alkaline reserve needed to neutralize the acidic products of combustion and a high level of detergency to ensure maximum component cleanliness.

All of Gulf's marine products give you maximum quality, performance and bottom-line economy. They're available, backed by a complete and comprehensive service capability, at ports of call throughout the world. For specifics, please contact your local Gulf representative.

Gulf

Gulf Trading and Transportation Company
A Division of Gulf Oil Corporation

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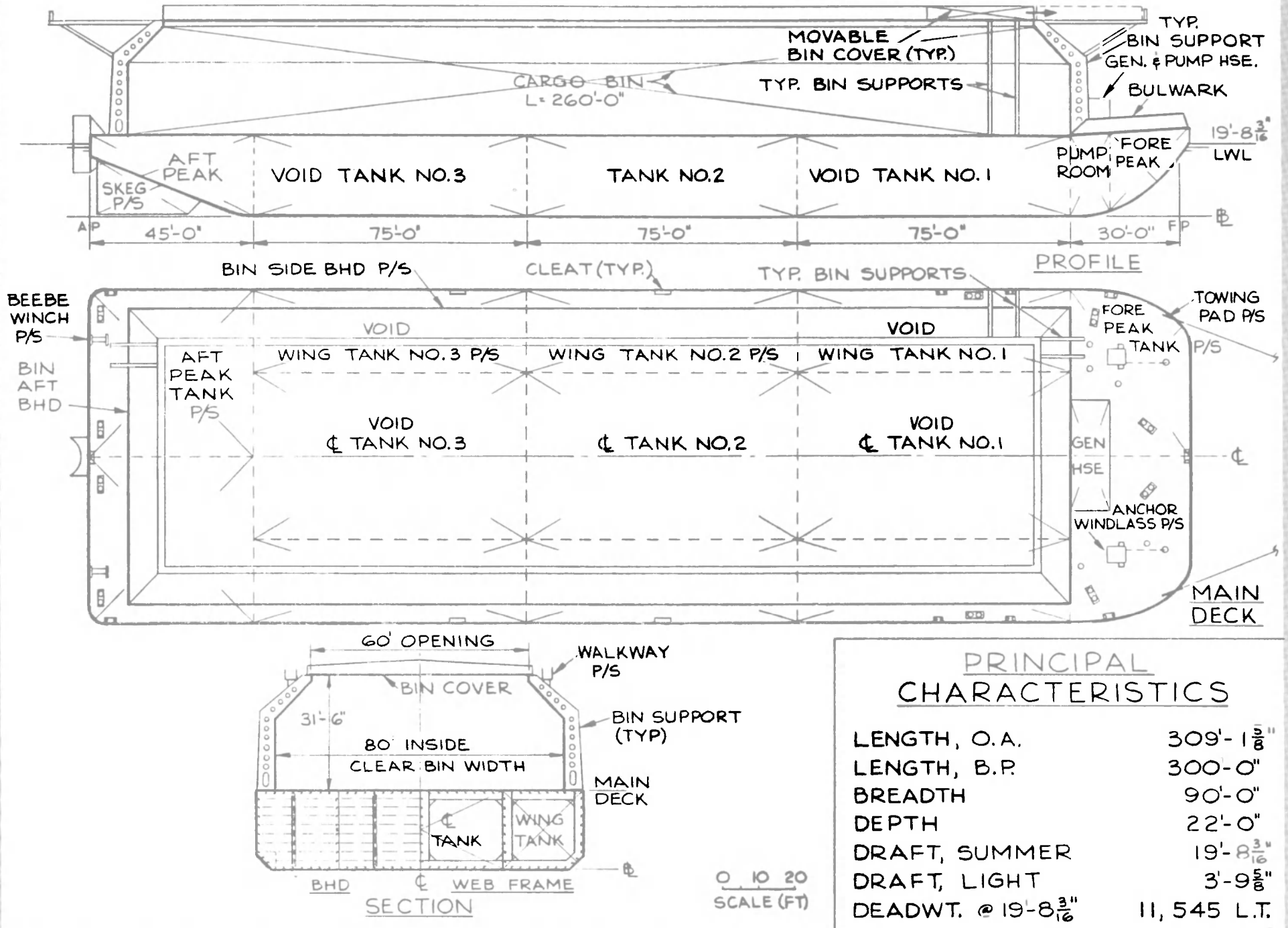
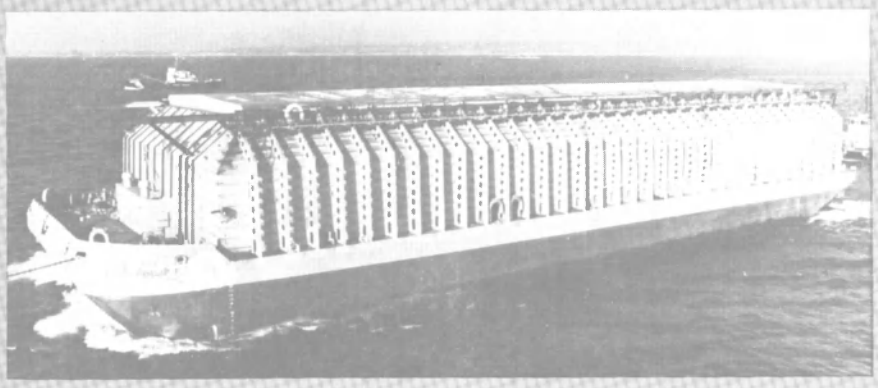


PRINCIPAL CHARACTERISTICS

LENGTH, O.A.	309'-1 5/8"
LENGTH, B.P.	300'-0"
BREADTH	90'-0"
DEPTH	22'-0"
DRAFT, SUMMER	19'-8 3/16"
DRAFT, LIGHT	3'-9 5/8"
DEADWT. @ 19'-8 3/16"	11,545 L.T.
CARGO BIN CAP'Y	600,000 FT³

CLASS - ABS ✠ A1 Ⓔ BARGE
OCEAN SERVICE - UNMANNED



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McAllister

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ON THE COVER

$9.9-Million Navy Contract Awarded Newport News For Will Rogers Overhaul

Newport News Shipbuilding, Newport News, Va., was awarded on August 21, 1981, a $9,991,500 cost-plus-fixed-fee contract for preparation for overhaul, alterations and repair of SSBN 659 USS Will Rogers. The Naval Sea Systems Command is the contracting activity.

$4 Million Title XI Guarantee Approved For Morania ITB

Acting Maritime Administrator **Bruce A. McAllister** has approved in principle an application by Morania Barge No. 470 Inc., a wholly owned subsidiary of Penn Industries, Inc., New York, N.Y., for a Title XI guarantee to aid in financing a twin-screw ocean-going tug and a bulk oil barge.

The 383-foot barge was delivered by SBA Shipyard, Inc., Jennings, La., last September. The 4,000-horsepower tug was built by Modern Marine Power Inc., Houma, La. The vessels will transport cargoes between the port of New York and other ports in the states of New York and New England.

The combined estimated depreciated actual cost of both vessels is $5,817,370, and both of the vessels are eligible for an 87.5 percent guarantee under the Title XI program. However, the amount of the guarantee in this case has been set at $4 million at Morania's request.

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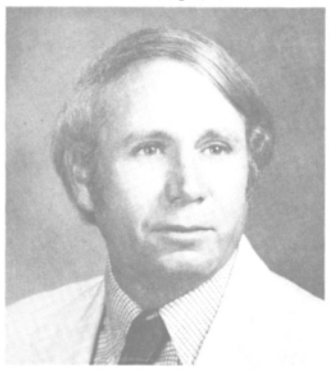
Name Kenneth Griffin VP Of Mississippi Marine



Kenneth D. Griffin

The promotion of **Kenneth D. Griffin** to vice president of Mississippi Marine Towboat Corporation was announced recently by **D. John Nichols**, president of the Greenville, Miss., firm which specializes in new construction and repair of inland and offshore marine equipment.

Mr. **Griffin** joined Mississippi Marine in September of 1973 as controller-purchasing manager. With this new appointment, Mr. **Griffin's** duties and responsibilities will be broadened to assist in general day-to-day management, in addition to being directly responsible for the accounting and purchasing departments.

New Port Planned On Colorado River Southwest Of Houston

A new port will be developed on the Colorado River southwest of Houston, Texas. The U.S. Army Corps of Engineers announced that an agreement has been reached recently with the Bay City, Texas, Port Authority to proceed with port construction at the mouth of the Colorado.

Construction is scheduled to begin on the $27-million project early next year and will take about five years to complete. The port will link Bay City with the Gulf Intracoastal Canal and the Gulf of Mexico. It will enable Bay City to handle larger cargoes.

Plans call for construction of barge facilities for cargoes on the intracoastal waterway as well as facilities for offshore equipment. The port will have a jettied entrance channel 15 feet deep and 200 feet wide, a 12- by 100-foot navigational channel linking the Gulf to the intracoastal waterway, a harbor and turning basin at Matagorda, and public recreational facilities along the channel.

French To Reopen Panama Ship Repair Yard At Balboa, Will Spend $10 Million

A group of French ship repairers led by the Port of Marseilles Authority has disclosed plans for turning the old Panama Canal Co.'s drydocks at Balboa into a modern repair facility.

A few weeks ago the group, which includes Chantiers Navals de La Ciotat, received approval from the Panama Canal Commission on a tender solicited two years ago.

The Balboa facility, scheduled to begin operations at the start of next year, will be operated by Astilleros Balboa S.A., under a 15-year concession from the Canal Commission expiring in August 1996.

Astilleros Balboa, with a capital of $2.7 million, is held 49 percent by private Panamanian interests, principally Carlos Eleta, and 51 percent by the French group, which has incorporated itself as Balboa Assistance S.A. with the nominal capital of 100,000 francs.

Its shareholders, in addition to CNC, are Gardella S.A., a Marseilles-based careening and painting specialist, Korsia of Marseilles, a specialist in lifting, and Gestion et Methodes, consulting engineers specializing in repair facilities. The Marseilles Port Authority is represented in the French company by Sofremer, the state-controlled French maritime engineering company.

Market studies indicate the Balboa capacity should be between 800,000 and 1,000,000 hours of work a year.

It is located at the Pacific end of the canal, which more than 12,000 ships transit yearly.

ICC Grants Hunter Marine Regulated Cargo Authority For Western Rivers

The ICC recently issued a certificate of public necessity, granting permanent authority to Hunter Marine Transport, Inc., Nashville, Tenn., to perform barge transportation of regulated cargo on the Cumberland and Tennessee Rivers and the connecting segment of the lower Ohio River.

This is the first permanent authority to be granted on the Western Rivers since 1975, and the first on these rivers in more than 10 years.

Hunter Marine has been transporting unregulated cargo on the Western Rivers for a number of years and operates a bulk terminal in Rock Harbor at Mile 175.5 Cumberland River with insured fleeting at Mile 176.

New terminal facilities and warehouses are under construction at riverside, separate from but adjacent to the bulk material operation. Hunter will soon offer a full range of intermodal services, including crating, custom brokerage, and full service storage.

Hunter intends to cooperate with carriers authorized on other waterways to provide access for Nashville area business to through shipment of regulated cargo, and is looking forward to becoming a part of the Waterways Freight Bureau in the immediate future.

GECC Marine Finance Unit Publishes New Brochure

The Marine Financing Component of the General Electric Credit Corporation, Stamford, Conn., has published a four-page brochure that describes the services it can provide for the financing of heavy commercial marine equipment including oceangoing and Great Lakes vessels, tugs, towboats and barges, offshore rigs and support craft, dockside equipment, and for shipyards.

Tax and non-tax oriented plans are among the varied financing programs now available from GECC. These are described in detail in the new booklet.

For a free copy of the brochure,
Write 31 on Reader Service Card

Gulf Oil Lubricants Co. Names Supply Manager

Frank T. Bauchspies was recently named general manager, logistics and supply for the Gulf Oil Lubricants Company, a division of Gulf Oil Corporation, Houston, Texas.

Mr. **Bauchspies** joined Gulf in 1968, following five years as director of the industrial liaison department of the Massachusetts Institute of Technology and six years of prior overseas service in the oil industry. He has served in a number of planning management positions for the Corporation and for Gulf Refining & Marketing Company, of which the lubricants company is part. Most recently he was manager, technical planning and development in the engineering division of Gulf Science & Technology Company.

Wartsila Diesel Appoints Yngue Nordquist As New North American Mgr.

The Wartsila Diesel Division—consisting of Wartsila Vasa Factory, Finland, and Nohab Diesel AB Trollhattan, Sweden — announced recently that **Yngue Nordquist** has been appointed North American regional manager of Wartsila Diesel, effective October 1, 1981. He is headquartered at Wartsila Power, Inc., New Orleans, La., of which he was also appointed managing director. Mr. **Nordquist** previously was managing director of Nohab Diesel AB.

Kaj Liewedahl, M.Sc. Economist, has been named as the new managing director of Nohab Diesel AB, also effective October 1, 1981.

Southside Marine Opens Newport News Branch

Southside Marine, Inc., Tampa Bay, Fla., has announced the establishment of a branch facility at Newport News, Va.

Jim Brennan, president of SMI, stated recently that the new branch will result in savings to SMI clients in the Tidewater area since per diem expense rates will be the same as those charged in the Tampa Bay area.

SMI specializes in providing engineering assistance for repair and trouble-shooting of problems associated with controllable-pitch propellers, thrusters, inert gas systems and propulsion machinery, as well as providing machinery surveys on a contract basis for new construction and retrofits. Services are provided at dockside and underway. The new branch is located at 212 Lyttle Drive, P.O. Box 1614, Newport News, Va. 23601.

New Brochure Describes Skagit Series 300 Cranes For Offshore Operations

Comprehensive operating and dimensional information on its Series 300 Pedestal Cranes is contained in a new brochure now available from the Skagit Division of Continental Emsco Company, Sedro-Woolley, Wash.

The 10-page, four-color literature describes the various systems, controls, components and optional equipment that make these cranes ideal for offshore operations.

Included are details on Skagit's high-performance hydraulic system and tne extra smooth swing system. Information on the big performance lattice boom with its maximum 120-foot reach is given and accompanied by a work range diagram.

Also presented are data on the cranes' modular design for ease of servicing, the testing program that was conducted, available crane options, and Skagit's parts and service backup.

For a copy of "Pulling for you . . . with an offshore lift capability,"

Write 30 on Reader Service Card

Program Finalized For Maintenance Seminar In New York October 28

The Marine Preventive Maintenance Seminar to be held at the Vista International Hotel in New York City on October 28 this year will feature an impressive slate of speakers and panelists. The one-day seminar will explore the managerial and financial evaluation of preventive maintenance expenditures and their relationship to utilization of assets and the effect on the "bottom line."

The speakers and panelists will discuss the critical decision-making path leading up to the formulation of a corporate preventive maintenance philosophy and resultant expenditures. In addition, there will be a panel session that will examine the systems and techniques currently available for condition monitoring. This panel discussion will be moderated by Prof. **Aaron Kramer** of the Engineering Department of SUNY Maritime College.

Speakers at the seminar will include the following: **Dean Chimples**, president, Megasystems, Inc.; **Henry Christie**, chief mechanical officer, The Pittsburgh & Lake Erie Railroad; **Frank Owens**, director of engineering and maintenance, TransWorld Airlines; **Alfred R. Philbrick**, general manager, Marine Division, Reynolds Metals Company; **Roger H. Rotondi**, business manager—ferrography, Foxboro Analytical; **Sy Steigelfest**, plant engineering manager, The Scott Paper Company; and **Bob Wallace**, president, Industrial Analyzing Corporation.

The registration fee for the seminar is $225, which includes luncheon and copies of all materials. For additional information and advance registration, contact **Bill Pankow** at Meeting Resources, Inc., 32 Broadway, New York, N.Y.; telephone (212) 425-4345.

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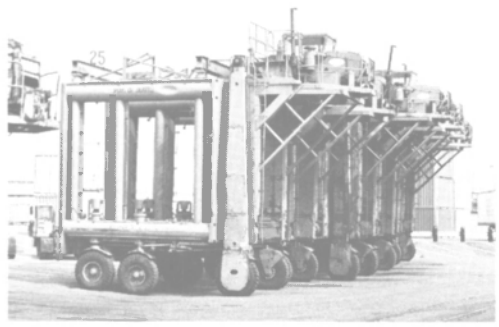
Starcon Rubber Tire Gantry Cranes 40 Lt. (3 available)

Arrow and Flexi-Truc and **Champion Yard Tractors.** (21 available)

Clark Straddle Carriers (11 available - 1 model 510/10 model 512)



For specific information, brochures and inspection appointment call: **Bobbie Wehrwein,** Purchasing **(206) 382-3240** or **Bill Brougher,** Engineering at **(206) 382-3141**

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Name Shinners Director Of Marine Operations At Delta Steamship

Delta Steamship Lines, Inc., New York, appointed **James R. Shinners** as director of marine operations-Atlantic division. The announcement was made recently by **Donald G. Aldridge**, senior vice president.

Captain **Shinners** was most recently vice president of vessel operations for Puerto Rico Marine Management, Inc. Prior to joining this firm in 1974, he was employed by Sea-Land Service, Inc. for a four-year period, in operations management positions. Captain **Shinners** has sailed as master on various types of vessels.

Norshipco Reactivates Mothballed Cargo Ship In Less Than Six Days

Norshipco, Norfolk, Va., has demonstrated that a 35-year-old cargo vessel, out of service for more than a decade, can be taken from mothballs and reactivated in less than six days.

In a recent national defense readiness exercise, Norshipco — Norfolk Shipbuilding & Drydock Corporation — was unexpectedly told to remove the cargo ship Catawba Victory from the James River, Va., reserve fleet, unseal, it, light off the boilers, and put to sea.

A time limit of 10 days had been set, with the U.S. Department of Defense making clear that six days was a more desirable target. Norshipco accomplished the reactivation in five days and 14 hours of a ship that had been in mothballs for 11 years.

Erik Gren, a port engineer for Apex Marine Corp., New York-based general agent for the ship, estimated that the reactivation cost $1.3 million, including supplies and hiring of temporary crew.

The exercise began with a call from the Defense Department to the Maritime Administration which notified agents for the three vessels being reactivated. The drill was so unexpected that Mr. **Gren** was caught in the Los Angeles airport about to board a plane for New York. He changed planes and went to Norfolk.

While Mr. **Gren** was enroute, Apex Marine notified Norshipco that it had been selected for the exercise. The shipyard dispatched an eight-man crew to the Catawba Victory to prepare it for towing back to the yard.

Norshipco management ordered an around-the-clock work schedule. As many as 300 workers were on the ship at any given time. In addition, there were observers from MarAd, the Navy, the Coast Guard, the American Bureau of Shipping, and the Military Sealift Command.

"This was the way it would be in real life," said **Al Crain**, Norshipco's assistant plant superintendent, noting that such speedy ship reactivations might be necessary in case of war.

First sealants were removed. Then divers removed plugs from sea openings in the hull and cleaned the hull and propeller. A thorough inspection of all machinery came next. The boilers were put into working order.

Problems with the boiler safety valves caused a loss of 20 hours.

Mr. **Gren** had to stock the Catawba Victory from scratch. He also had to hire a crew of 42 from maritime union halls in Norfolk and from as far away as Texas and Mississippi.

After the electronic systems and radar were tested, there was a dockside trial for four hours, followed by a successful 24-hour sea trial.

The Military Sealift Command was then notified that the Catawba Victory was ready to accept cargo and sail. Norshipco officials said the time to complete the reactivation broke all previous records for work on similar vessels.

Floating Factory Completes Nine-Day, 2,500-Mile Voyage To Canadian Arctic

A factory barge as big as a football field recently completed a 2,500-mile voyage from the St. Lawrence River to a small island in the Canadian Arctic.

It arrived nine days ahead of schedule — at Little Cornwallis Island, 600 miles above the Arctic Circle, to help exploit the most northerly base metal mine in the world.

The $40-million floating factory was drawn by tugboats through iceberg-infested waters during the short "Arctic shipping window" which sometimes lasts no more than six weeks.

The huge factory barge, called the Arvik 11, left Three Rivers, near Montreal, on July 24. It will be part of the Polaris mine operated by Vancouver-based Cominco Ltd., which is slated to start lead and zinc concentrate production early next year.

While the barge base was built by Davie Shipbuilding, Lauzon, Quebec, Comstock and Dominion Bridge constructed the ore processing plant onboard the vessel. Bechtel Canada is responsible for the surface facilities for the project.

Literature Published On Navigation Computer System From Trimble

Trimble Navigation recently introduced a powerful new navigation computer system, CS-1 that incorporates graphics display and printout capability. The CS-1 can be used for piloting, position monitoring, trip logging, trip planning, and a variety of special computations including true wind, set and drift, distance, course, time and speed made good to the next waypoint.

The CS-1 stores 500 waypoints, 20 trip plans, and 500 obstructions/hazards. The unit provides a variety of real time visual graphic displays of ship's position relative to course and hazards. Audio alarms for cross track error, distance to hazards, and waypoints are user programmable.

The CS-1 stores magnetic variation worldwide and automatically presents magnetic headings for specific locations. Permanent trip records can be printed and/or stored on magnetic tape automatically at user-selected intervals or on command.

The CS-1 consists of a Trimble Model 10A High Accuracy Loran-C, a Hewlett Packard Model 85 computer, and Trimble-designed software. Users may provide their own HP-85 computer.

For further information,
Write 18 on Reader Service Card

Savannah Shipyard Reports Passing Of David H. Green

The passing of **David H. Green,** president of Savannah Shipyard Company, Savannah, Ga., was reported recently by **Robert F. Sherman,** chairman of the board of the company.

Mr. **Green** joined Savannah Shipyard in April 1974 and was promoted to president on January 1, 1979. He was a chief engineer and sailed in that capacity for several years. Mr. **Green** had served with Maryland Shipbuilding and Drydock Co., Inc.; operated his own consulting firm; and had been a certified surveyor in the Baltimore area for several international agencies.

He also served as marine superintendent and operations manager for the American Coal Shipping Co., and had been with Bethlehem Steel Corporation's shipbuilding division in several capacities, including manager of contract administration.

Mr. **Green** was a member of The Society of Naval Architects and Marine Engineers, Society of Marine Port Engineers, National Contract Management Association, Navy League of the United States, and The Propeller Club. He was a member of the board of directors of the Shipbuilders Council of America. He was also a member of The Technical Committee of the American Bureau of Shipping.

Christen First U.S.-Flag Freezer Ship For East Coast Operations

The first American-owned, U.S.-flag, oceangoing freezer ship designed to operate off the U.S. East Coast was christened recently during ceremonies held at the New York Port Authority's Pier 1, Brooklyn.

The "Holland" (shown above) will offer a new service to the East Coast fishing industry, providing American fishermen with the opportunity to sell their catch at sea, and offering export markets the best-preserved fish products from this country.

The 151-foot-long Holland—the original version of this now fully refitted ship — was built in the Netherlands in 1964 as a wetfish stern trawler, and fished herring actively through the end of 1979, when she was removed from service after the collapse of the North Sea herring fishery. The boat was acquired under the subsequently enacted Dutch government policy of subsidizing the sale of such vessels outside the Common Market.

The Holland was converted at Oranjewerf Shipyard, Amsterdam, into a freezer ship/mother ship. The renovation included installation of a freezing capacity of 20 tons per day in two air-blast freezers on the main deck, plus a supplementary freezer in the hold; the insulation of the fish holds to permit storing about 150 tons of frozen product below 0°F; installation of refrigerated seawater tanks on the aft deck to keep additional fish chilled prior to placement in the blast freezers; the conversion of the electrical generating equipment to supply power to the refrigeration equipment, and the installation of new net-handling equipment.

The Holland will take delivery at sea of fresh-caught fish—usually squid and butterfish—from typical American fishing vessels by a procedure known as "cod end transfer." During the transfer procedure, the collecting end of the harvest ship's fishing net will be disconnected from the remainder of the net and reattached to a line from the Holland. The Holland will haul the fish onboard and begin the freezing operation.

The frozen squid (calamari) will be marketed in southern Europe and the butterfish in Japan. These catches should keep the Holland busy for five to six months each year. Then the vessel's capabilities will be employed in other fisheries such as sea trout, bluefish or croaker, or as a supplemental dockside freezer plant at any of the East Coast ports that do not presently have land freezers.

Despite being one of the richest and most abundant shorelines in the world—20 percent of the world's fish resources lie within the 200-mile limit — America's East Coast has yet to develop into a major exporter of fish products.

Among the reasons for this failure has been the long-standing inability of American industry to compete successfully with the large and efficient foreign factory ships which for years operated in U.S. waters.

The foreign advantage was tempered in 1976 with the passage of the Magnuson Fishery Conservation and Management Act that restricted foreign vessels. Under its terms, American industry is given first call on the fishing harvest, with the remainder—the so-called Total Allowable Level of Foreign Fishing, or TALFF — allocated by the State Department only after U.S. harvesting capacities are satisfied.

M/V HOLLAND

Ownership	Holland Associates
Built	Holland, 1964, as wetfish stern trawler
Converted	Holland, 1981, into a freezer/mother ship; U.S. Flag
Length, overall	151 ft. 2 in.
Length B/P	140 ft. 8 in.
Width	27 ft. 11 in.
Depth	14 ft. 3 in.
Draft aft	13 ft. 2 in.
Tonnage	294 gt
Main engine	Deutz, 8-cylinder, type RBV 8 M 545, driving a fixed-blade propeller in a nozzle. No gearbox.
HP	1,200 hp at 380 rpm
Speed	11 knots
Steering gear	Electric-hydraulic with Decca 650 autopilot
Auxiliaries	MGO diesel, 8-cylinder, 300 hp at 1,500 rpm, driving a 240 kva, 50 hz, 3-phase, 220-volt generator for refrigeration plant DAF diesel, 8-cylinder, 140 hp at 1,500 rpm, fitted 1971, driving a 100-kva generator, 220/110 volt, 50 hz Samofa diesel, 30 hp at 1,500 rpm, as harborset
Refrigeration	Grasso Engineering (1) type RC 63.11 compressor; (2) type RC 29
Radar	(1) Atlas 4100 (1) Furuno
Echograph	(1) Atlas 470
Fishfinder	(1) Atlas 700
SSB	Skanti
Loran C	Trimble
Crane	(1) Pesci P-1000
Winch	(1) Gearmatic 11-SE-1103
RSW tanks	(3) @ 2.5 tons
Blast freezers	(3) @ 10 tons per day capacity
Freezer storage	12,000 cu. ft. @ —25°C (—14°F) in two holds
Fuel oil	27,500 gal.
Fresh water	8,500 gal.

Chicago Bridge To Expand Pascagoula Facilities For Offshore Rig Construction

Chicago Bridge and Iron Co. is planning to spend an additional $8 million to expand its facilities in Pascagoula, Miss., for the construction of large offshore oil rigs and equipment.

Robert Hicks, production manager in Pascagoula, said the company has already spent $3.5 million on expansion and expects to increase employment from 135 to 500 by early 1982.

American SS Names Sproul Engineering Director

Gavin Sproul

Gavin Sproul has been appointed director of engineering for American Steamship Company, Buffalo, N.Y. The announcement was made recently by **Thomas W. Burke,** president and chief executive officer.

Mr. **Sproul** previously served with the American Ship Building Company, where he was vice president-engineering of their AmShip Division.

New Brochure Describes Commercial Marine Lights From Guest Corporation

The Guest Corporation of West Hartford, Conn., offers a four-page brochure describing and illustrating its line of shipboard lighting products. The company claims to have originated the electronic strobe water light more than 20 years ago.

In addition to the strobe man-overboard lights, the brochure lists automatic barge lights, flashing marker lights, and steady lights. A separate data sheet details the company's new personal flotation device (PFD) lights, which the Coast Guard now requires for all U.S.-registered commercial vessels on oceangoing, coastwise, and Great Lakes voyages.

For free copies of the Guest literature,

Write 24 on Reader Service Card

Administration Establishes Coal Export Working Group —Will Move 'Aggressively'

The Reagan Administration implemented its coal export development policy when a high-level interagency working group met for the first time recently to tackle obstacles to U.S. coal exporting.

Commerce Secretary **Malcolm Baldrige,** opening the initial session, told officials from more than a dozen executive branch agencies that "you have the opportunity to redefine the United States' role in world energy economics."

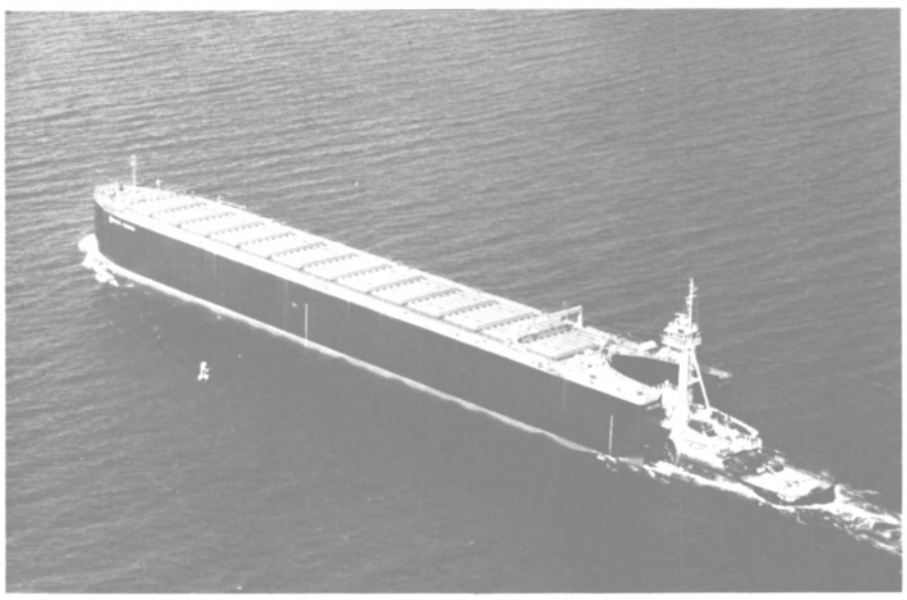
He cited Commerce Department estimates that coal exports will add more than $6 billion in trade income by 1985, and more than $14 billion by the year 2000.

"You can help us change into a major world energy supplier and provide a key element in this Administration's economic recovery program," Secretary **Baldrige** said.

Assistant Secretary **William H. Morris Jr.,** named earlier as chairman of the new interagency group and chief Administration spokesman on coal export matters, said the group would "move aggressively to make this nation the preeminent source of coal on the world energy market."

This aggressive export policy, marine industry officials stated, will have significant impact on the growth and development of barge and tug construction as well as on the development of port terminal facilities in the U.S.

ON THE COVER



The Energy Freedom, with the tug Gulf Majesty, attained speeds of over 12 knots in a ballasted condition on its maiden voyage.

Bay Shipbuilding Delivers The 'Energy Freedom' — First Of New Fleet Planned By Universal American

Bay Shipbuilding Corp., a subsidiary of The Manitowoc Company, Inc., recently delivered ahead of schedule the 550-foot Energy Freedom to Universal American Shipping Corporation of Greenwich, Conn. The Energy Freedom was designed, engineered and built by Bay Shipbuilding Corp. in the record time of nine months and seven days from the date of contract commitment.

Universal American Shipping Corporation's president, **Karl Meyer**, commended the shipyard for the outstanding delivery performance, high quality of workmanship and for not initiating a single shipyard change order.

Universal American has chartered the Energy Freedom to New England Electric System for carrying coal from the ports of Hampton Roads, Baltimore and Philadelphia to its Brayton Point station in Somerset, Mass., and Salem Harbor station in Salem, Mass. The name Energy Freedom was chosen for the new jumbo bulk barge because of the charterer's plan to drastically reduce its dependence on foreign oil. In its first year of service, the coal that the Energy Freedom will carry will displace five million barrels of oil, saving New England Electric System's customers an estimated $50 million. The Energy Freedom loaded its first coal cargo at Conneaut, Ohio, only a few days after delivery.

Energy Freedom has an overall length of 550 feet, beam of 78 feet, depth of 50 feet, a total hold capacity of 1.5 million cubic feet and a summer deadweight cargo capacity of 33,700 tons. The vessel is American Bureau of Shipping classed + A-1 for unrestricted ocean service.

The vessel, with Bay Ship's unique hull design form and with Gulf Fleet's tug Gulf Majesty, attained speeds over 12 knots in a ballasted condition on its maiden voyage.

The barge is fitted with 13 individual lift-off type hatch covers and a 15-ton Marine Travelift, Inc. hatch crane. Electrical power aboard the barge is provided by two Caterpillar/KATO 130-kw generating units controlled through a Bay Shipbuilding Corp.-designed and built switchboard. Two 4,000-gpm ballast pumps and a 250-gpm general service pump were supplied by Johnston Pump Company. The anchor windlass and mooring winches were supplied by New England Trawler Equipment Co. Motorola, Inc. supplied remote controls that will allow the tug to release the anchor. The vessel has two adjustable skeg rudders of which the hydraulic units and cylinders were provided by Great Lakes Fluid Power.

The twin-screw 149-foot motor vessel Gulf Majesty, with 7,200 brake horsepower pushes the barge from a 60-foot- deep stern notch. The tug was fitted at Bay Shipbuilding Corp. with a secondary 49-foot raised pilothouse. Bow and side bumpers were installed to convert the tug from a towing to a combination notch/towing tug.

The Energy Freedom is the third of five ocean petroleum and bulk carriers recently contracted to be built by Bay Shipbuilding Corp. of Sturgeon Bay, Wis., one of which is a 44,000 cargo deadweight self-unloading phosphate carrier.

Mr. **Meyer** commented that Energy Freedom is the most efficient coal carrier for the U.S. coastwise trades and it is the first of a planned fleet of large ocean barges. Universal American Shipping Corporation is committed to participate in the U.S. coal movements.

Energy Freedom

McDermott Official Says Marine Building Outlook In Gulf Area Is 'Best Ever'

"The outlook for marine construction in the Gulf of Mexico in the 1980s is, in my view, not only good, it is great," **Robert E. Howson**, president of McDermott Marine Construction, recently told participants in a symposium sponsored by the University of New Orleans on the "Economic Future of the Gulf South."

Noting the Louisiana Gulf was the birthplace of offshore oil and gas development more than 30 years ago, Mr. **Howson** said: "Normally, when an area has been developed for 30 years you would expect the oil and gas to have been depleted to the point that production is in decline. Such is not the case in the Gulf."

In fact, he said, oil companies are paying more than ever for Gulf offshore leases. In response

Robert E. Howson

to the most intense drilling ever in the Gulf, the demand for mobile drilling rigs has created backlogs to 1985 at the Gulf Coast yards that build the rigs, according to Mr. **Howson**, and the demand for vessels used to service offshore rigs and platforms is up. He added that a recent U.S. Interior Department survey of 31 oil, gas and pipeline companies ranked the Louisiana offshore area as the one preferred most for future Outer Continental Shelf development.

Mr. **Howson** said McDermott's basic business — building fixed steel platforms and laying undersea pipelines — in 1980 was more active in the Gulf than anywhere else in the world. Last year the industry installed 130 platforms in the Gulf and laid 715 miles of pipe there, he said, while worldwide, 273 platforms were installed and 1,606 miles of pipe were laid.

An important reason for the current activity in the Gulf, Mr. **Howson** said, is that economic incentives created by higher energy prices are leading to renewed development of existing fields. Mr. **Howson** also said the Reagan Administration's promise to accelerate offshore leasing is an important factor in the current boom.

"With the end to increasing demand for oil and gas nowhere in sight," Mr. **Howson** said, "the numbers of wells drilled and the amount of marine construction required in the Gulf are getting stronger each year. Our prediction is that work will continue to pick up at least through the middle of the decade, and that it will only begin to taper off after the peak of production is actually reached."

Mr. **Howson** said that the oil industry spends billions of dollars yearly on marine construction in the Gulf. Accordingly, he said, companies such as McDermott will continue to have a profound effect on the Gulf Coast economy. One constraint he said the industry faces, however, is a lack of skilled labor in the area.

$5.7-Million Barge Contract Awarded To Steel Style

Steel Style, Inc., Newburg, N.Y., was awarded a $5,770,675 firm fixed price contract for covered lighters and open lighters, with options. The lighters are non-self-propelled barges used for material storage. The Naval Sea Systems Command was the contractor.

Report Available On Performance Of Caprinus R Oil On ODECO Drillship

Performance of Caprinus® R Oil, in three medium-speed EMD 16-645E8 engines on the ODECO drillship Ocean Tempest has been published by Shell Oil Company in a new six-page full-color brochure.

Caprinus R is Shell's premium MVI oil for medium-speed engines used in marine, railroad and stationary power applications. The three engines have logged more than 31,000 hours with no major repairs. The performance report outlines the maintenance and lubrication practices which have helped to attain the lengthy, trouble-free service.

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Large Vessels Booked For Dry Dock 4 At Portland Repair Yard

The 262,376-dwt American Spirit recently entered the Portland Ship Repair Yard, Portland, Ore., for repairs. The 1,100-foot-long ship is the largest ever to enter the yard, but the record will not hold for long. In November, the 264,073-dwt S/S Maryland is scheduled to be repaired at the yard's Dry Dock 4.

According to yard manager **Chuck McKeown**, "Seventeen ships are scheduled to go up on the blocks at Dry Dock 4 between September and December of this year."

Bulletin From International Shows Performance On 400 Vessels Of SPC Coatings

International Paint Company, Inc. has announced availability of a new, 14-page technical bulletin introducing its "Intersmooth SPC Family of Self Polishing Copolymer Antifoulings," which the company reports "cut fuel costs an average 12 percent yearly."

The bulletin documents Intersmooth SPC performance on over 400 vessels—ranging from fishing vessels to ULCCs—since 1974.

Describing the concept of the Intersmooth SPC Family, the bulletin advises "to improve operational profitability, shipowners must do more than simply control macroscopic fouling—including weeds, slimes and barnacles—due to their direct effect on performance."

Using graphic comparisons, and statistical tracking, the bulletin compares performance between vessels using traditional coatings, and those treated with Intersmooth SPC. Results show, according to the company, Intersmooth SPC cutting operating costs in a dramatic manner.

Over 1,500 vessels treated with traditional antifouling coatings (including container vessels, oil tankers, passenger liners, bulk carriers, cargo vessels, and ferries) were also monitored by International Paint.

International states the bulletin clearly demonstrates how costs and benefits derived via Intersmooth SPC applications are substantial, resulting directly in operational profitability for shipowners.

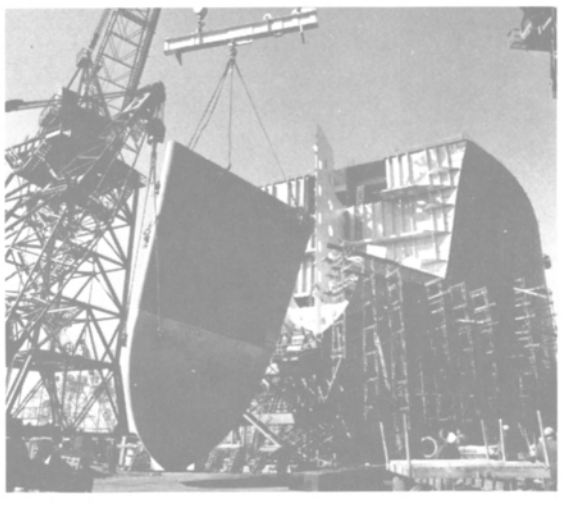
The new International Paint Company, Inc. technical bulletin describes how each member of the "Intersmooth SPC Family of Self Polishing Copolymers" is formulated and processed for specific applications.

For copies of the Intersmooth SPC Family brochure,

Write 28 on Reader Service Card

Marine Services by Bethlehem

Fast, dependable service for all types and sizes of vessels.



Shipbuilding

SPARROWS POINT, MD.
Sparrows Point Yard 1 basin 1200 x 200 ft plus 4 ways to 830 ft. Large crude and LNG carriers; container and other merchant ships; naval auxiliaries; special purpose vessels. Jumboizing and conversion. Offshore mobile drilling platforms.

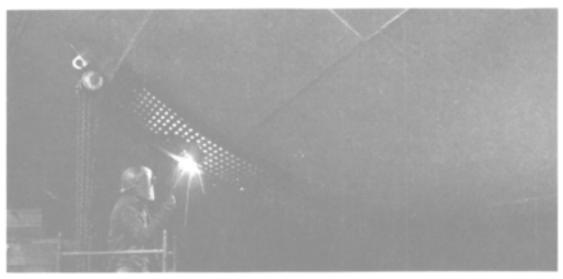
BEAUMONT, TEXAS
Beaumont Yard 2 sidelaunching ways over 800 ft each. Offshore mobile drilling platforms, workover rigs, and oil production and storage facilities. Barges. Jumboizing and conversion.

SAN FRANCISCO, CALIF.
San Francisco Yard 1 way for construction up to 600 ft x 95 ft beam. Barge design and construction. Jumboizing and conversion.

SINGAPORE
Bethlehem Singapore Private Limited Facilities for building offshore drilling, production, and storage units...plus small cargo ships, dredges, barges, tenders, etc. Miscellaneous fabrication.

Ship Repair

Drydocking. Conversion. Reconditioning. Jumboizing. Pierside and anchorage repairs. Industrial fabrication. Sheet metal and machine shop work. Weldments.



BOSTON HARBOR
Boston Yard 3 drydocks to 20,000 tons

NEW YORK HARBOR
Hoboken Yard 4 drydocks to 26,000 tons
At Bayonne 1 graving dock, 1,092 x 140 ft

BALTIMORE HARBOR
Baltimore Key Highway Yard 4 drydocks to 44,000 tons
Baltimore Fort McHenry Yard 1 graving dock, 460 x 58 ft

BEAUMONT, TEXAS
Beaumont Yard 1 drydock, 17,500 tons

SAN FRANCISCO HARBOR
San Francisco Yard 2 drydocks to 65,000 tons

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—at Baltimore, 275 tons capacity.
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Authorized repairer for B&W, Doxford, Fiat, Stork, and Mitsubishi diesels, Napier turbo-blowers, and Stal-Laval and Bethlehem turbines. Spare parts.

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- Propeller and line shafts. Rudders, stern frames, tubes, and bushings. Universal mooring chocks. Steel castings.
- Fresh water distillers. Condensers and parts. Separators. Coolers.

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Bethlehem Steel—Shipbuilding

Ship Repair Sales Office: One State St. Plaza, New York, NY 10004 Phone: (212) 558-9500. Cables: BETHSHIP New York. Telex: 222-847.
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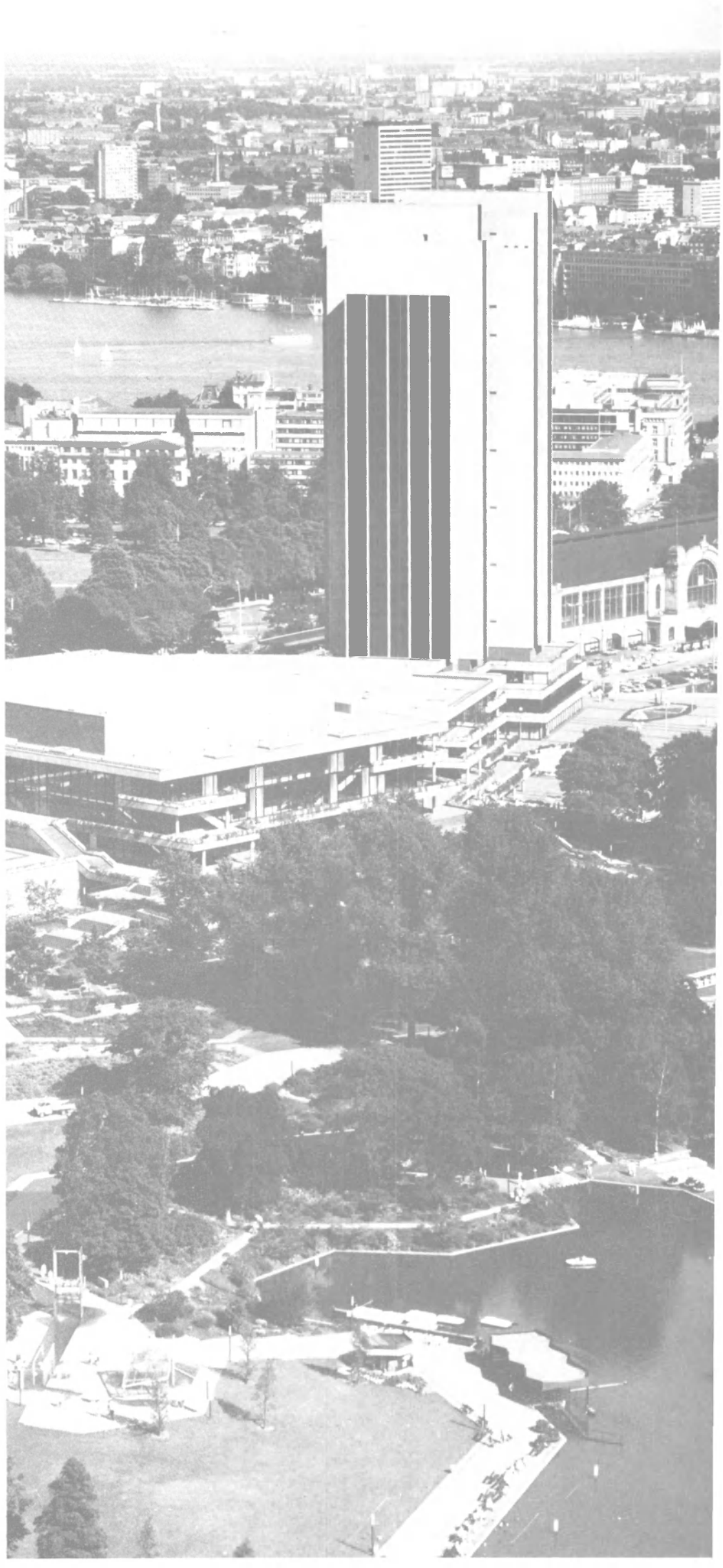

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The official Gastech '81 Reception will be hosted by Poten & Partners Inc., New York. All delegates and accompanying spouses will receive an invitation to attend the Reception, which will be held in the Congress Centrum at 7:30 p.m. on Wednesday, October 21. An informal Welcome Party for all registered participants will be held in the Congress Centrum Hamburg at 5:30 p.m. on Tuesday, October 20.

An attractive program of tours has been arranged for the spouses of the delegates.

The head office of Gastech '81 is located at 2 Station Road, Rickmansworth, Herts WD3 1QP, England. Information about Gastech '81 may be obtained in the United States from Gastech (USA) Sales, Kallman Associates, 30 Journal Square, Jersey City, NJ 07306, Telephone: 201-653-3304.

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Gastech '81

(Continued from page 19)

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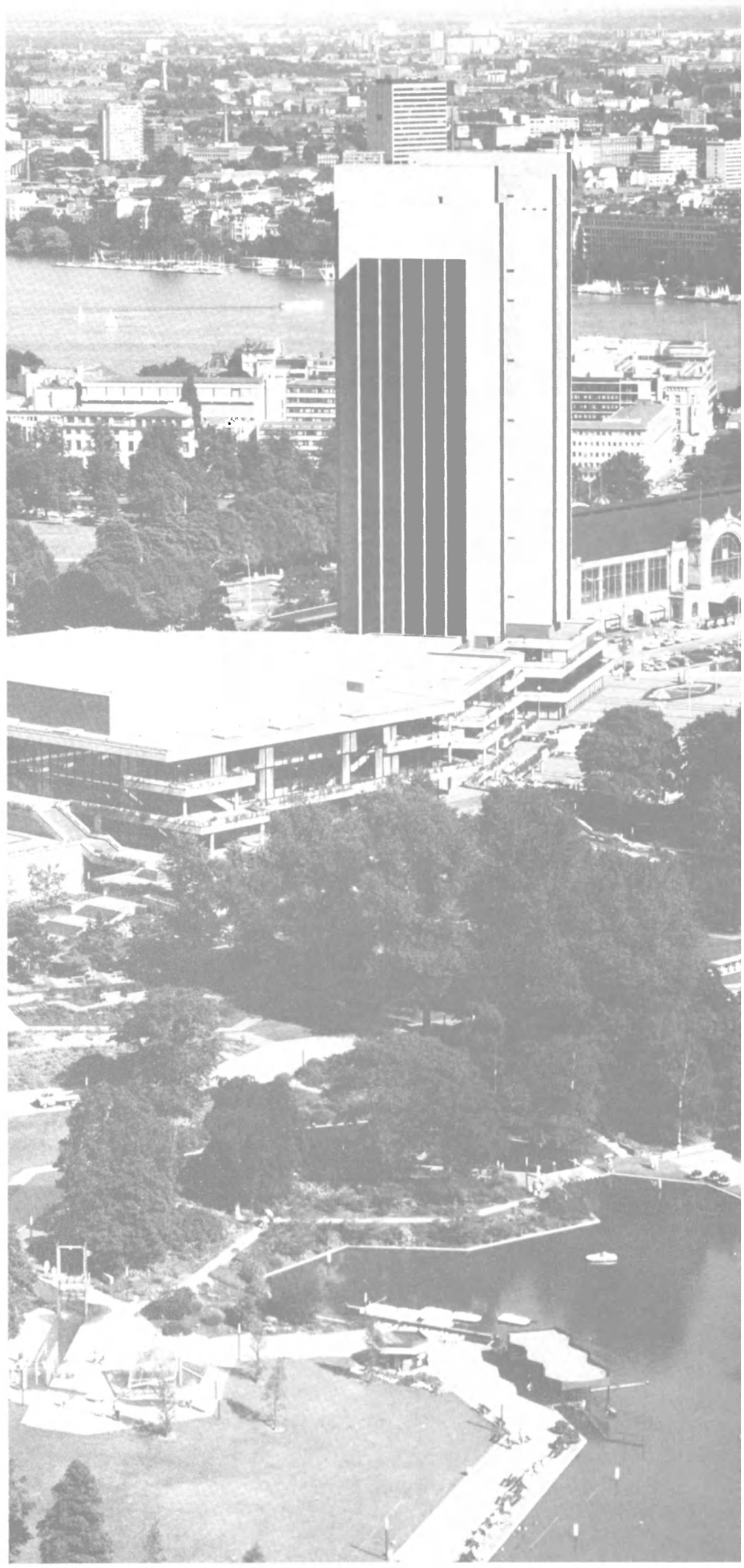

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T. Refvem, general manager, Gas and Gas Liquids, Norsk Hydro, A.S., Oslo, Norway; **J.E. Sandvik,** vice president, Refining and Marketing, Statoil, A.S., Stavanger, Norway; **M. van de Luitgaren,** manager, Eurogas Terminals C.V., Eurogas, Rotterdam/Flushing, The Netherlands, and **K.J. Vaughan,** assistant general manager-Business Development, BNOC Trading Ltd., London.

3:30 pm — **Session 3: Offshore Gas and Gas Production—Technical Workshop.** (Hall 6, concurrent with Session 2). **Utilization of a Marginal Gas Field with Major NGL Content by Natural Gas Liquefaction and Offshore Loading** by **D. Meyer-Detring,** Preussag Erdol und Erdgas, Hannover; **E. Berger,** Linde AG, Werkesgruppe TVT, Munich; **H.G. Butt,** Bilfinger + Berger, Hamburg; **K. Finsterwalder,** Dyckerhoff & Widmann, Munich, and **K. Petersen,** Blohm + Voss, Hamburg. **The OLASCO Offshore Liquefaction and Shipping System for Marginal Gas Fields** by **K.W. Edwards, E.K. Faridany** and **J. Sloggett,** Offshore Liquefaction and Shipping Co. Ltd., London.

4:30 pm — **Control of Dynamic Bodies Moored in an Open Seaway** by **T. Hillberg,** Delta Marine, La Habra, Calif.

5:00 pm — **Baseload LNG Plants with Spherical Storage Tanks, All Built As Very Large Modules** by Dr. **J. Bakke** and **P.G. Andersen,** Moss Rosenberg Verft A.S., Moss, Norway.

5:30 pm — **Cryogenic Flexible Pipes for Offshore LNG/LPG Production** by **J.M. Dumay,** Coflexip, Paris.

7:30 pm — Cocktail buffet reception for all delegates and their ladies, sponsored by Poten & Partners Inc., New York (admission by invitation only).

Thursday, October 22

9:00 am—**Session 4: Transportation Technology and Operations.** Chairmen: **R.C. Ffooks,** consultant, London, and **R.J. Lakey,** president, Lakey Associates Inc., Houston, Texas.

9:00 am — **A Submarine LNG Tanker Concept for the Arctic** by **P. Takis Veliotis,** executive vice president-marine, General Dynamics Corporation, St. Louis, Mo. and **Spencer Reitz,** deputy general manager, General Dynamics Electric Boat Division, Groton, Conn.

9:30 am — **Energy-Saving LNG Carriers** by **R.S. Kvamsdal** and **S. Koren,** Moss Rosenberg Verft A.S., Moss, Norway.

10:00 am—**On the Study of the Tank System of 125,000 cu. m. MRV Type LNG Carrier (Loads and Stress Analysis)** by Dr. **R. Nagamoto, M. Ushijima, D. Sakai, K. Hagiwara, T. Takahashi** and **Y. Kuramoto,** Mitsubishi Heavy Industries Ltd., Nagasaki.

10:30 am—Coffee break.

11:00 am—**Response of Spherical Cargo Tanks for Liquefied Gas to Large Support Deformation** by Dr. **J.L. Armand,** Department of Naval Architecture, University of California, Berkeley, Calif.

11:30 am—**A Comparison of the Collision Resistance of Membrane Tank-Type and Spherical Tank-Type LNG Tankers** by **P.R. Van Mater Jr.,** Band, Lavis and Associates Inc., Severna Park, Md.; **D.L. Edinberg,** Gianotti & Associates, New York and **P. Orsero** and **D. Finifter,** Institut de Recherches de la Construction Navale, Paris.

12:00 noon—**Some Notes on the Practical Application of the IMCO Gas Carrier Code to Pressure Type Cargo Tanks** by **M. Bockenhauer,** Germanischer Lloyd, Hamburg.

12:30 pm—Luncheon for Conference delegates.

2:00 pm—**Prediction of Sloshing Loads in LNG Ships** by Dr. **J.C. Peck,** McDonnell Douglas Astronautics Company, Huntingdon Beach, Calif. and **P. Jean,** Gaz-Transport, Le Havre, France.

2:30 pm—**LNG Transfer Ship-to-Ship Following LNG Libra Tail-**

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Gastech '81

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shaft Failure by **G.J. Masaitis** and **E.G. Tornay,** Energy Transportation Corporation, New York.

3:00 pm — **Port Planning and Management Aspects of the Shipment of LNG and LPG** by Capt. **P.R. Lyon,** Eagle Lyon Pope Associates, Dr. **D.H. Slater** and Dr. **M.A.F. Pyman,** Technica Ltd., London.

4:00 pm—**Session 5: Safety and Training.** Chairman: **R.C. Gray,** British Shipbuilders, Newcastle-upon-Tyne, UK. **Staying Safe and Retaining Earnings: A Team Approach to Systems Integrity on LPG Carriers** by **D.W.F. Gosden, M. Smith** and **P. Elkington,** Bibby Bros. & Co., Liverpool, UK.

4:30 pm—**Assessment of Consequences from Accidental Release of Liquefied Gases** by **D.M. Solberg** and **E. Skramstad,** Det norske Veritas, Oslo.

5:00 pm—**LNG Safety Research Overview** by **S. Atallah,** Gas Research Institute, Chicago, Ill.

Friday, October 23

9:00 am—**Session 5: Safety and Training** (cont'd). **Simulation and Its Role in Liquefied Gas Carrier Personnel Training** by **G. Angas,** College of Nautical Studies, Warsash, Southampton.

9:30 am — **Alternative Fire Protection Systems for LPG Vessels** by **J.M. Wright** and **K.C. Fryer,** Blevex Ltd., Borehamwood, Herts., UK.

10:00 am — **Poison-Resistant Flammable Gas Sensors for LNG/Offshore Installations** by **J.M. Sonley,** International Gas Detectors Ltd., Wetherby, W. Yorks., UK.

10:30 am — **Safety of Liquefied Gases Containment Systems on Land and at Sea** by **M. Kotcharian** and **J.M. Simon,** Technigaz, Maurepas, France.

11:00 am—Coffee break.

11:30 am—**Session 6: Liquefied Gas Storage.** Chairman: **Robert E. Petsinger,** LNG Services Inc., Pittsburgh, Pa. **State-of-the-Art Assessment of Refrigerated Liquefied Gas Storage Systems Using Flat Bottom Tanks** by **L.P. Zick** and **I.V. La Fave,** Chicago Bridge & Iron Company, Oak Brook, Ill.

12:00 noon—**Test Tank Program for Liquefied Gas Storage Using the GT/MDC Containment System** by **T.M. Yamakawa,** Tokyo Kanetsu K.K., Japan.

12:30 pm—Luncheon for Conference delegates.

2:00 pm — **Unloading of Large LPG Carriers into Salt and Rock Caverns** by **W. Brumshagen, LGA Gastechnik** GmbH, Remagen-Rolandseck, Germany.

2:30 pm—**Commissioning of the 120,000 cu. m. Storage Tanks of the Gaz de France LNG Terminal** by **C. Riou** and **C. Zermati,** Technigaz, Maurepas, France.

3:00 pm—**Foundation Failure and Its Remedy for a Liquefied Gas Storage Tank** by **W.C. van Hoof,** Raychem Corp., Menlo Park, Calif. and **J.P. Ofrenchuck,** Cyanamid of Canada Ltd., Niagara Falls, Ontario.

3:30 pm — **Operation of the World's Largest LPG Plant** by **S. Shtayieh,** Kuwait Oil Co.; **C.A. Durr** and **J.C. McMillan,** M.W. Kellogg, Houston, Texas and **C. Collins,** M.W. Kellogg, London.

4:00 pm — **Session 7: Development of the World's LPG Carrier Fleet — Technical Workshop and Discussion Session.** Chairman: Dr. Ing. **H. Backhaus,** LGA Gastechnik GmbH, Remagen-Rolandseck, Germany.

Subjects:

a. **Classification of LPG Carriers: Aspects of New and Foreseeable IMCO Rules** by **J. Benoit,** Bureau Veritas, Paris.

b. **Views of a Shipbuilder Towards Modern Gas Carriers** by **A.B. Bjoerkman,** Oy

(continued on page 24)

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Gastech '81

(continued from page 22)

Wartsila AB, Turku, Finland.

c. **Peculiarities of Gas Tanker Operations: Crews and Qualifications, Safety and Training** by **P.R. Mitchell,** P & O Bulk Shipping Ltd., London.

d. **Special Queries of Gas Transporting Contracts** by **J.M. Mabileau,** Gasteam Ltd., London.

e. **Shipping and Terminalling Capacities for the Increased LPG World Market** by Dr. **R-D. Behling,** Gelsenberg AG, Hamburg.

Gastech '81 Exhibitors

(Latest information at press time)

Belgium
- Boelwerf
- Truflo

Denmark
- Svanehoj

Finland
- Wartsila

France
- ACE
- AMRI
- Bureau Veritas
- Ch. de l'Atlantique
- Ch. France-Dunkerque
- Ch. Nav. de la Ciotat
- C.N.I.M.
- Coflexip
- Conemsco
- C.S.C.N.M.M.
- Eaton Electrical/Electronic Control
- L'Industrie du Petrole
- Petroles Informations
- Pompes Hibon
- Technigaz

Hungary
- Chemokomplex

Italy
- Snamprogetti
- Termomeccania

Luxembourg
- Trade ARBED

The Netherlands
- De Boer/Ajax
- Enraf Nonius
- Holec
- Thomassen Group

Norway
- Aukra Bruk
- Det norske Veritas
- Eivind Koch
- Kvaerner Kulde
- Moss Rosenberg
- Thune Eureka
- Unitor
- Westad Armaturfabrik

Spain
- Auxini
- SENER

Sweden
- AGA - Cryo
- Kockums

Switzerland
- Cryostar
- Sulzer

United Kingdom
- Blevex
- BOC TechSep
- British CECA
- CBMPE
- Daniel Industries
- DBM Systems
- Daniel Doncaster
- Grove Valve
- Int. Gas Detectors
- Liquid Gas Equipment
- Munro & Miller
- Newman Hattersley
- OLASCO
- Ocean Phoenix Gas Transport
- Orbit Valve
- Serck Audco Valves
- Shell Int. Marine
- Teddington Bellows
- John Thurley
- TI Flexible Tubes
- Worcester Controls

United States of America
- Airco Cryogenics
- Airco Industrial Gases
- Anderson Greenwood
- Browning Ferris
- J.C. Carter
- Chicago Bridge & Iron
- Detector Electronics
- The Energy Group
- Flodyne Controls
- General Dynamics
- Goddard Valve Corp.
- Jamesbury
- McDonnell Douglas
- Posi-Seal
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- Reactor Services
- Reinforced Earth
- Royal Valves
- Scientific Instruments
- Worthington Pumps

West Germany
- 3R International Vulkan-Verlag
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- Wilhelm Bitter Armaturen
- Blohm + Voss
- Otto Bosse
- Bremer Vulkan
- Bureau Veritas
- Chemische Industrie
- CKT - Calor Gas
- Deutsche Babcock

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Gastech '81

(Continued from page 24)

Deutsche Richard Kablitz
Dragerwerk
Dyckerhoff & Widmann
Erdoel & Erdgas Zeitschift
Erdol & Kohle, Erdgas Petrochemie
F.W. Fox
G + H Montage
Gefahrliche Ladung
Germanischer Lloyd
Guide Regelarmaturen
HDW Howaldtswerke Deutsche Werft
HANSA
Hamburger Rohrbogenwerk
IBAK Helmut Hunger
IWK Regler und Kompensatoren
KAEFER Isotiertechnik
Kloeckner Fluessiggastanklager
Kloeckner Werke
KOWAT
LGA Gastechnik
Linde
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MCK Reactor Service
Messer Griesheim
Jos. L. Meyer
Neles
Offshore LNG Systems
Herbert Ott Vertriebs
Pintsch-Bamag Gastechnik
Pipeline Engineering
Rheinhold + Mahla
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Thyssen Nordseewerke
VIA
VTA
Westerwalder Eisenwerk Gerhard AG Weser
W.I.M.
Witzenmann
Zelleweger Uster/Sieger

Award $2.9-Million Navy PSA Contract To Todd

Six U.S. Navy contracts totaling $2.9 million for advance planning and procurement to support post shakedown availability (PSA) work on six guided missile frigates (FFGs) have been awarded to Todd Pacific Shipyards Corporation, **Lennart M. Thorell,** vice president and general manager, Los Angeles Division, announced recently.

These contracts cover preliminary work on the frigates constructed at Todd's Los Angeles shipyard which will return later for PSA work valued at approximately $45 million.

The new contracts are in addition to four PSA contracts currently held or completed by Todd Pacific Los Angeles. The first PSA contract completed at Los Angeles on the USS Wadsworth (FFG-9) was completed on schedule and under cost by approximately 12 percent. The second PSA on the USS George Philip (FFG-12) is in progress and is expected to be completed two weeks ahead of the contract delivery date and significantly under contract cost. The company believes this successful record can be sustained throughout the remaining PSA contracts to be completed.

Cunningham Marine Opens Jacksonville Repair Plant

Cunningham Marine Hydraulics Co., Inc., Hoboken, N.J., recently opened a hydraulic equipment repair facility in Jacksonville, Fla. The new shop, which is now in operation, is located at 2030 East Adams Street near the Jacksonville Port Authority and Jacksonville's ship repair facilities.

The new repair facility is an independent unit with its own machine shop, test stand, and other equipment necessary for efficient, reliable service. **Michael Bradford,** currently manager of engineering at Hoboken, will be responsible for overall management of the Jacksonville unit. **Joseph Oliver,** a service engineer with CMH for the past seven years, will manage the service operations of the unit.

Military Charters Two Farrell Ships

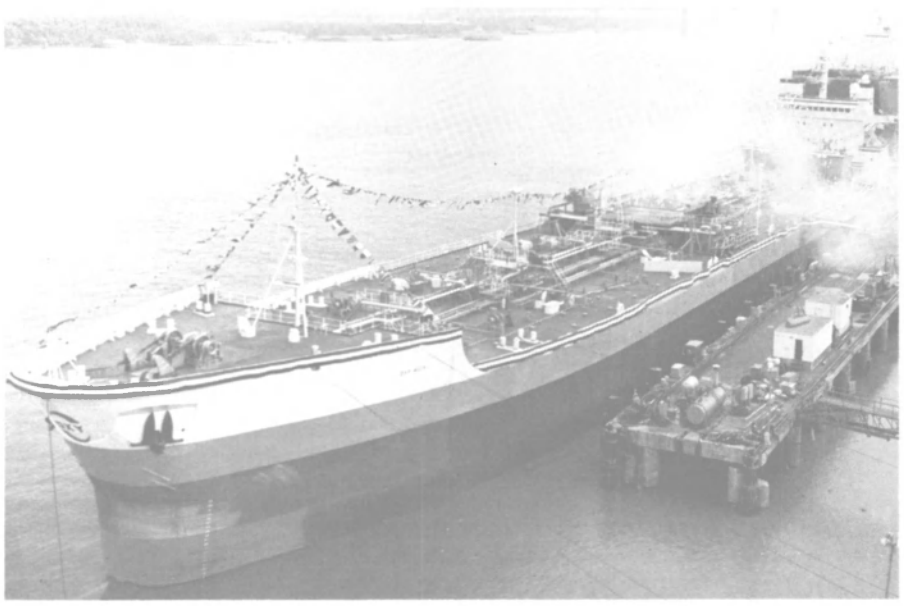
Farrell Lines has withdrawn two of its barge-carrying LASH ships from its West Coast service to Australia and New Zealand, and has chartered them to the Military Sealift Command, with their full complement of barges. The ships, the Austral Lightnight and Austral Rainbow, are being repositioned on the East Coast for delivery to the MSC.

AAPA To Hold Convention In Los Angeles, Oct. 25-29

The 70th annual convention of the American Association of Port Authorities (AAPA) will be held in Los Angeles, Calif., October 25-29.

Featured will be workshops on a wide range of topics such as deregulation, bond market planning, port planning for the 1980s, new maritime legislation, and port construction trends in developing nations.

According to **W. Don Welch**, chairman of the AAPA, among the speakers will be U.S. Secretary of Transportation **Drew Lewis**; Assistant Secretary of the Army **William Gianelli**; **Pierre Franche**, Canadian National Harbours Board, and **Fernando Manfredo**, Deputy Administrator of the Panama Canal Commission.



Christening ceremonies were held recently at Avondale Shipyards for the Oxy Grower, the third and final chemical tanker of the integrated catamaran tug-barge design built at Avondale for Occidental Petroleum Corporation.

Avondale Christens The Oxy Grower

Christening ceremonies were held recently at Avondale Shipyards, Inc., for the Oxy Grower, a 57,000-dwt tug-barge combination vessel built by Avondale Shipyards for a subsidiary of Occidental Petroleum Corporation. The Oxy Grower is the third and final chemical tanker of the integrated catamaran tug-barge design built at this shipyard.

Mrs. John Culhane of Los Angeles, Calif., served as sponsor. Mr. **Culhane**, vice president of Occidental Petroleum Corporation for planning and new business, was principal speaker.

Other principals involved in the Oxy Grower christening included **Albert L. Bossier Jr.**, president of Avondale Shipyards, Inc., who presided over the ceremony; **Miss Michelle Tierce**, daughter of Mr. and **Mrs. Bobby Tierce**, served as flower girl. The position of flower girl is traditionally given to the daughter of an Avondale employee. **Miss Tierce's** father is a shipfitter in the Westwego Yard.

The Oxy Grower, designed to carry superphosphoric acid (SPA) and other liquid chemicals in five stainless steel tanks, and petroleum products in 10 wing tanks, embarked on her maiden voyage about the middle of September. The vessel will join her sister ships Oxy Trader and Oxy Producer in shipment of SPA to the Soviet Union.

Occidental, a natural resources company under the leadership of Dr. **Armand Hammer**, chairman of the board and chief executive officer, is a major producer and distributor of agricultural chemicals.

Avondale Shipyards, Inc. is a subsidiary of Ogden Corporation, which operates in the major market areas of metals, transportation, and food.

Principals of the Oxy Grower christening were (left to right) Master **Simon Culhane**; Admiral **Tazewell Shephard**, executive vice president of Occidental International Corporation; **Mrs. Tazewell Shephard**; **Mrs. John Culhane**, sponsor of the Oxy Grower; **John Culhane**, vice president-planning and business development of Occidental Petroleum; and **Albert L. Bossier Jr.**, president and chief operating officer of Avondale Shipyards, Inc.

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Two-Ferry Modification Contract Worth $38 Million Awarded Burrard Yarrows

Burrard Yarrows Corporation, Victoria, B.C., Canada, was recently awarded a $38-million contract for the conversion and modifications to two more B.C. ferries. The work is similar to but more extensive than that done earlier on the Queen of Vancouver and the Queen of Victoria by Burrard Yarrows.

Don Challinor, general manager of the company's Victoria Division shipyard at Esquimalt, said that under the new contract, the superstructures of the two ferries will be cut horizontally from bow to stern, and the whole 1,600-ton superstructure lifted 10 feet by a hydraulic jacking operation. This will provide the clearance for the construction of a new upper cardeck and retractable platform decks which will increase the vehicle carrying capacity of the ferries from the present 200 to 400.

In addition, the ferries will be fitted with a new bulbous bow, an extension on the stern, and will be fitted with new sponsons to meet new stability requirements. New engines and propulsion equipment will be installed and extensive refurbishing will be done in the passenger areas. Both ferries will be back in service next spring.

Brochure Available On Engelhard's Cathodic Protection System

A 12-page color brochure describing its CAPAC® cathodic protection system has been produced by the Industries Division of Engelhard Minerals & Chemical Corp., Union, N.J.

The brochure outlines in simple terms the advantages of the system and discusses the characteristics of the equipment in fighting hull corrosion. The Engelhard system offers a wide range of components to suit a ship's configuration and ac system. Four-color photographs highlight some of the results from use of the system. For a free copy of the brochure,

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Herrmann Elected VP At Offshore International

The Offshore Company, Houston, Texas, announced recently that **Robert P. Herrmann** was elected a vice president of Offshore International, S.A., a wholly owned subsidiary of The Offshore Company engaged in international contract drilling of oil and gas wells.

Mr. **Herrmann** joined The Offshore Company in 1973 as a design engineer, and subsequently served in London as engineering manager of European operations. Earlier this year, Mr. **Herrmann** became managing director of International Drilling Company, Ltd., and in July was promoted to division manager of the Discoverer Seven Seas Division.

Two Japanese Yards Win $280-Million Offshore Rig Order From Gulf Subsidiary

Two Japanese shipbuilders have recently received a contract valued at an estimated $280 million providing for delivery to the Canadian subsidiary of Gulf Oil Corp. of two offshore oil drilling rigs.

Mitsui Engineering and Shipbuilding Co. and Ishikawajima-Harima Heavy Industries Co. recently received the orders from Gulf Canada Resources Inc. The contract was signed in Calgary, Alberta.

The rig to be constructed by Mitsui is to be of conical shape, double-hulled, and equipped with a 12-anchor mooring system. It will be capable of operating under the most severe weather conditions in the Beaufort Sea.

Ishikawajima-Harima's rig is to be a mobile arctic caisson structure weighing around 33,000 tons.

New Booklet Available On Complete Seaward Line Of Buoys And Floats

Seaward International has published a new 32-page booklet on its complete line of Sea Float marine buoys and floats. This booklet includes complete specifications, such as net buoyancy, weight and diameter, on each type and model of buoy and float. The booklet's catalog format simplifies buoy selection, and the separate section of alternate end fittings adds design flexibility.

Sea Floats are resilient surface floats for marine and offshore applications. Typical applications include use as anchor pendant buoys for offshore pipelaying and crane barges, semisubmersible drilling and workover rigs; use as chain support buoys for single point mooring buoy pick-up lines or hoses; mooring buoys, and marker buoys. Seaward International also manufactures a line of floats providing subsurface buoyancy to 400 feet of submergence — the Deepfloat.

The Sea Float buoy was developed based upon the technology of Seaward International's Sea Cushion® foam-filled fender. These buoys are constructed with a rugged filament reinforced elastomer outer hull. Inside the Sea Float are two types of closed-cell foam. The outer layer is semiflexible to help absorb impacts. The inner layer is rigid foam, which bonds to the central strength member.

To receive a copy of the new four-color booklet,

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Logue Joins Longhorn As Regional Geophysicist

Hugh A. Logue has been appointed regional geophysicist, a newly created position, for Longhorn Oil and Gas Company, Oklahoma City, Okla., privately held independent exploration and production firm active both onshore and offshore, primarily in the Gulf Coast, Midcontinent and Rocky Mountain areas of the United States.

Mr. **Logue** will be involved with geophysical operations in the Texas Gulf Coast. He will be based in the company's Operations Headquarters in Houston, reporting to **Rex D. Womack**, Longhorn's chief geophysicist. Longhorn has corporate offices in the Oil Center Complex in Oklahoma City.

Stewart/Stevenson Equips Two Drilling Units With Hydranautics Systems

Hydranautics Hydraulic Systems, Goleta, Calif., announced recently that two of Stewart/Stevenson's inland drill barges will each be equipped with a Hydranautics drill floor skidding system consisting of four 150-ton mechanical Pin Claw Base assemblies and a control console. The two semisubmersibles are the first in the industry to be designed with a drill floor that can be moved both longitudinally and transversely.

The first of the two submersibles is already being operated by Temple Drilling Company, Houston, Texas, near Freeport, Texas.

The second, for Phoenix Management, Houston, will be used for drilling in Texas, Louisiana, and in the Gulf of Mexico.

Publish Brochure On Protective Covers

Griffolyn Company of Houston, Texas, a division of Reef Industries, Inc., has published a brochure detailing the applications and specifications of its line of nylon-reinforced polyethylene sheetings. Photographs of applications and specification charts for the company's three, five, and seven-ply covers are included. The sheets are used for shipping and storage protection, stockpile covers, crate and container linings, warehouse and cargo space dividers, paint and welding booth curtains, work shelters and enclosures, and pit and lagoon liners.

For a free copy of the Griffolyn brochure,

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Upward Trend Reported In World Orderbook

A steady upward climb in the world orderbook for the 27-month period from January 1979 to April 1981 has been reported by the newsletter Bremen International, published by the Senate of the West German city.

As of April this year, for vessels 2,000 dwt and over, there were 1,707 vessels on order — more than 51.6 million total deadweight tons. The lowest point in international shipbuilding during the last decade was reached in January 1979. The total order for the shipyards of 39 major shipbuilding countries—including the communist-controlled Eastern-Bloc countries and China—at that time was 1,315 ships with a total of 30.2 million dwt.

The high point of the last decade was reached in mid-1974 when 2,935 units of more than 233.8 million dwt were on order.

In the improved figures reported for the period ending in April of this year, the six foremost shipbuilders were: Japan, having orderbookings for 20.441 million dwt, 39 percent of the total orderbookings of the world shipbuilding industry; followed by South Korea, with 4.420 million dwt (8.2 percent); Brazil with 2.980 million dwt (5.8 percent); Spain with 2.514 million dwt (4.8 percent); Romania with 1.712 million dwt (3.4 percent); and Poland with 1.509 million dwt (2.9 percent).

Alfa-Laval Publishes Booklet On Treatment Of Low-Grade Heavy Fuel

Alfa-Laval, Inc., Fort Lee, N.J., has published a 20-page booklet entitled "Guidelines for the Pretreatment and Cleaning of Low-Grade Heavy Fuel Oils." The subject matter is applicable to heavy fuels used in marine and power generating diesel engines.

Illustrated with charts and flow diagrams, the guidelines are concerned with Alfa-Laval's recommendations for the pretreatment and cleaning of residual and distillate components from heavy fuel oil. Subjects such as dimensioning separators, mode of operation, pump arrangements, separation temperature control, pretreatment and cleaning systems, improving existing systems, and operation are treated in a comprehensive yet easy to read manner.

For a free copy of the guidelines,

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ABS Sets Procedures For Survey Requirements Of New Int'l Agreement

The American Bureau of Shipping (ABS) has forwarded to its field surveyors worldwide survey instructions relating to the enforcement provisions of the 1978 Protocol to the 1974 International Convention for the Safety of Life at Sea (SOLAS). Copies of these instructions also have been given to owners of all vessels in ABS classification.

Under the provisions of the '78 Protocol, contracting countries have elected to require mandatory annual surveys rather than unscheduled surveys, though some countries maintain the right to require both. The mandatory annual survey includes requirements covered separately in the Safety Construction and Safety Equipment Surveys specified in SOLAS '74, as well as other items usually reserved to port state inspections.

The annual survey will also cover items required for the International Oil Pollution Prevention Certificate under terms of the International Conference on Marine Pollution 1974 (MARPOL) and its 1978 Protocol when that convention comes into force.

ABS is authorized by many governments to conduct surveys and issue certificates in accordance with SOLAS '74, as well as for other international conventions.

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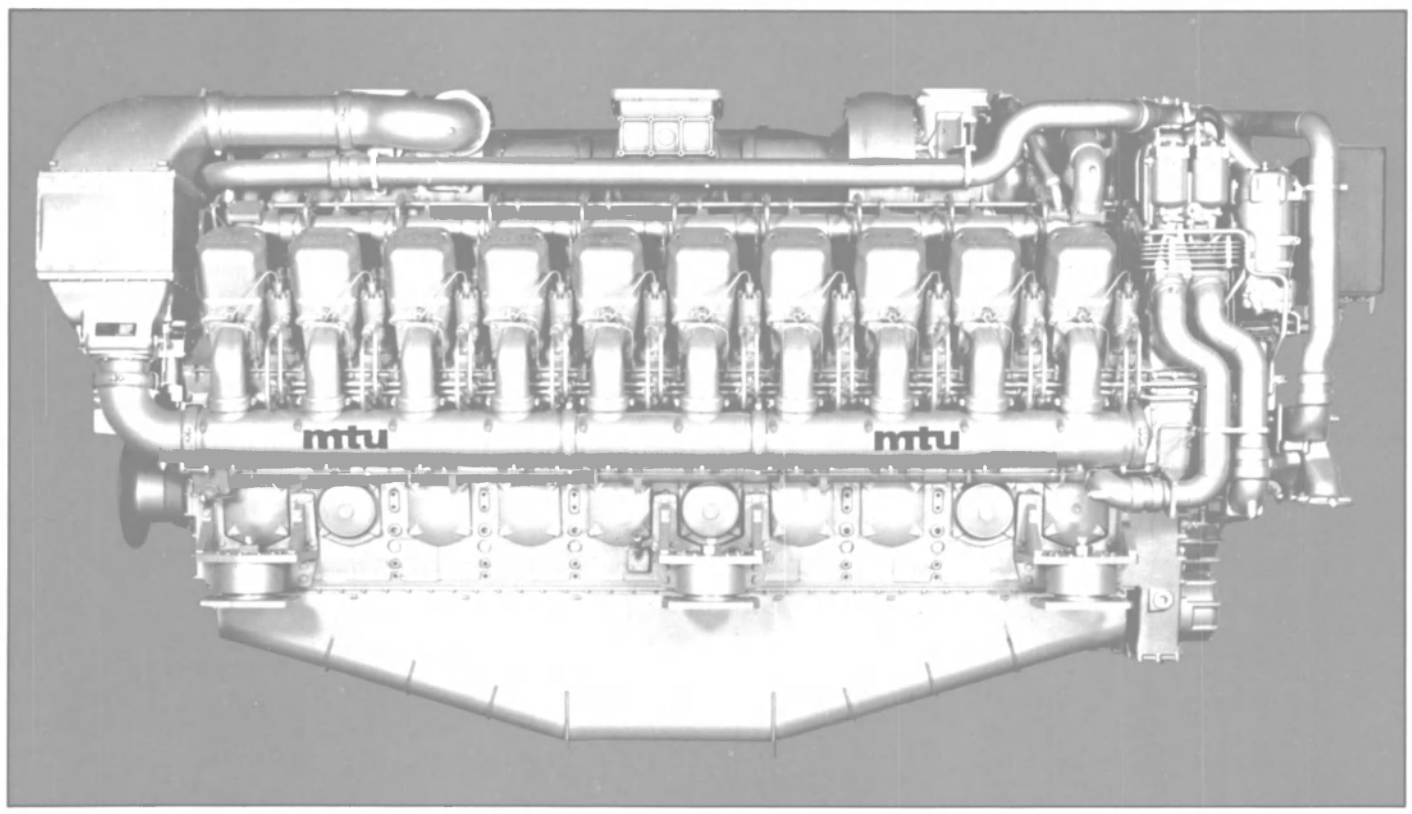

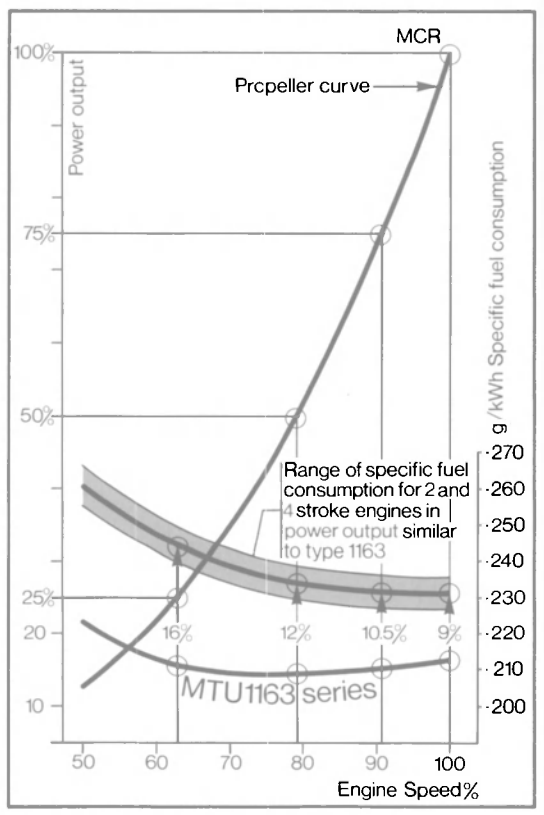

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Jeffboat Completes 160-Foot Towboat For Continental Grain Co.

The new towboat Conti-Betty Lynn made her maiden voyage on the Ohio River recently. Built by Jeffboat Inc., Jeffersonville, Ind., for ContiCarriers and Terminals, Inc., a subsidiary of Continental Grain Company, Des Plaines, Ill., the Conti-Betty Lynn is 160 feet long, 48 feet wide, 11 feet 6 inches deep, and is powered at 6,000 hp by two EMD engines.

The towboat is named to honor Mr. and **Mrs. Bernard (Betty Lynn) Steinweg**. Mr. **Steinweg** is senior vice president of Continental Grain Company. The vessel was christened at the waterfront in St. Louis, Mo.

CONTI-BETTY LYNN
Main Suppliers

Main engines	(2) GM16#7BA (EMD) rated 6,000 hp
Reverse reduction gears	Lufkin
Propellers	(2) 110-inch kort nozzle propellers
Main generators	(2) Detroit Diesel powered LIMA generators
Sanitary water system	Fairbanks-Morse
Fuel oil filter	Racor
Fire protection	Pyrotronics alarms Ingersoll Rand pump
Capstans	Schoellhorn-Albrecht
Winches	Beebe Bros.
Boat Hoists	P & H heavy lift
Radar	(2) Raytheon
Digital depth indicators	(2) Elac
Intercom	TOA Moakler
Sound-powered telephone	Henschel
Searchlight	Carlisle & Finch
Swing-o-meter	Rivertronics
Radios	(2) Raytheon VHF-FM One Modar single sideband

$36-Million Navy Contract Awarded To Rockwell

Rockwell International Corporation, Autonetics Division, Anaheim, Calif., has been awarded a $36,673,484 modification to a previously awarded letter contract for fabrication, test, and furnishing electrically suspended gyro navigators for new construction SSNs and backfit for SSN 637/688 class submarines. The Naval Sea Systems Command is the contracting activity.

New Underwater Vehicle From Hydro Operating For Santa Fe Diving

Santa Fe Diving Services, Inc., Houma, La., has announced that its first advanced-model, remote-controlled underwater vehicle, a Hydro Products RCV-150, has begun work off Brazil.

Thomas M. Angel, vice president and manager of the diving company, said recently that Santa Fe has a contract with Montreal Micoperi J.V. to provide the remotely controlled submersible vehicle and a crew of operators for the installation of the Enchova and Cherne platforms in the Campos Basin for Petrobras, the Brazilian government oil agency.

The RCV-150 was the first commercial unit produced by Hydro Products, and it is the fourth of 17 remote controlled submersible vehicles that Santa Fe intends buying. The three existing units are the smaller RCV-225 models. Santa Fe and Hydro Products are developing a winterized version of the RCV-150 for North Sea operations.

The RCV-150 is equipped with a low-light-level video camera, a high-resolution search sonar, and a multifunction manipulator arm that can grip, maneuver, saw, brush and cut objects in waters up to 2,000 feet deep.

The RCV-150 is housed in a submersible launcher that is lowered from a ship into the sea. Once submerged, the vehicle travels under its own power, remaining attached to the launcher by an umbilical tether cable.

An operator at the control console topside maneuvers the RCV-150 using a joy stick and steering with the aid of sonar, video pictures, compass, depth gauges and other instruments.

Santa Fe Diving Services, a subsidiary of Santa Fe International Corp., Alhambra, Calif., serves all phases of the worldwide offshore oil industry.

LOOP Shakedown Smooth, Handles Seven Large Tankers Without A Hitch

The first U.S. deepwater oil port appears to be handling ULCCs and VLCCs without problems.

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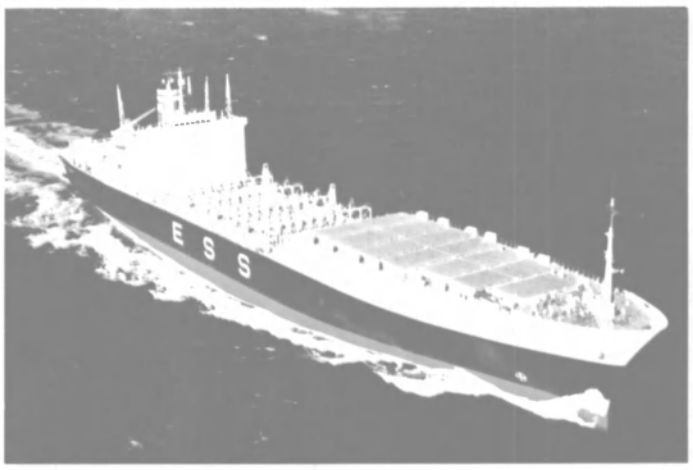

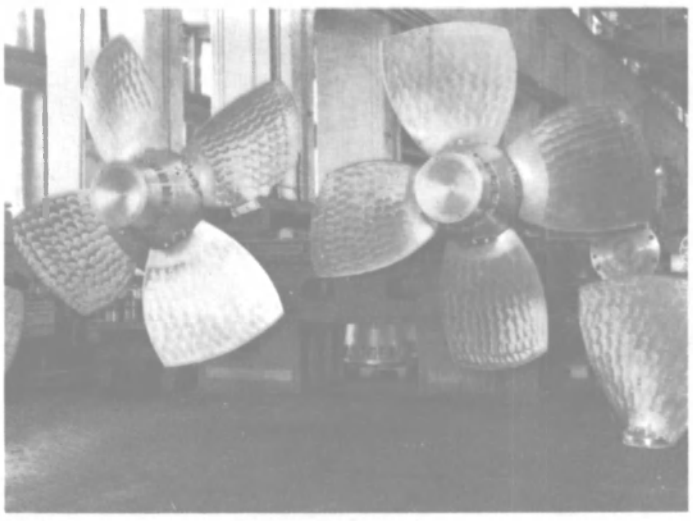

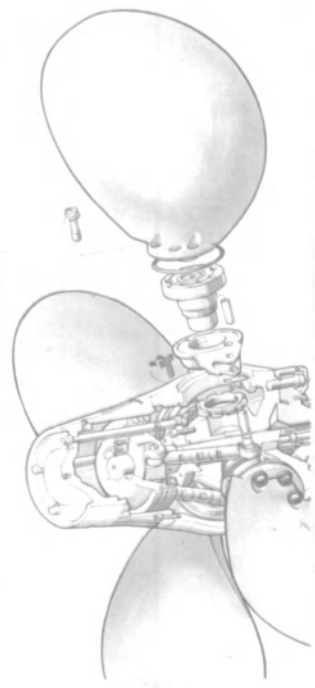

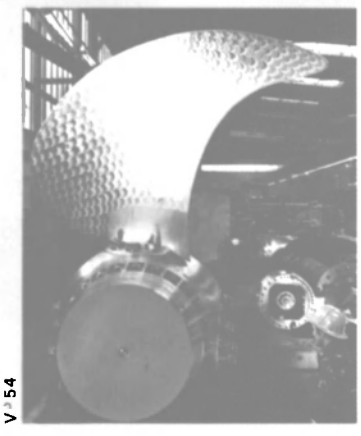

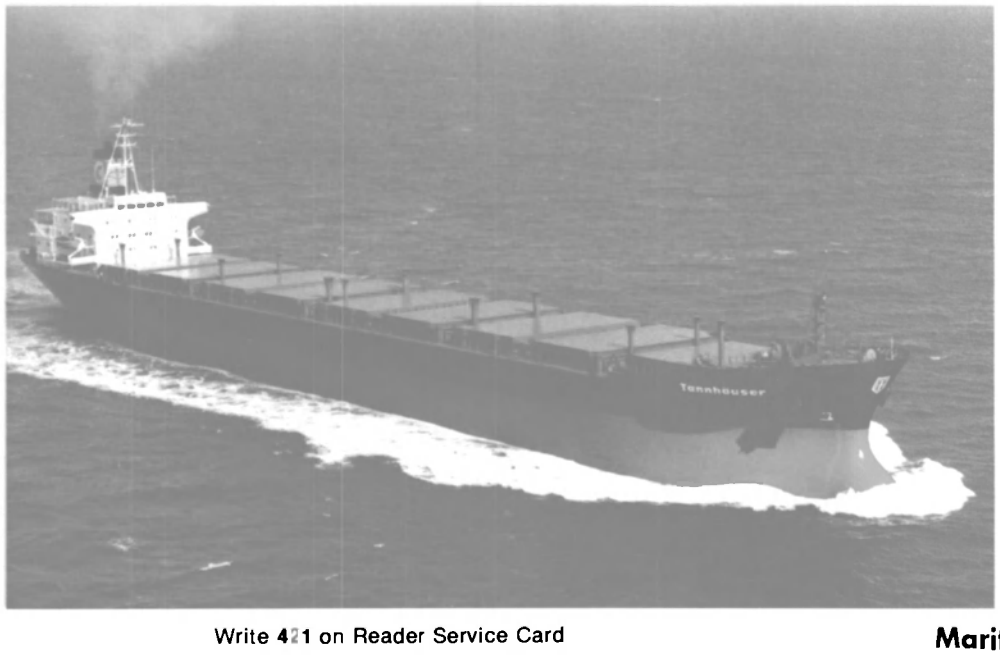

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The contract calls for a Hydranautics Pin Claw Base assembly that permits push/pull operation simply by turning the movable pins within the base. The system will have a total capacity of 700 short tons in the cantilever skidding mode and 250 short tons in the drill floor skidding mode.

The jackup, as yet unnamed, is designed to withstand winds of up to 109 knots and 50-foot seas, and will measure 200 feet by 186 feet by 23 feet. Equipped with three 414-foot leg sections, it will be capable of working in water up to 300 feet deep in the elevated position.

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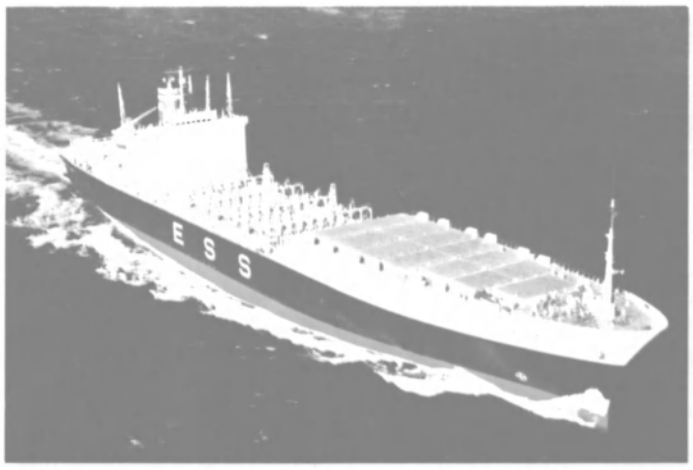

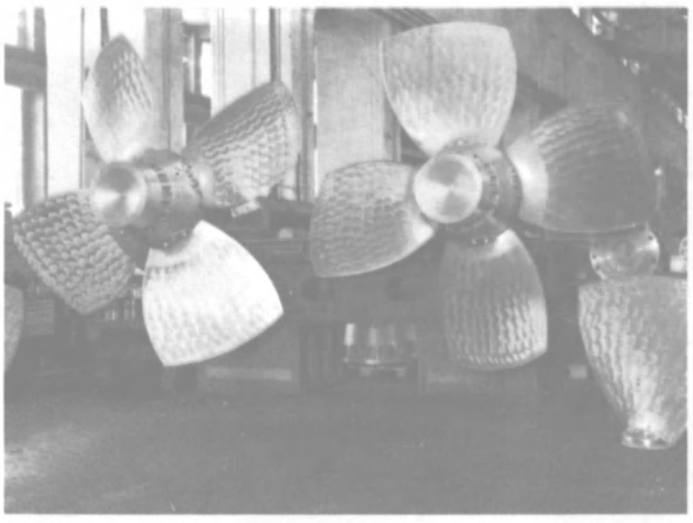

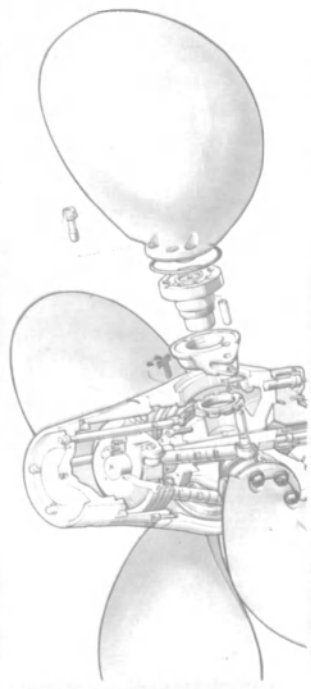

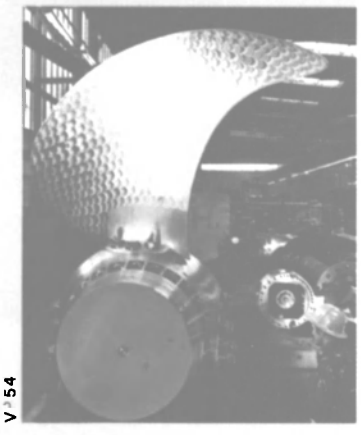

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$5.6-Million Navy Outfitting Contract Awarded NASSCO

National Steel and Shipbuilding Company, San Diego, Calif., has been awarded a $5,631,540 cost-plus-fixed-fee contract for industrial effort for the fitting out of the AD-43. The Naval Sea Systems Command is the contractor.

Lukens Steel Introduces New Safety Floor Plate —Literature Available

The Lukens Steel Co., Coatsville, Pa., has introduced a new industrial and safety floor plate, named Sure-Foot™. The company recently published a brochure containing information on the new product's sizes, applications, technical details, and advantages.

The brochure has been organized to meet the interests of purchasing managers and designers who are concerned with the selection of floor plate.

For a free copy of the brochure,
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SEMCO Elects Baker Executive Vice President

Southeastern Maritime Company (SEMCO), Savannah, Ga., recently announced the election of **Herbert N. Baker Jr.** to executive vice president and general manager. Mr. **Baker** will be responsible for SEMCO's agency, stevedoring, and terminal activities in Charleston, Savannah, Jacksonville, Miami, and Atlanta.

Mr. **Baker's** experience in the marine transportation field has included executive positions with International Paper Company, Prudential Lines, and Waterman Steamship Corp.

WATERCOM Files Application For Automated Waterway Communications System

Waterway Communications System, Inc. (WATERCOM), Arlington, Va., has filed an application with the Federal Communications Commission requesting authority to construct and operate an automated communications system serving the Mississippi, Illinois, and Ohio Rivers and the Gulf Intracoastal Waterway.

The filing was announced recently by **J. Robert Hard,** executive vice president of American Commercial Barge Line Company. The submission of this application follows the adoption of rules by the FCC on January 29 of 1981, allocating the 216-220 MHz band for use by automated maritime communications systems serving the inland waterways.

The application filed with the FCC proposes operation throughout the GIWW, Mississippi — including the Morgan City route and the Atchafalaya River, Illinois, and Ohio Rivers, with the exception of small regions at the northernmost portions of the Mississippi and Ohio Rivers.

In order to move forward as quickly as possible with licensing and construction of the WATERCOM System, those two segments of the rivers are not covered by this application due to the need to complete further engineering to comply with the technical restrictions imposed on the use of the 216-220 MHz frequency band by the FCC. These segments will be covered by an application to be filed in the near future.

Control and management of WATERCOM was transferred from the 16 members of the barge and towing industry who founded WATERCOM in 1974 to American Commercial Lines, Inc., the parent of American Commercial Barge Lines, in mid-June. ACL has undertaken responsibility for the construction and operation of the automated communications system, a project estimated to cost $12 million. "We are very excited about this project and the potential it has for allowing the industry to realize optimum use of management information and control systems in order to remain competitive during this era of high inflation and new costs," stated Mr. **Hard.**

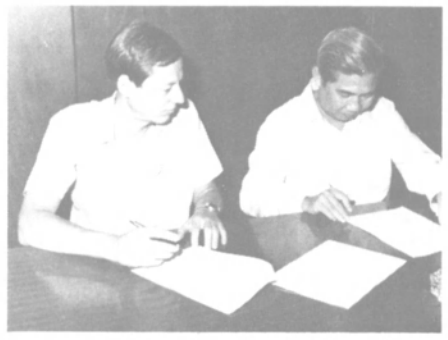
Far East-Levingston Upgrades Facilities

In line with the government's emphasis to upgrade the skill and technology level of local industries, Far East-Levingston Shipbuilding Limited (FELS) has taken a significant step forward to enhance its operations.

The company has acquired license from Shipping Research Services in Norway to operate the AUTOKON software system for ship design and production. This software will run on a PRIME computer that was recently installed in the shipyard. The investment of both the software and hardware system is over two million Singapore dollars. In addition, FELS has ordered a numerically controlled flame cutting machine from Messer Greisheim in Germany to automate its plate cutting processes. This machine will take the numerical outputs produced by the AUTOKON system.

The AUTOKON software is a computer-aided-design (CAD) and computer-aided-manufacturing (CAM) system that performs engineering designs, computerized drafting and generates information to facilitate numerically controlled plate cutting. The system is accessed via graphical terminals where the user builds up a product model in the computer data base from which engineering and production information can be generated. The system is completely integrated, so that there is always a consistency of information from the beginning of the design process where a ship's hull form is faired to the actual plate cutting in production. Its link to the numerically controlled flame cutting allows for the user to program information directly for the flame cutting machine. Twelve engineers and draftsmen have been sent to Norway for training in computing skills, and the company has applied to the Skills Development Fund for support.

With the introduction of this new technology, FELS hopes to break away from the traditional reliance on labor-intensiveness, and at the same time achieve better quality results and higher productivity. Man-hours for flame cutting as compared with the present manual methods will be reduced substantially. FELS will be the first shipyard in this region to employ CAD/CAM in production of oil rigs and ships.



O.J. Roven (left), the representative from Shipping Research Services, and Loh Wing Siew, managing director of FELS, signing the agreement to operate the AUTOKON software system.

Salesman Of The Year Award To Walter Kannapel

Walter Kannapel (left), manager, Marine Marketing, being presented with the "Salesman of the Year Award" by William Cole, director of National Marketing.

Walter Kannapel, manager of National Marine Marketing, Harris Corporation RF Communications Division, recently received the award for "Salesman of the Year" from the Rochester, N.Y.-based company. The award represents the highest percent of sales over quota during fiscal year 1981. Mr. **Kannapel** is responsible for development of the national marine market and management of the marine manufacturing organization.

Caswell Joins A. Johnson As Vice President For Acquisitions And Mergers

W. Cameron Caswell has joined A. Johnson & Co., Inc., New York, N.Y. as vice president-acquisitions and mergers, according to a recent announcement by **Robert M. Lynch**, president.

Mr. Caswell recently retired as vice president-acquisitions and mergers of Dover Corporation, New York, where he spent 14 years.

A. Johnson & Co., Inc. is a privately held company with annual sales of more than $850 million and facilities throughout the U.S. The company has fully integrated oil operations; manufactures specialty steels, marine propellers, hydraulic devices, and liquid/solids separation equipment; markets titanium and welding supplies; and is active in shipping.

New Compass For Tracor Satellite Navigators —Literature Available

Tracor Instruments and Micro Navigation Systems have worked together to interface the Petrel Model 100 Compass with the Tracor Transtar and Satellite Navigator II.

On the average, the Tracor Satellite Navigators with multipass discrimination receive a good satellite fix every 30-90 minutes, depending upon latitude and the number of operational satellites. Between fixes, the satellite navigator dead reckons on the basis of speed and heading inputs. Using the Petrel Model 100, the heading input is accomplished automatically, directly from compass to SatNav. Automatic heading input enhances the accuracy of the SatNav DR position.

For free literature on the Petrel Model 100 compass,

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Burrard Yarrows To Build $29-Million Supply Vessel For Use In Beaufort Sea

Burrard Yarrows Corporation, Vancouver, B.C., Canada, recently received a $29-million contract to build an icebreaking Class 3 offshore supply vessel for Dome Petroleum Limited of Calgary.

The vessel, to be built at Burrard Yarrows' Vancouver yard, is scheduled to operate in the Beaufort Sea for Canmar Drilling Limited, Dome's seagoing arm, upon delivery in June 1982. It will provide support services to drillships.

The 4,450-ton vessel has an overall length of 82.5 meters (about 270 feet); breadth over reamers of 19 meters (62 feet), depth of 7.5 meters (25 feet), and is driven by two 4,500-hp diesels with twin-screw controllable-pitch propellers. The four-blade propellers are built to a tensile strength of 70 kg/m². They develop 4,080 base horsepower metric at 180 rpm. The ship, designed by Arctic Offshore Design Limited of Vancouver, carries 12 crew and 14 passengers.

Hydranautics Provides Skidding Systems For Jackups Apollo III, IV

Hydranautics Hydraulic Systems, Goleta, Calif., completed shipment recently of the skidding systems contracted by Western Oceanic, Inc., Houston, Texas, for use on Apollo III and IV. The Friede & Goldman designed L780 cantilever, self-elevating offshore drilling units are being built by China Shipbuilding Corp., Taiwan. The jackups are under contract by Udeco for operation in Abu Dhabi.

The building contract called for two rig sets of cantilever and drill floor skidding systems. Each system consists of a pair of Gripper Jack assemblies, each with a total capacity of 700 short tons in the cantilever skidding mode and 250 short tons in the drill floor skidding mode.

According to Western Oceanic officials, the amount of fabricated steel required to construct each of the jackups is reduced by 12 tons using Hydranautics' systems.

◄ **Write 12[illegible] on Reader Service Card**

Intersmooth SPC

Self polishing copolymer A/F

Now a family with one to fit your operation and cut your costs

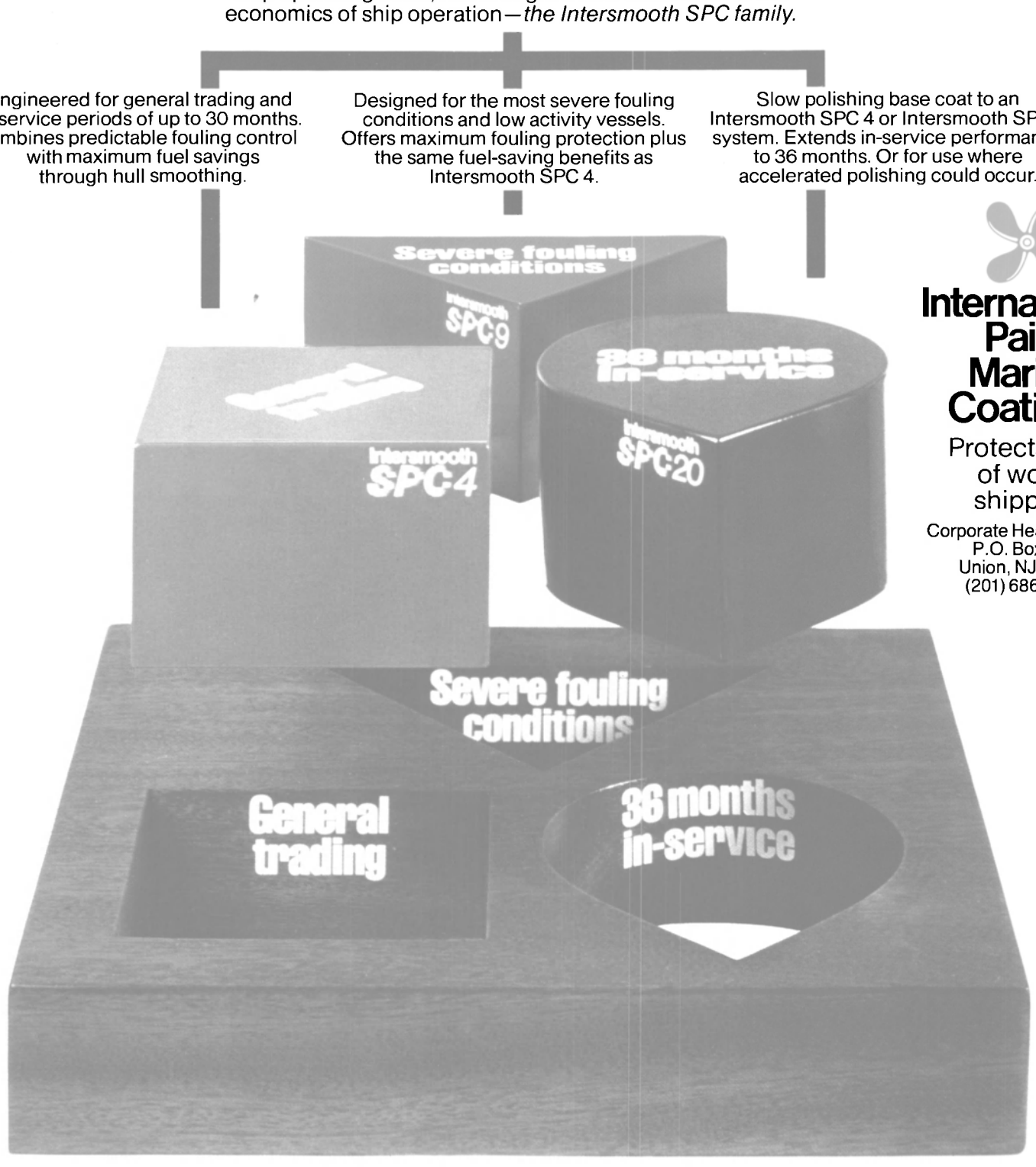
The monitored performance of antifoulings by International Dataplan has clearly shown that no single product can meet the needs of every ship operator.

International Paint's unique experience in marine biology, copolymer technology, hull roughness, ship performance and ship operating costs, has brought a new dimension to the economics of ship operation—*the Intersmooth SPC family.*

Engineered for general trading and in-service periods of up to 30 months. Combines predictable fouling control with maximum fuel savings through hull smoothing.

Designed for the most severe fouling conditions and low activity vessels. Offers maximum fouling protection plus the same fuel-saving benefits as Intersmooth SPC 4.

Slow polishing base coat to an Intersmooth SPC 4 or Intersmooth SPC 9 system. Extends in-service performance to 36 months. Or for use where accelerated polishing could occur.



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MarAd To Fund Installation Costs For Defense Radio Gear On Merchant Ships

The U.S. Maritime Administration (MarAd) will fund the installation costs for U.S.-flag merchant ships of defense communications systems compatible with the Navy's "highest capacity system" when funds are available.

MarAd recently proposed rules to cover the application and approval process for this equipment, which includes a high-frequency transmitter, high-frequency receiver, radioteletype system with automatic error correction, maritime digital selective calling system, and a Marisat terminal.

The equipment is considered a national defense feature, and the owners will be encouraged to use it. Maintenance of the system will be charged to the owner's account. A change in law last year allows such retrofitting.

Any owner of a U.S.-flag ship in excess of 1,000 gt may apply for reimbursement for the purchase and installation of the equipment. Estimated cost of the communication equipment was put at perhaps $120,000 per vessel. Installation was believed to take up to two weeks, depending on existing wiring.

There are some 530 privately-owned U.S.-flag ships large enough to be affected by this proposal.

The order of priority consideration is:

U.S.-built, U.S.-flag

1. barge carriers
2. product tankers
3. self-sustaining dry cargo ships
4. ro/ro's
5. containerships
6. dry bulk cargo ships

U.S.-flag

7. barge carriers
8. product tankers
9. self-sustaining dry bulk cargo ships
10. ro/ro's
11. containerships
12. dry bulk cargo ships

Design Semisubmersible For Use In Arctic Ice Conditions

A new design for an ice-strengthened semisubmersible mobile offshore drilling unit has been developed by MACS of Aberdeen, Scotland. The unit has received warm interest, according to **John McLean**, head of MACS's design department.

Mr. **McLean** reported recently that four major oil companies and two drilling contractors had expressed interest for possible use on the Canadian east coast and other Arctic locations where offshore drilling is limited to the ice-free season.

The design, dubbed the "Ice Maiden," calls for a 40,300-ton unit capable of drilling in 1,600 feet of water on anchors and up to 6,000 with the use of dynamic positioning.

A model of the rig is currently undergoing ice tests in Wartsila's laboratory, Finland, and has received initial design approval from Det norske Veritas.

"The vessel will extend the drilling season and will be the first to be able to go into and out of ice under its own power and in safety," said Mr. **McLean**.

Literature Available On Full Line Of Kohlenberg Products

Kahlenberg Bros. Co., Two Rivers, Wis., has published several brochures describing a wide range of marine products manufactured by the 86-year-old company. Each brochure contains a description of the product line, as well as photographs, specifications, dimensions, and accessories available.

The brochures describe over 25 models of Kahlenberg airhorns, a full line of marine propellers including constant pitch, adjustable pitch and custom, piston horns, muff couplings and air/steam whistles.

For free copies of the Kahlenberg literature,

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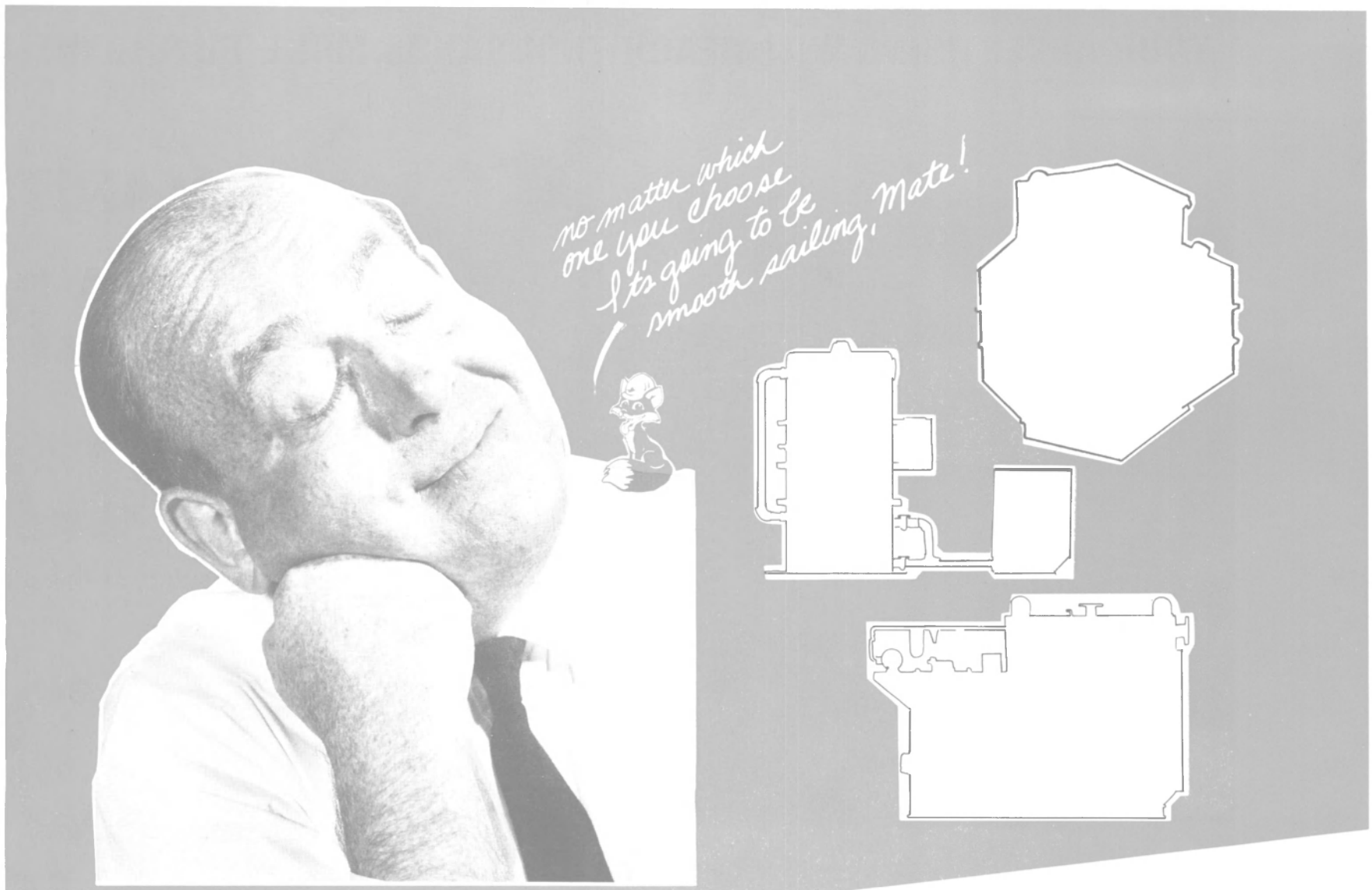
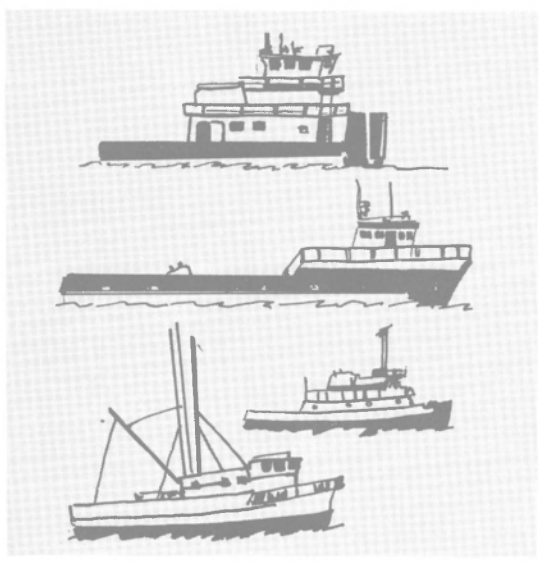


Red Fox Marine Sanitation Devices... small, inexpensive, simple to operate and trouble free.



The Standard MSD as well as the Little Fox and the Fox Pac have all the features you desire as a marine operator. A simple, complete system for every crew size certified and labeled to meet all U.S. and international regulations.

EXPERIENCE: *Over 50 years of service to the oil industry.*
SERVICE: *24 hours a day, 365 days a year, worldwide*
DEPENDABILITY: *Over 2,000 units in service worldwide*
ACCEPTABILITY: *56% of Red Fox owners operate over 10 units.*
RELIABILITY: *Red Fox units work. When service is necessary we're with you with spare parts and know how.*

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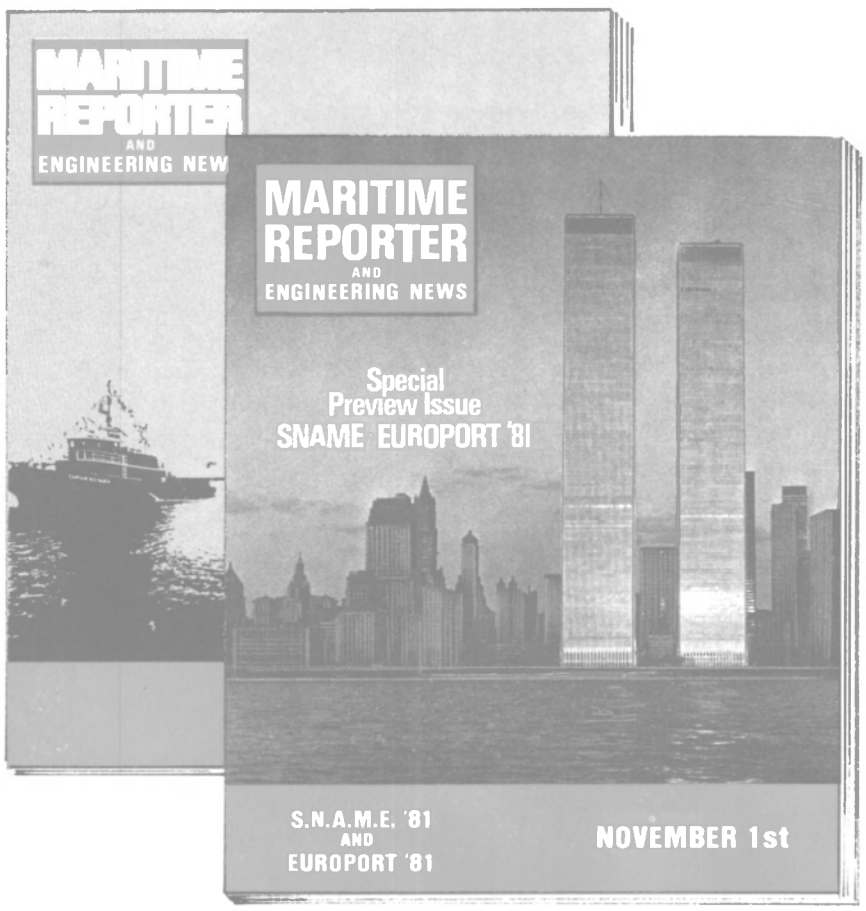

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BEST READ BECAUSE EVERY ISSUE IS CURRENT

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*THESE ARE THE MARINE/OFFSHORE BUYERS

MARITIME REPORTER is requested...in writing... personally...by thousands more readers with the titles listed below than any other marine magazine in the entire world. Circulation statements prove it.

SHIPBUILDING, BOATBUILDING, DRILL RIG BUILDING & REPAIR COMPANIES:

(Commercial, U.S. Navy and U.S. Coast Guard) Companies, directors, owners, presidents, vice presidents, secretaries, treasurers, superintendents, managers and purchasing agents, naval architects, engineers and chief draftsmen

VESSEL OPERATING COMPANIES, OCEAN, INLAND, HARBORS, OFFSHORE OIL DRILLING, PORT AUTHORITIES: (Includes oil companies involved in offsnore drilling, offshore drilling contractors and crew/supply boat companies).

(Owners, Agencies and brokers) Companies, directors, owners, agents, presidents, vice-presidents, managers, secretaries and treasurers, port engineers, superintendents, purchasing agents, port captains, port stewards, naval architects and engineers shoreside

PROFESSIONAL MEN:

Naval architects, engineers and consultants shoreside

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R 1st 1981

This November 1st issue of MARITIME REPORTER is bound to generate maximum reader interest among MARITIME REPORTER's unequalled audience of over 20,000 of the world's leading marine/offshore decision makers.

Both SNAME and EUROPORT '81, two of the most important annual marine events in the world, will be featured in two big preview feature articles in this November 1st special. The complete programs for both these meetings, plus a list of exhibitors at Europort, will be presented in detail to MARITIME REPORTER's entire readership before the conferences take place...plus...this issue will receive extra distribution at both meetings.

November 1st is traditionally one of MR's largest and most successful issues. It provides all marine advertisers with an unequalled opportunity to deliver their sales message to the world's largest audience of marine management readers...both in their offices... and at both of these major marine industry conferences.

INTEREST THIS NOVEMBER 1st SPECIAL ISSUE WILL GENERATE.

ADVERTISING COPY CLOSING DATE FOR THE NOVEMBER 1st ISSUE IS OCTOBER 12th.

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- **LARGEST US** circulation to buyers
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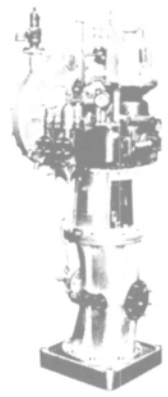
EX-U.S.-NAVY PUMPS

NEW — IN CRATES

UNUSED TURBINE DRIVEN CIRCULATING & BILGE SERVICE PUMP

EX-U.S.N. DE 51 CLASS

Warren 6000 GPM — 11.5 lbs — Drawing BS5-1622 — size 14 — V.P. axial flow 375 PSI total head. 1600/1225 RPM — 56.5/42.5 HP. NSN-4320-00-360-1905



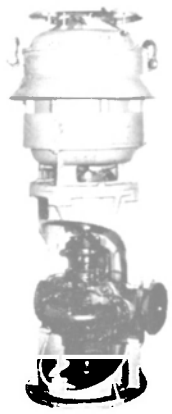
UNUSED DE LAVAL FUEL OIL BOOSTER

Ex DD 692 & 445 Class fuel oil booster pumps — mfg by De Laval. 100 GPM @ 100 PSI — suction lift 20" Hg. 11 HP steam turbine 6355/5503 RPM — pump RPM 410 — 590 PSI/15 lbs back pressure.

MAIN CONDENSATE PUMPS U.S.N. DD445 & 692 CLASS

(1) Worthington pump — 325 GPM @ 1150 RPM — 162 ft. radial flow operating position — 2-Stage single suction — CW rotation. De Laval Turbine — 24.2 HP — 590 PSI — 5367 RPM. NSN 4320-00-267-4467.

(1) Buffalo pump — 335 GPM — 162 ft head — size 4½" — 21.2 HP — 1150 RPM — Inlet 9" — outlet 5" — 2-stage impellers 14¼"/13¾". Turbine: Terry — YW-1 — 22.7 HP. Gear: 5360/1150 RPM — 590 PSIG NSN 4320-00-267-4275.

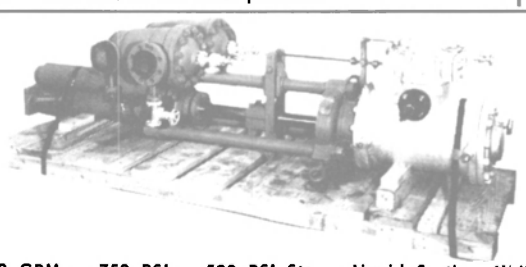


250 GPM — 150 LBS WARREN CENTRIFUGAL FIRE & BILGE EDUCTOR PUMP

NEW UNUSED

EX-U.S.N.

All Naval bronze. 36.5 BHP—3500 RPM—3" discharge—4" suction. Test pressure 300 lbs. Discharge pressure 150 lbs. Electro Dynamics—Frame FRAC-405—type XNX — #90398 — 45 HP — 3500 RPM 57/5 amps — 45° rise — 440/3/60.



RECONDITIONED U.S. NAVY SURPLUS

11X8X18 WARREN EMERGENCY BOILER FEED PUMP

With Bronze Liquid End

180 GPM — 750 PSI — 590 PSI Steam Liquid Suction 4½" — discharge 3½". Maximum steam pressure 624 lbs. — test pressure 1000 lbs. Water pressure 750 lbs. — water test pressure 1250 lbs.

UNUSED VERTICAL BRONZE PROPELLER-TYPE

MAIN CIRCULATING & BILGE PUMPS

DD445 & 692 CLASS

Manufactured by Westinghouse — Warren 25" Vertical Propeller Pump

TURBINE: Type 20VRG-B — 300 HP — 4150 RPM — 575 lbs. — superheat 0° — exhaust pressure 15 lbs. Turbine overspeed 5187 RPM (25%) with reduction gear. PUMP: Warren propeller elbow type — drawing BS6-1618 — Circulator Service 26,500 GPM @ 840 RPM at 13.5 lbs. total head. Bilge Service — 6625 GPM @ 11.5 lbs. — bilge — 144.5 HP — suction lift 13.65" Hg.

UNUSED PROPELLER ELBOW TYPE TURBINE DRIVEN

30,000 GPM WARREN-WESTINGHOUSE CIRCULATING PUMPS

30,000 GPM @ RPM circulating service. Bilge service 7500 GPM @ 460 RPM. Westinghouse drawing 25J119 — serial 5A-1165-4. STEAM TURBINE: 337 HP — 575 lbs. @ 5250 RPM. Weight of unit 10,000 lbs. NSN 4320-00-368-3178

100 GPM U.S.N. DD 692 & 445 CLASS DE LAVAL IMO

TURBINE DRIVEN FUEL OIL BOOSTER PUMP

100 GPM 100 PSI. De Laval turbine 575 PSI — 15 lbs back pressure.

TWO 1,(

VOITH-S(

CYCLOIDAL CO(

OMNI-DIRECTIO(

Can Be Located Side

Fast and Precise Moven

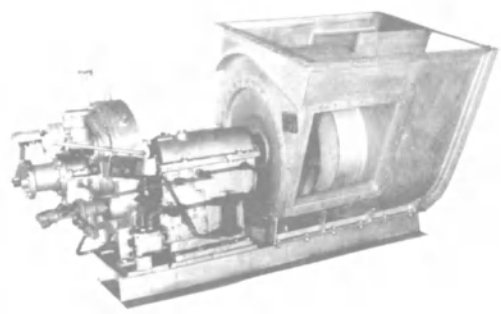
On Axis Turns Make Them Ide

Serial Nos. NR-1783 and NR-1784. Unit size 24/E150. 6 Stain blade orbit diameter. Present drive with Voith AD40 reducti 1775 RPM — squirrel cage — 884 amps — frame 23153. Mfg. E controls. Size 8 — Control volts 120 A.C. — line volts 450 — HYDRAULIC COUPLING ARRANGEMENT. UNIT BUILT 1970. CON

UNUSED EX-U.S. NAVY

HORIZONTAL FORCED DRAFT BLOWERS

D.E. 51 CLASS — Mfg. by Westinghouse



21,600/16000 CFM — size 24 — design 3N. Equipped with Sturtevant turbine 6880/5260 RPM — 162 HP — type B-26-6. Working pressure 540 PSI. Typical serial 453L55 — with Sturtevant reduction gear B-26-G — Pinion RPM 5260 — gear 2360 RPM. NSN4141-00-255-9036. Weight 8000 lbs each. Can furnish CW or CCW rotation.

KNOWN 'ROUND THE WORLD

THE BOSTO(

313 E. BALTIMO(

Main Office: (301)

CABLE: BOSIRON—BALTIMO(

00 H. P.

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ITRA-ROTATING
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By-Side Fore and Aft
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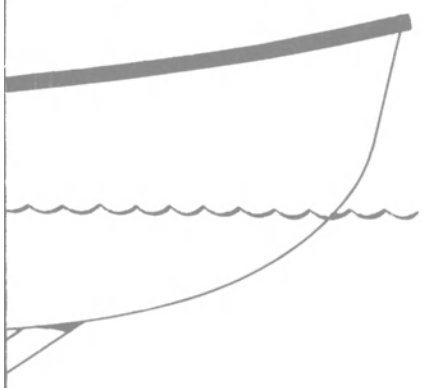
l for Tugs, Ferries, Cranes, Etc.



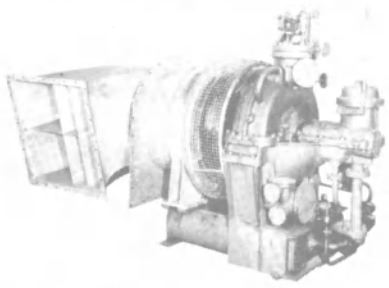
s steel blades each unit — 1500mm blade length — 2400mm gears and heavy duty motor 800/1000 HP — 440/3/60 — Electric Machinery Co. Complete with "Cage Controls" & motor ps 941/3/60 or DRIVE DIRECTLY WITH DIESEL ENGINE AND LETE WITH HYDRAULIC SERVO MOTORS FOR BRIDGE CONTROL.

UNUSED EX-U.S. NAVY

FORCED DRAFT FANS

Mfg. by Westinghouse

EX DD445 & 692 CLASS



Size 25 — Type 251NH-35 — 227 H.P. Westinghouse drawing 20J914. NSN-4140-00-267-1119.

- 25,500 CFM — 35" Static Pressure — 6200 RPM
- 24,600 CFM — 39" Static Pressure — 6350 RPM
- 19,300 CFM — 25.5" Static Pressure — 5075 RPM

Turbine driven — 575 lbs. — 0° Superheat — 15 lbs. back pressure. Propeller: 9 Blades — 25" Diameter. Will operate successfully at 460 lbs. with 20 lb. back pressure.

CAN BE ADAPTED FOR MERCHANT VESSEL APPLICATION, C-4 MISSION, ETC. Weight about 5100 lbs. — Right & left hand units available.

ON METALS CO.

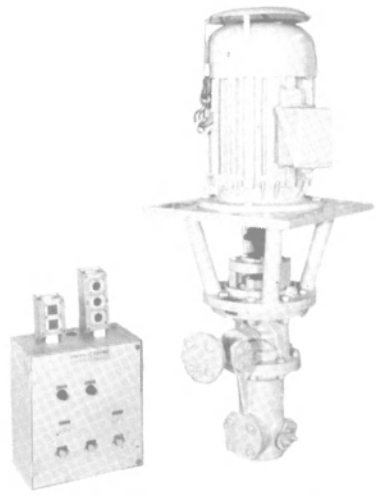
E ST. • BALTIMORE, MD. 21202

39-1900 Marine Dept.: (301) 752-1077

E, MD. U.S.A. TWX 710-234-1637

DELAVAL IMO

FUEL OIL SERVICE PUMP



PUMP: Mfg by DeLaval. 24 GPM — 350 PSIG discharge pressure — 1750 RPM — 12.9 BHP. MOTOR: 15/10 HP — mfg by Electro Dynamics — synchronous speed 1800/1200 RPM — 220/440 volts 3-phase 60-cycle. COUPLING: Folk — type T — size 40T10. CONTROLLER: Magnetic —by G.E.—Motor rating: 15/10 HP—220/3/60.

NEW – UNUSED

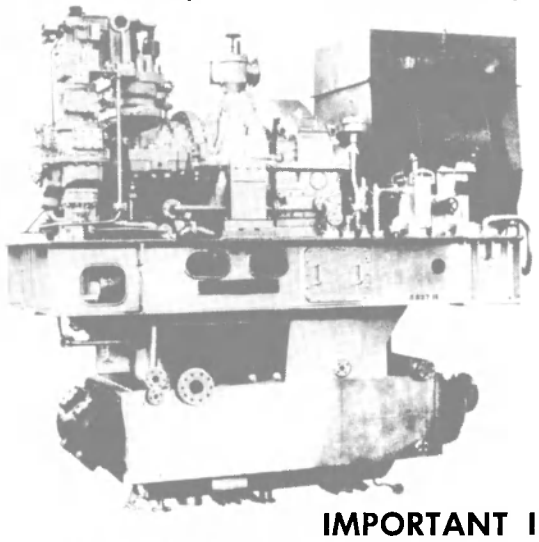
FUEL OIL SERVICE PUMP

Vertical pump and motor with brackets. 24 GPM at 350 lbs — test pressure 700 lbs. MOTOR: 5 HP — complete with controls. 220/440/3/60

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

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

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



YOU CAN SAVE THOUSANDS OF DOLLARS

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

IMPORTANT INFORMATION

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

18,333 ways to increase

COMPARE... ONLY MR GIVES YOUR ADVERTISING THE SALES BUILDING

Sales managers agree...management, engineering and purchasing personnel...shoreside...in vessel operations, shipbuilding and naval architecture have the authority to specify and buy all types of marine products, equipment and services. These are the buying power readers. Men aboard ship, shipyard laborers, manufacturers, students, advertisers, attorneys, etc., do not specify or buy...these are non-buying readers.

MARINE ENGINEERING/LOG
TOTAL WORLD WIDE BUYING POWER
(Non-buyers Removed)

	BUYING POWER READERS	
SHIPBUILDING, BOATBUILDING, DRILL RIG BUILDING & REPAIR COMPANIES:		
Companies, Presidents, Vice-Presidents, Secretaries, Treasurers, General Managers, Purchasing Agents, Works Managers, Superintendents, Naval Architects, Marine Engineers & Chief Draftsmen	4,414	DOWN 23% LESS THAN '78 ↓
VESSEL OPERATING COMPANIES, OCEAN INLAND/OFFSHORE, PORT AUTHORITIES, OWNERS, AGENTS & BROKERS:		
Companies, Presidents, Vice-Presidents, Secretaries, Treasurers, General Managers, Purchasing Agents, Passenger & Freight Agents, Marine Superintendents, Port Captains, Port Engineers, Port Stewards	5,708	DOWN 46% LESS THAN '78 ↓
PROFESSIONAL MEN:		
Naval Architects & Marine Engineers	4,624	

BUYING POWER TOTAL 14,746
DOWN 21% LESS THAN '78 ↓

FREE COPIES TO DIRECTORY NAMES—
No. 2 mails thousands of free copies, every issue, to names taken from directories of people who have not requested the magazine.

TOTAL BUYERS

ME/L 5,105 SUBSCRIPTIONS	
	9,641 FREE COPIES
	TOTAL 14, 746

FOR MORE MARINE SALES IN '82 ...ADVERTISE

ME/Log...65% BUYERS

BUYERS	14,746
NON-BUYERS	7,918
TOTAL CIRCULATION	22,664

Source MR— June 1981 circulation statement
ME/L — December 1980 circulation statement

marine sales

POWER OF THE WORLD'S LARGEST CIRCULATION TO BUYERS.

This comparison shows the total circulation of both magazines to all shoreside buyers reached throughout the entire world...in all market areas...deep draft, inland waterways, coastal and offshore oil drilling. Copies to non-buyers, have been removed. You be the judge...which magazine is most wanted...requested by thousands more marine men who have the authority to give business to you.

TOTAL BUYERS

MR

18,333

100% REQUESTED IN WRITING BY INDIVIDUAL READERS

TOTAL 18, 333

MARITIME REPORTER/ Engineering News

WORLD WIDE BUYING POWER TOTAL

(Non-buyers Removed)

BUYING POWER READERS

SHIPBUILDING, BOATBUILDING, DRILL RIG BUILDING & REPAIR COMPANIES:

(Commercial, U.S. Navy and U.S. Coast Guard): Companies, directors, owners, presidents, vice presidents, secretaries, treasurers, superintendents, managers and purchasing agents, naval architects, engineers and chief draftsman **5,595**

VESSEL OPERATING COMPANIES, OCEAN, INLAND, HARBORS, OFFSHORE OIL DRILLING, PORT AUTHORITIES: (Includes oil companies involved in offshore drilling, offshore drilling contractors and crew/supply boat companies).

(Owners, Agencies and brokers) Companies, directors, owners, agents, presidents, vice-presidents, managers, secretaries and treasurers, port engineers, superintendents, purchasing agents, port captains, port stewards, naval architects and engineers shoreside **10,034**

PROFESSIONAL MEN:

Naval architects, engineers and consultants shoreside **2,704**

BUYING POWER TOTAL 18,333

WORLD'S MOST WANTED MARINE MAGAZINE
100% REQUESTED...IN WRITING

The quality of Maritime Reporter's circulation is unequalled, 100% currently requested, personally, in writing, by each individual reader.

TO THOUSANDS MORE BUYERS IN MR/EN

MARITIME REPORTER AND ENGINEERING NEWS

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MR...89% BUYERS

BUYERS	18,333
NON-BUYERS	2,240
TOTAL CIRCULATION	20,573

Jeffboat Launches First Of Two 250-Foot Tank Barges For Boston Fuel

The first of two outsized fuel tank barges (shown above) slid down the Jeffboat, Inc. launchways at Jeffersonville, Ind., recently. There, it is receiving final outfitting before traveling to the East Coast to join the fleet of Boston Fuel Transportation, Inc.

The tank barge is one of two identical vessels being constructed by Jeffboat for Boston Fuel. Under construction since early May, the tanker is a mammoth, single-skin, oceangoing barge which can transport some 36,000 barrels of fuel.

Its sister barge will be launched in mid-October. Both barges are 18 feet high, 60 feet wide, and 260 feet long, and contain living quarters for a two-to-four crew.

Another larger tank barge is taking shape further down the tanker construction line. Scheduled for completion early in 1982, the vessel is being built for another East Coast firm, Reinauer Transportation Company. This tanker will be 22 feet deep, 60 feet wide, and 325 feet long, and will increase Reinauer's fuel-carrying capacity by 60,000 barrels.

Fifty-Year-Old Tug Is Restored For Service

A venerable 50-year-old wood-hulled tug (shown above) has been restored to her fitness of yore and is back in service in Lake Union, Seattle, Wash.

According to **Mark Freeman** of the Fremont Tugboat Company, Inc., the 42-foot-long "A-1" was renamed "Sovereign," following repairs and refitting carried out by Peterson Boatyard, Tacoma, and by Fremont.

The Sovereign's D-13000 Caterpillar diesel 115-hp engine was rebuilt, the vessel was rewired, a new tailshaft and a new 42-inch by 27-inch propeller were installed. Only four planks, two forward and two aft, of the Port Orford cedar hull had to be replaced. The red cedar pilothouse needed some cosmetic repairs.

The tug has two Ray 50 VHF radios, a Binimi VHF radio, a 600-foot Raytheon depth sounder, and a Furuno radar. There is a double berth forward, a single berth in the pilothouse and a nice, roomy house with an oil range. Mr. **Freeman** took her on a 15-day

trial trip into Canadian waters and reported that everything "was just fine."

She was built in 1930 at Everett Marine Ways for Monroe Logging as the "A-1," and was used on the Snohomish River. Later she was sold to the Scott Paper Company for use in the Similk Bay boom grounds. Then she was sold to **Chuck Hanson,** who used her in his pile-driving business for about 10 years at Anacortes. Fremont Tugboat purchased her in 1980 and began her reconstruction.

Gibbs & Cox Relocates Washington, D.C. Office

Gibbs & Cox, Inc., New York, N.Y., announced recently the move of their Washington Division to new offices at 1235 Jefferson Davis Highway, Crystal City, Arlington, Va. The Gibbs & Cox Washington Division has been providing naval architectural services to the Naval Sea Systems Command for the past 10 years. The Division has also served as the naval architectural support contractor for the Ocean Thermal Energy Conversion (OTEC) Project for the Department of Energy for the last three years. The telephone number at the new office remains unchanged.

Holland America To Sell Statendam For $19 Million

Holland America Cruises, N.V., Curacao, has announced it has entered into an agreement to sell the T.S.S. Statendam to a group of investors, with delivery in late 1982. The purchase price was in excess of U.S. $19 million. Paquet Cruises, Inc., New York, will assume marketing and sales management for the purchasers. All Statendam cruise programs will be operated by Holland America Cruises as scheduled until November 1982.

The recent sale of the Statendam coincides with the anticipated delivery of the M/V Nieuw Amsterdam in early 1983 as part of Holland America Cruises' fleet modernization program. The M/V Noordam, the sister ship to the Nieuw Amsterdam, is scheduled for delivery in January of 1984.

Japan To Spend One Billion Dollars To Upgrade Shipyards

The seven largest shipbuilders in Japan have earmarked more than $1 billion (U.S.) for investment in plant and equipment this year, 18.3 percent higher than the investment total a year ago. The higher investment is taken as a sign that Japanese shipbuilders are recovering from the recession, according to Tokyo-based Kaiji Press.

The seven major shipbuilders are Mitsubishi Heavy Industries, Ishikawajima-Harima Heavy Industries, Mitsui Engineering and Shipbuilding, Hitachi Shipbuilding and Engineering, Sumitomo Heavy Industries, Kawasaki Heavy Industries, and Nippon Kokan Kaisha. Mitsubishi alone is spending almost $200 million on its Yokohama Shipyard.

Another shipbuilder, Mitsui, has a $30-million project to build a factory in Oita, Kyushu, and Hitachi has a $21-million project to modernize ship repair facilities at Kanagawa Shipyard. Investment is also taking place in research facilities.

According to Lloyd's Register of Shipping, Japan leads the world shipbuilding nations. At the end of June, there was 5.6 million tons gross under construction in Japan, 776,000 tons more than at the same time last year.

Another 9 million tons was ordered but not yet under construction—600,000 tons more than last year. In all, the orderbook of 14.6 million tons was 1.3 million tons more than at the end of June 1980.

The completion figure for Japanese yards in the first six months of this year was the largest since 1978. And the trend continues upward. Over 70 percent of the Japanese production is for export.

City Of Valdez, Alaska Awards Contract For Container Terminal

The City of Valdez, Alaska, recently awarded a contract for the construction of a container terminal facility that includes what is believed to be the world's first floating container dock, according to **Mark Lewis**, city manager. The contract was awarded recently to a joint venture of Morrison-Knudsen Co., Boise, Idaho, and Manson Construction and Engineering Co., Seattle, Wash. Full service is anticipated by fall of 1982.

The facility will include an offshore 21-acre marshaling yard that will connect to shore by a 1,500-foot-long pile-supported trestle. The marshaling yard-to-dock connection calls for two 200-foot orthotropic steel box girder bridges capable of handling two lanes of truck traffic as container ships and barges are unloaded.

The floating container dock, to be anchored by eight 600,000-pound concrete blocks, will require that the bridges be designed for a 22-foot tidal variation.

The prestressed concrete dock, measuring 700 feet long by 100 feet wide by 30 feet deep, will be fabricated in two sections by Concrete Technology at its Blair Waterway plant in Tacoma, Wash. It will employ a combination of precast and cast-in-place construction. The multi-celled sections will be post-tensioned throughout.

Fabrication of the floating units will begin this fall with completion set for spring 1982. The two units will be towed from Tacoma to Valdez where the general contractor, MK-Manson, will post-tension the separate units into a single continuous dock.

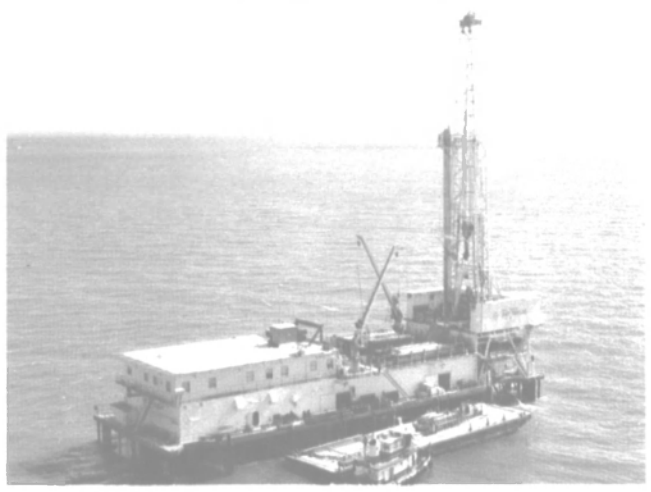
The steel bridges linking the marshaling yard and dock are to be fabricated by Conron Corporation at its Star Iron and Steel Division in Tacoma. The bridges also will be towed to Valdez for integration into the floating dock facility.

Design of the floating dock, bridges, and marshaling yard support facilities was awarded to ABAM Engineers, Inc., Federal Way, Washington.

At work offshore for Petrobras is the Rincao, 185' by 38' with a 16' depth. This tug/supply vessel is one of five built for Brazil.

At work offshore for NASA is the UTC Freedom, 176' by 37'. Designed to recover the space shuttle's rocket booster, this vessel and her sister ship, the UTC Liberty, can also accommodate a variety of scientific and technical missions.

At work for the University of Miami is the coastal zone research vessel Cape Florida. The 135' vessel will work a wide variety of research projects for the University.



At work for the Louisiana based Circle Bar Drilling Company is the posted drill barge Pat Taylor. It is rated to work drilling depths of up to 30,000 feet.

Penang Yard Plans Ship Repair Service

The Penang Shipbuilding Corp., Kuala Lumpur, Malaysia, is to start in the ship repair business to take advantage of the buoyant ship repair market. It has acquired a floating dock to facilitate its venture into this field.

Auxiliary equipment for blasting, scraping, hull cleaning, painting, tank testing and hull, engineering, electrical, and electronic repairs has also been acquired.

The Penang staff is currently being trained in ship repairs in New Zealand.

Unified Navigation Rules Published For U.S. Waterways

Mariners who want to prepare for the significant changes resulting from the unification of inland waterway, western rivers, and Great Lakes "Rules of the Road" will be interested in a new publication from Houston Marine Consultants, Inc.

The "Unified Rules Study Guide and Ready Reference," by **Gregory Szczurek**, combines more than 50 illustrations with a "plain English" translation of the new requirements. Chosen as a textbook by the U.S. Naval Academy, the 165-page publication also includes flashcards and review quizzes for self-study.

Because the book contains the complete text of the Navigational Rules Act, it can be carried on vessels to comply with the requirement that all vessels over a specified length have a copy of the Rules onboard. The Coast Guard proposes that all vessels over 12 meters long, approximately 39 feet, carry a copy of the Rules.

The retail price of the book is $10, plus $1 for mail orders. Multiple copy discounts are available. Contact Houston Marine Consultants, Inc., 1600 20th Street, Kenner, La. 70062.

WELCOME TODD SHIPYARDS
TO THE
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Todd Pacific Shipyards Corp., Los Angeles division, has just become the newest member of the Syncrolift family . . . . now 148 installations in 58 countries. When completed, the Todd Syncrolift will be the largest shiplift in the world . . . 655 feet long, 106 feet wide, with a lifting capacity for vessels up to 48,000 DWT. An adjacent transfer system will enable the yard to service five maximum size ships ashore at one time.

Center photo at right shows 43,600 DWT vessel on Syncrolift at Tandanor S.A. yard in Buenos Aires. Lifting platform dimensions, 606' long x 105' wide.

Photo at lower right shows 16 vessels in workberths ashore at Astilleros Canarios, S.A., Las Palmas, Canary Islands.

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New Dredging Unit Being Built For Use On Tenn-Tom

DredgeMasters International, Inc., Hendersonville, Tenn., a subsidiary of Valley Industries, has signed a contract for the manufacture of a 24-inch DuraMaster portable dredge. The heavy-duty machine, which will be the largest factory-built portable dredge in the U.S., is a part of a $3-million-plus package purchased by Phillips and Jordan Construction Company, Knoxville, Tenn.

The first major project for the dredge will be a four and one-half mile section of the Tennessee-Tombigbee Waterway near Aberdine, Miss. It will involve excavating and moving approximately 8.5-million cubic yards of material on the historic waterway.

The new dredge will feature a 3,600-hp EMD, 20-cylinder engine, with Cummins diesel auxiliary power and ac generating systems. The main pump will be a DMI HydraMaster model HDM-80-28x24, with a 28-inch suction and a 24-inch discharge. It will be fitted with a 70-foot ladder section, capable of digging to depths of 50 feet. It will have a 900-hp cutter and be capable of producing in excess of 1,000 cubic yards of material per operating hour. Delivery is scheduled for November 1981.

CAT Offers 20-Page Guidebook For Diesel Engine Selection

A thoughtfully organized and easy to follow 20-page "Guidebook For Propulsion and Auxiliary Power Selection" has been published recently by Caterpillar Marine Systems of Caterpillar Tractor Co., Peoria, Ill.

The guidebook contains complete information on all of Caterpillar Marine's engines, transmissions and generators. The guidebook includes a selection chart for the engines to assist the reader in the choice of engine for different applications.

Photographs, specifications, drawings, and rating and fuel consumption charts are included for each of 11 CAT marine propulsion models. Similar charts are included for the transmissions and the marine generator sets. There is also a chart of approved CAT auxiliary engine ratings as specified by eight of the world's leading classification societies.

For a free copy of the CAT guidebook,

Write 12 on Reader Service Card

Stith Named VP For Administration At ACBL

Robert H. Stith Jr. has been named vice president of administration for American Commercial Barge Line Company (ACBL), Jeffersonville, Ind., a unit in the Inland Waterways Division of Texas Gas Transmission Corporation, according to an announcement by **H.J. Bobzien Jr.,** division president.

In his position as vice president, Mr. **Stith** will have responsibility for claims, insurance, personnel, employee benefits, training, safety, and other administrative functions.

Mr. **Stith** joined ACBL in 1965 as claims manager. He later held the positions of director of risk management and director of training and safety. In 1980, he was named assistant vice president and director of administrative services.

Brown & Root Announces Two Officer Changes

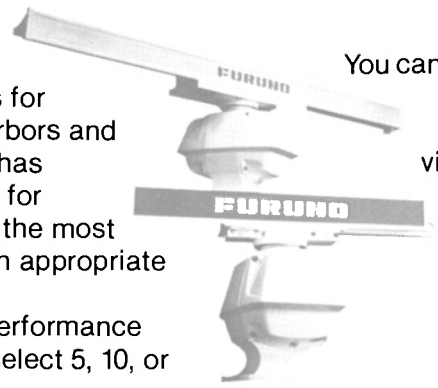
Brown & Root, Inc., Houston, Texas, recently announced two officer changes within its corporate development and subsidiaries management divisions.

M. Rod Martin, formerly president of Brown & Root Development, Inc. (BARDI) will become vice president, marine business development, responsible for offshore sales efforts worldwide. He succeeds the late **Frank A. Akin.**

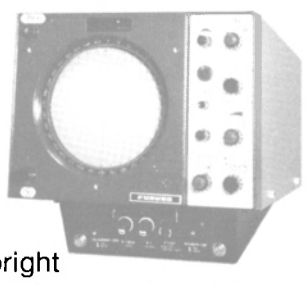
The new president of BARDI will be **Elmer H. Bomke,** former vice president of engineering in the company's power group.

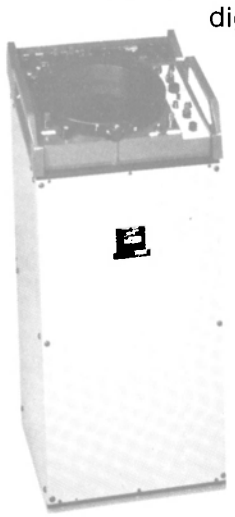
When your livelihood depends on your radar, you can depend on Furuno.

After all, we've spent more than 30 years designing the finest electronics for commercial mariners using rivers, harbors and seas around the world. Furuno radar has established an unequalled reputation for quality, reliability and performance in the most demanding applications. You'll find an appropriate model no matter what your business.



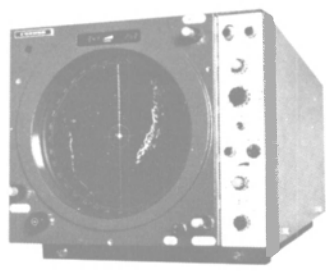
SERIES 7 are ultracompact, high performance radars for a limited budget. You can select 5, 10, or 25 kW transmitters, antenna lengths from 3 to 6.5 feet, range scales starting at ¼ and extending to 48, 72, or 100 n.mi., with a 7″ CRT display that offers built-in digital VRM, LED tuning and an exceptionally bright picture. This display may be table-top or bulkhead mounted, and all circuitry is engineered to the highest standards of today's electronic technology.





SERIES 10 radars offer most of the above performance features plus a big, bright 10″ CRT and more. Provision is made for a second built-in VRM and such options as gyro stabilization, reflection plotter, radar alarm and stand-alone console mount are available. This is, by far, the most compact high performance 10″ radar on the market today.

You can get complete information on any of these superb radars by visiting one of our more than 200 authorized dealer outlets, or by simply returning the coupon below.



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Type of vessel owned _____

☐ *The illustration above is one in a series of 12 by artist Larry Winborg that are now being offered in three sets of 4 prints each, reproduced in brown sepia tone on 17″x22″ heavy white art stock suitable for framing. Order any one or all sets directly from Furuno U.S.A. Just mark your choice below and enclose $5.00 per set for postage and handling.*

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Bergeron Plans New Yard To Build Hopper Barges

Bergeron Industries Inc., New Orleans, La., announced recently the firm will begin construction soon on a new $8-million shipyard to build river hopper barges. The yard, the company's third, will be located at Demopolis, Ala., on the Tennessee-Tombigbee Waterway.

George Schiro, vice president, said the company decided to diversify from their traditional deck and tank barges because of the strong demand recently for hopper barges to move coal.

Bergeron, with yards in St. Bernard, La., near New Orleans, and Port Bienville, Miss., is reportedly the largest builder of deck barges for the offshore oil industry. The firm constructed 58 deck barges in 1980.

The new firm will be called Bergeron Barges Inc., a subsidiary of Bergeron Industries. Construction on the yard is scheduled to begin soon. Production is set to start in March 1982 of large hopper barges with a cargo capacity of about 3,000 tons, or approximately twice the capacity of normal river hopper barges.

Edward L. Shearer, vice president of sales, said the yard will initially produce about 10 barges per month.

Florida Barge Lines Corp. of New Orleans, a subsidiary of Central Gulf Lines, filed an application last week with the Maritime Administration for vessel construction loan and mortgage insurance for nearly $93 million worth of tugs and barges. The carrier intends to build 116 hopper barges and 12 tugs, with Bergeron scheduled to construct the barges for delivery in 1982 and 1983, its first contract.

Studies show the demand for river hopper barges in the U.S. is already greater than the current capacity of the shipbuilding industry, noted Mr. **Shearer.** He added that the barges to be built by Bergeron could be used to carry grain, if covers are added.

Mr. **Schiro** said several factors entered into the decision to choose Demopolis for the new shipyard. Demopolis is located on the Tennessee-Tombigbee Waterway, which is scheduled for completion in late 1986. The waterway will generate a demand for more hopper barges to move coal, and will also create a need for barge repair and maintenance facilities. Mr. **Schiro** said the new yard will eventually engage in repair work too.

He noted that the Tenn-Tom will provide cost-efficient water transportation to carry raw materials to the new yard. Finally, he said, the Demopolis area has a readily available labor force with a record of high productivity.

Publish Radiotelephone Handbook For Mariners

A new 104-page handbook to aid in the proper use of marine radiotelephones has been published by the Radio Technical Commission for Marine Services.

Entitled "Marine Radiotelephone Users Handbook," the easy-to-understand book was produced primarily for the new marine radiotelephone owner, although it contains valuable reference information for all marine radio users.

The handbook was written by a task force representing radiotelephone manufacturers; the F.C.C., U.S. Coast Guard and other marine-related government agencies; the U.S. Power Squadrons; U.S. Coast Guard Auxiliary; the marine radio services of A.T. & T.; boating writers; and professional shipmasters.

Included are sections on obtaining radiotelephone licenses, installation instructions, selecting and using the correct channels for VHF/FM, single-sideband radios for long-range communications, routine and emergency operating procedures with sample scenarios for ordinary and distress calls, and procedures to place a call to or from a vessel underway.

The book costs $5 and is available from marine electronics and boat equipment dealers. Quantity discounts are available for dealers and for group purchases from RTCM, c/o F.C.C., P.O. Box 19087, Washington, D.C. 20036.

Moss Point Yard Delivers Two Supply Boats

Moss Point Marine, Inc., Moss Point, Miss., delivered two supply vessels, bringing to nine the number of offshore work boats and barges the new shipbuilder has delivered in its first year of operation. The Gulf Coast shipyard also announced the signing of a contract for construction of two 250-foot by 72-foot by 16-foot offshore deck barges.

Included in the recent deliveries were a 173-foot supply vessel for Golden Gulf Marine to be operated by Bosun-JMJ of New Orleans, and a 114-foot supply vessel for Sea Mar, Inc. of Lafayette. The 173-foot M/V Golden Girl is the second of 12 vessels contracted by Golden Gulf for construction by Moss Point Marine. The 114-foot M/V Cape San Blas is the second such supply boat of a two-boat contract for Sea Mar.

The two 250-foot deck barges, which will be delivered later this year, will be built on Moss Point Marine's new tilt beam launch system that is capable of handling up to 300-foot vessels.

The Golden Girl has a fuel capacity of approximately 57,000 gallons, 1,500 barrels of liquid mud capacity, and 3,600 cubic feet of dry mud. Her deck load capacity is 550 tons and the vessel will accommodate a crew of 16 persons. The Cape San Blas has a fuel capacity of 23,700 gallons, a deck load capacity of 125 tons, and will accommodate 14 crew.

The 17-acre Moss Point Marine yard is located just north of Pascagoula, Miss., on the East Pascagoula River, one mile north of Interstate 10. Construction personnel number close to 300. The shipbuilder is scheduled to deliver seven more 173-foot supply vessels in 1982.

Marine Application Of Clayton Steam Generators Shown In Free Brochure

Clayton Industries, El Monte, Calif., has published a new 16-page, full-color brochure detailing maritime applications of its steam generators. The brochure contains specifications, design features, and schematic drawings that illustrate several possible steam systems.

Clayton steam generators are available in sizes ranging from 33 to 500 boiler horsepower, and combinations capable of delivering up to 2,500 boiler horsepower are available. Clayton also offers automated units designed to function in unattended machinery areas onboard ship. Steam generators can be built to conform to all principal marine safety standards of the world.

In addition to covering steam generators, the brochure contains information and specifications for high pressure hot water heaters, waste heat recovery boilers, and hydro steam cleaners that are adaptable for use with shipboard steam systems.

For a free copy of the brochure,
Write 21 on Reader Service Card

Appoint Superintendent At Dravo Mechling Repair Facility In New Orleans

Philip T. Payton

Dravo Mechling Corp., the Pittsburgh-based barge line subsidiary of Dravo Corporation, recently announced the appointment of **Philip T. Payton** to the position as superintendent of Dravo Mechling's barge repair and fleeting facility in New Orleans, La.

Currently assistant superintendent of a similar facility in Baton Rouge, Mr. **Payton** succeeds **William R. Martyn,** who transferred to Dravo Mechling's Pittsburgh headquarters, where he will serve as commodities director-grain.

TANO To Supply Throttle System For Ballistic Missile Ship Conversion

TANO Corporation, New Orleans, La., has been awarded a contract from Boland Marine & Manufacturing Co., Inc., to install a TANO steam turbine automatic throttle system in the T-AK286 (FMB), a ship that Boland is converting from the merchant cargo vessel S.S. Mormacbay to a U.S. Navy ballistic missile carrier.

The system will be delivered in mid-1982, said **Michael L. Steine**, manager of marine marketing for TANO.

TANO designs and manufactures automation and control systems for ships, pipelines, process control, and energy management in industrial plants and commercial buildings. The company also designs and builds products for data communication systems and produces a line of intelligent terminals and micro-computers.

Brochures Available On New Line Of Twin Disc Marine Transmissions

Twin Disc recently introduced the line of coaxial in-line models of the NICO MGN Series of marine transmissions covering a range of up to 3,729 kw (5,000 hp). The company has announced an extension of this line to include horizontal and vertical input/output versions of this transmission series.

These new units are available with nominal capacities from 662 to 1,030 kw (888 to 1,381 hp), depending upon ratio, speed, and duty classifications. Additional sizes will be released in the near future to cover additional capacity ranges.

The major factor involved in the selection of a coaxial versus vertical versus horizontal offset input/output transmissions is the hull design, which in turn is predicted primarily on the boat function and the type of waters in which it will operate. Another factor is the necessary propulsion horsepower and/or torque to reach desired vessel performance where major factors are speed (free running, towing, or dragging), maneuverability, and stability.

In general, coaxial and horizontal units have the capability for a lower engine installation in the hull which improves stability. The horizontal units have an additional advantage because the engines can be moved inboard while the propeller center line remains outboard for improved maneuverability. Boats using this type of transmission are most commonly found on the rivers or intercoastal waterways.

Vertical offset units are most commonly used in V-shaped hulls where sufficient room is not available to allow for low engine installation. V-type hulls are most popular on offshore boats such as fish, supply and tugs.

For free brochures on both the coaxial and horizontal and vertical versions,

Write 26 on Reader Service Card

Canadian Firms Order Two Semisubmersibles In $300-Million Order

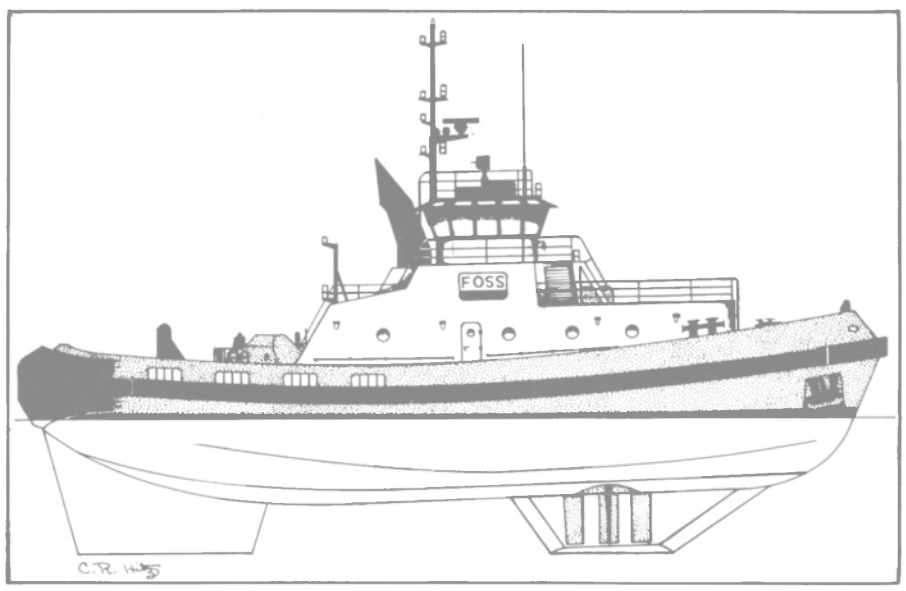
Two semisubmersible offshore mobile drilling units worth about $150 million (Canadian) each have been ordered jointly by two Canadian companies.

Bow Valley Industries and Husky Oil Operations announced recently that the rigs had been ordered from Canadian and Norwegian yards. Delivery is scheduled for mid-1983.

One of the semis, an Aker H-3.2, is to be built by Saint John Ship Building and Dry Dock Co., New Brunswick. The other, an enhanced Pacesetter, will be constructed in Norway by Framnaes.

A further semisubmersible order at the Canadian yard could also follow, according to a spokesman for Bow Valley Resources Services Ltd. Both units will be managed by BVRS on behalf of the joint venture.

The rigs will boost BVRS's position in providing Canadian offshore drilling facilities. It currently has one semisubmersible operating in the Mediterranean and this is expected to be relocated to Canada.



Tacoma Boat To Build Four Voith Schneider Equipped Tugs For Foss Launch

Foss Launch & Tug Co., Seattle, Wash., announced recently the signing of a contract agreement with Tacoma Boatbuilding Co., Tacoma, for the construction of four tractor tugs of a new design. The contract provides options for an additional two tugs.

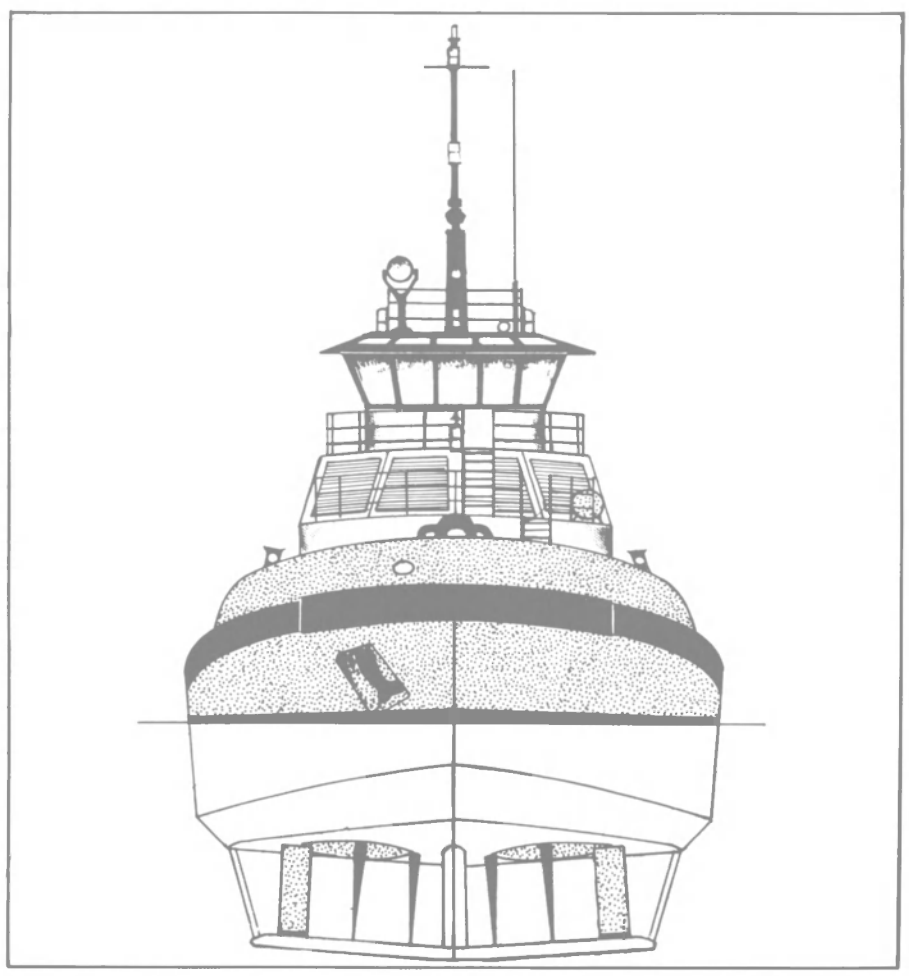
Three of the new tugs will be used in ship assist, harbor shifting and ship escort work in Tacoma, Seattle, and North Puget Sound. The fourth tug will be used in southern California by Pacific Towboat & Salvage, Long Beach. Both Foss and Pacific Towboat are divisions of Dillingham Corporation's maritime group.

Bruce Robeson, president of Foss, stated that a Voith Schneider propulsion system was selected to meet specific operating requirements, especially those of tanker escort and large vessel docking assist. The tugs' propulsion system will produce thrust in any desired direction and they will be able to proceed forward or back without reversing engines during the maneuver.

The tugs are designed to move sideward or be brought to a complete stop while going full ahead within a distance of approximately their length. In addition, they will be able to turn in a circle of not more than their own length.

The new twin-engine tractor tugs will be rated at 3,000 hp and 4,000 hp. The 3,000-hp tugs will have a length of 100 feet, a beam of 36 feet and a draft of 16 feet, and will be powered by two GM-EMD 12-cylinder E-6 diesel engines. The 4,000-hp tugs will have a length of 106 feet, a beam of 38 feet and a draft of 17 feet, and will be powered by two GM-EMD 16-cylinder E-6 diesel engines.

The conceptual design of the new Foss tractor tugs was a combination of efforts by Foss management and L.R. Glosten & Associates, naval architects. Foss expects the new tugs will begin entering service by mid-1982.



U.S. SHIP CONSTRUCTION CONTRACTS

1 — MERCHANT VESSELS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — SEPTEMBER 1, 1981

Builder	Owner	Total No.	Type	Hull Nos.	Est. GT (Each)	Est. DWT (Each)	Est. HP (Each)	Est. Total Cost ($Mil.)
Avondale Shipyards	American President Lines	3	Container	2329-31	40,500	30,300	D-43,200	330.0
	Suwanee River	1	Tug/Barge	2327-8	16,000	41,300	D-18,200	37.7
	Ogden Marine	2	Products	2318-19	25,000	42,000	D-15,000	100.0
	Corps of Engineers	1	Dredge	2322	9,900	8,000	D-10,400	67.5
	United States Trust	1	Dredge	2332	—	9,980	D-13,800	40.0
	Exxon Company U.S.A.	3	Products	—	26,000	43,000	D-17,000	300.0
Bath Iron Works	Corps of Engineers	1	Dredge*	402	6,000	—	D-7,000	65.0
	Falcon I Sea Transport	2	Tanker	404-5	24,000	33,900	D-14,720	142.0
	Calif. & Hawaii Sugar	1	Barge*	406	21,000	37,000	—	25.0
Bay Shipbuilding	Beker Shipping	1	Bulk Barge	728	20,000	41,000	—	NA
	Ocean Barge	1	Bulk Barge	730	17,500	33,000	—	NA
Bethlehem-Sparrows Point	Artemis Marine	1	Tug/Barge	4652	32,000	47,000	D-18,200	52.6
	First-Fifth Tug/Barge	5	Tug/Barge	4653-7	32,000	47,000	D-18,200	266.0
Equitable Shipyards	City of New York	1	Ferry	1714	3,000	4,200	D-7,800	15.0
General Dynamics-Quincy	Coastwise Shipping	4	Tank Barge	73-75, 82	—	27,000	—	57.0
	New England Electric	1	Collier	—	23,500	36,000	T-12,000	60.0
	Watermanship Steamship	1	RO/RO-Cont.*	85	18,500	23,500	T-32,000	61.0
Levingston Shipbuilding	Asco Falcon I	2	Bulk	752-3	23,500	36,000	D-14,800	80.0
National Steel & SB	Union Oil	2	Products	416-17	24,500	37,500	T-13,000	100.0
	American Tankships	2**	Products	419-20	24,500	37,500	D-11,400	102.0
	American Trading Trans.	3	Products	424-6	27,000	44,000	D-11,400	153.0
	Ingram Tankships	5	Products	—	—	37,500	—	NA
Norfolk Shipbuilding	Coordinated Caribbean	1	Barge	34	4,000	6,680	—	21.2
Southern Shipbuilding	Great Lakes Dredge	1	Dredge	120	3,300	4,400	D-3,000	NA
Sun Ship, Inc.	Sun Transport	1	Products	677	17,000	31,000	D-14,200	36.0
	Waterman Steamship	2	RO/RO-Cont.	679-80	18,500	23,500	T-32,000	137.5
Upper Peninsula SB	State of Michigan	1/4	Tug(1)/ Barge(4)	001-5	5,400	10,000	D-8,000	35.5
Wiley Manufacturing	American Dredging	1	Dredge	104	2,500	3,750	D-7,200	NA
	Texas Gulf	1	Dredge	108	2,800	3,800	DE	NA

* Subcontracted from Sun Ship. ** Option for three additional sister ships.

2 — OFFSHORE DRILLING RIGS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — SEPTEMBER 1, 1981

Builder	Owner	Name	Type	Delivery
Alabama Maritime Mobile, Ala.	Diamond M	Diamond M. Hunter	Semisub.	11/81
	"	Diamond M. Eagle	"	4/82
	"	Diamond M. Falcon	"	1/83
Baker Marine Ingleside, Texas	Huthnance Dlg.	Charger I	Jackup	11/81
	Huthnance Dlg.	Charger II	"	11/82
	Magnum Marine	Mr. Demp	"	11/81
	Magnum Marine	Robert N. Haskin	"	5/82
	Magnum Marine	Robert W. Womack	"	6/82
	Pool Offshore	Pool Offshore Rig 54	"	12/81
	Savage Drilling	Ponca	"	8/82
Bethlehem Steel Beaumont, Texas	Griffin-Alexander	Griffin-Alexander V	Jackup	5/82
	"	Griffin-Alexander VII	"	9/82
	"	Griffin-Alexander VIII	"	3/82
	Houtech Energy	Houtech II	"	10/81
	" "	Houtech III	"	3/82
	" "	Houtech IV	"	9/82
	O & U Drilling	Nordrill II	"	1/82
	Teledyne	Mobile 20	"	11/82
	Alfa Drilling	(unnamed)	"	1/83
Bethlehem Steel Sparrows Point, Md.	Griffin-Alexander	Griffin-Alexander IV	Jackup	3/82
	"	Griffin-Alexander VI	"	6/82
	Temple Drilling	Cheyenne	"	4/82
	Phoenix Seadrill	(unnamed)	"	7/82
Chicago Bridge & Iron Pascagoula, Miss	Dixilyn-Field	DF-77	Jackup	6/82
	Blocker Drilling	(unnamed)	Submersible	10/82
	" "	(unnamed)	"	2/83
General Dynamics Charleston, S.C.	Bailey & Shannon Inc.	Bill Bailey	Jackup	10/81
	" "	Bob Warner	"	12/81
	" "	Burr Rayburn	"	4/82
	" "	Herb Williamson	"	6/82
	" "	Mark Jones	"	1982
	" "	Mr. Webster	"	1982
Gulfport Shipbuilding Port Arthur, Texas	Perfordora S.A.	(unnamed)	Jackup	5/82
Ingalls Shipbuilding Pascagoula, Miss.	Transworld Drilling	Transworld 72	Submersible	12/81
	" "	Transworld 73	"	2/82
	Bonito Offshore	Bonito I	Jackup	7/82
	" "	Bonito II	"	4/83
	Chiles Drilling	Yucatan	"	12/81
	Global Marine	Glomar Main Pass I	"	11/81
	"	Glomar Main Pass II	"	1/82
	"	Glomar Main Pass III	"	5/82
	"	Glomar Main Pass IV	"	9/82
	Huthnance Drilling	Vanguard I	"	11/81
	"	Vanguard II	"	10/82
	Keyes Offshore	Keyes 302	"	11/81
	" "	Keyes 303	"	7/82
Levingston Shipbuilding Orange, Texas	Dixilyn-Field	DF-87	Jackup	9/82
	Noble Drilling	Ed Holt	"	11/81
	" "	(unnamed)	"	12/82
	Compania Perforadora	(unnamed)	"	5/82

2 — OFFSHORE DRILLING RIGS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — SEPTEMBER 1, 1981 (Con.)

Builder	Owner	Name	Type	Delivery
Marathon LeTourneau Brownsville, Texas	Chiles Drilling	Seabee	Jackup	12/82
	Global Marine	Glomar Adriatic V	"	8/83
	" "	Glomar Adriatic VI	"	10/83
	" "	Glomar Adriatic VII	"	1/84
	Penrod Drilling	Penrod 86	"	2/82
	" "	Penrod 88	"	5/82
	" "	Penrod 90	"	8/82
	" "	Penrod 98	"	4/84
	Rowan Drilling	(unnamed)	"	12/82
Marathon LeTourneau Vicksburg, Miss.	Penrod Drilling	Penrod 87	Jackup	5/82
	" "	Penrod 89	"	9/82
	" "	Penrod 91	"	1/83
	" "	Penrod 99	"	4/84
	Rowan Drilling	Gilbert Rowe	"	10/81
	" "	Cecil Provine	"	2/82
	Rowan Drilling	(unnamed)	Jackup	12/83
	" "	(unnamed)	"	11/84
	" "	(unnamed)	"	3/85
	" "	(unnamed)	"	1985
Vemar Shipyard Channelview, Texas	Atwood Oceanics	Richmond	Submersible	11/81
	Cliffs Drillling	(unnamed)	Jackup	10/81
	" "	(unnamed)	"	12/81
	Penrod Drilling	Penrod 170	Submersible	12/81
	" "	Penrod 171	Submersible	4/82
	" "	Penrod 172	Submersible	8/82
	Macan Offshore	(unnamed)	Jackup	4/82
	Goldrus Marine	(unnamed)	Submersible	3/83

3 — MAJOR U.S. NAVAL VESSELS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — SEPTEMBER 1, 1981

Builder	Type	Navy Nos.	No.	Est. Contract Value, $Mil.
Avondale Shipyards	Fleet Oiler	AO-178-9	2	$144.0
	"	AO-180, 186	2	146.2
Bath Iron Works	Guided-Missile Frigate	FFG-21, 24, 26	3	178.2
	"	FFG-29, 32, 34	3	147.0
	"	FFG-36, 39, 42	3	209.9
	"	FFG-45, 47, 49	3	195.4
	"	FFG-50, 53, 59	3	—
Boeing Marine Systems	"	PHM-2	1	21.3
	Missile Patrol Hydrofoil	PHM-3-6	4	178.0
Derecktor Shipyard	Med. End. Cutter*	WMEC 905-13	9	350.0
GD-Electric Boat	Attack Submarine	SSN-699	1	428.0
	"	SSN-701-4	4	1,737.2
	"	SSN-705-10	6	2,605.6
	"	SSN-719-20	2	—
	Trident Submarine	SSBN-726	1	285.4
	"	SSBN-727-9	3	699.4
	"	SSBN-730	1	354.5
	"	SSBN-731-2	2	699.0
	"	SSBN-733	1	401.0

3 — MAJOR U.S. NAVAL VESSELS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — SEPTEMBER 1, 1981 (Con.)

Builder	Type	Navy Nos.	No.	Est. Contract Value, $Mil.
Ingalls Shipbuilding	Missile Destroyer	DDG-994-6	3	1,050.0
	Destroyer	DD-997	1	231.0
	Aegis Missile Cruiser	CG-47	1	287.8
	" " "	CG-48	1	298.0
	" " "	CG-49, 50	2	667.1
Lockheed Shipbuilding	Sub. Tender	AS-41	1	209.5
	Dock Landing Ship	LSD-41	1	338.6
Marinette Marine	Fleet Ocean Tug	T-ATF-172	1	8.4
National Steel & SB	Destroyer Tender	AD-42-4	3	520.0
	Cable Repair Ship	T-ARC-7	1	107.0
Newport News SB	Attack Carrier	CVN-70-71	2	1,718.6
	Attack Submarine	SSN-712-15	4	388.0
	"	SSN-716-18	3	380.8
	"	SSN-721-3	3	675.0
Peterson Builders	Patrol Gunboats **	F-PGG-2-9	8	70.1
	Salvage Ship	ARS-50	1	54.5
Tacoma Boatbuilding	Missile Patrol Chaser **	F-PCG-1-4	4	52.5
	Med. End. Cutter*	WMEC-902-4	3	97.5
Todd-San Pedro	Guided Missile Frigate	FFG-19, 23, 25	3	151.0
	"	FFG-27, 30, 33	3	147.0
	"	FFG-38, 41, 43	3	214.8
	"	FFG-46	1	67.7
	"	FFG-51, 54	2	——
Todd-Seattle	Guided-Missile Frigate	FFG-20, 22	2	100.7
	"	FFG-28, 31, 35	3	147.0
	"	FFG-37, 40	2	143.2
	"	FFG-44, 48	2	135.3
	"	FFG-52	1	——

*For U.S. Coast Guard. **For Saudi Arabia.

Halter Signs Contracts To Build Six Additional Vessels For Petromar Fleet

Halter Marine, Inc., New Orleans, La., and the Petromar Corporation celebrated the christening of the 192-foot tug/supply boat Petromar Bravo with the signing of contracts for six additional tug/supply vessels. Each will be 185 feet long and powered by remanufactured EMD12645C diesel engines developing 3,000 hp. From left to right are: **Charles LeBlanc,** Petromar president; **James McDowell,** Petromar vice president, marketing; **Jim Banks,** Petromar vice president; **Bob Mark,** Halter sales executive; and **Jim Cobb,** Halter vice president, sales.

New Marine Lifting Equipment Code Published By LR

The first comprehensive code covering all lifting appliances intended for marine applications has been published by Lloyd's Register of Shipping.

Entitled "Code for Lifting Appliances in a Marine Environment," LR officials claim it is the first design standard in its field, providing requirements for a range of lifting appliances such as ships' cranes and derricks, offshore and floating cranes, launch and recovery systems for diving operations, lifts, ramps, and mechanical lift docks.

The chapter dealing with offshore cranes and submersible launching and recovery systems, LR states, fulfills a need in the offshore industry for guidance on environmental factors affecting such equipment. This is also the first time that the society's certification requirements have been established for floating cranes, mechanical lift docks, and shipboard lifts and ramps.

The code contains procedures to meet both the requirements of national governments for the certification of ships' cargo gear, and the requirements, where applicable, for the classification of marine lifting equipment.

Coinciding with the issue of the code, Lloyd's Register has introduced new class notations covering lifting equipment of all kinds installed on ships. In the case of specialized vessels such as floating cranes, offshore crane barges, and diving support ships building to LR class, the lifting equipment will automatically be included in the classification of the vessel starting in December 1981. In addition, optional class notations have been introduced for shipboard cranes, derricks, passenger and vehicle lifts, and ramps installed on board LR-classed ships.

The new code, which supersedes the existing "Code of Practice for the Construction and Survey of Ships' Cargo Handling Gear," is available from Lloyd's Register's Printing House, Garrett House, Manor Royal, Crawley England, or from LR's local offices.

New Company To Build Rescue Craft In U.S. Under British License

Halmatic Ltd., a British firm specializing in the design and manufacture of high-speed rigid-hull inflatable rescue craft, has licensed a new organization, Osborne Rescue Boats Corporation, to manufacture and market the craft in the U.S.

Headquartered in Newark, Delaware, the company recently introduced to the U.S. a series of all-weather rigid-hull inflatable boats which have had successful and extensive use in search and rescue operations by the oil industry in the North Sea, the British Navy, and the Royal National Lifeboat Institute.

The rigid hull inflatable concept, company officials state, offers many advantages over conventional hulls due to its superior stability, greater carrying capacity and better rough water performance.

Tenfjord Introduces New 'Plug-In' Steering Gear —Literature Available

A full-color brochure describing and illustrating the new "plug-in" steering gear developed by A.S. Tenfjord Mek. Verksted is now available.

A renown engineering company since it was founded in 1894, Tenfjord has manufactured and marketed hydraulic steering gear since 1953. The company has produced a "plug-in" self-contained unit for replacement of steering gear that fits directly onto the rudder stock without any complicated mounting or alignment procedures. The company states the new gear reduces both installation and maintenance costs.

The new brochure describes the new equipment in detail with photos, drawings, specification tables and examples of recent installations.

For a free copy of the brochure,
Write 34 on Reader Service Card

Elect E.B. Peebles Jr. New President Of Ryan-Walsh Stevedoring

The board of directors of Ryan-Walsh Stevedoring Company, Inc., Mobile, Ala., announced the election recently of **E.B. Peebles Jr.** as president. He succeeds **Gregory L. Leatherbury**, who retired, having served as president since 1965.

E.B. Peebles Jr.

In assuming the presidency of Ryan-Walsh, Mr. **Peebles** also becomes president of Ryan-Walsh subsidiaries Container Services International, Inc.; Marine Bulk Handling Corporation; Southern Marine Service, Inc.; Southern Steamship Agency, Inc.; and World Wide Crating and Warehousing Company, Inc. He continues as president of Stevedores, Inc., a Ryan-Walsh joint venture in Wilmington, N.C.

Mr. **Peebles** has worked for Ryan-Walsh and its corporate forerunner, Ryan Stevedoring Company, since 1939. Ryan-Walsh and its holdings are a subsidiary of Dravo Corp., Pittsburgh, Pa.

Brochure Available On Dock Fendering From J.H. Menge Co.

A four-color brochure describing the dock machinery and fendering products and services it provides has been published by the J.H. Menge & Company, Inc., of New Orleans, La. The 103-year-old company provides a wide range of mooring and related equipment from major manufacturers worldwide. The brochure lists many of the facilities using equipment the company provided. For a free copy of the Menge brochure.

Write 19 on Reader Service Card

B&W Offers Technical Paper On Advantages Of New Low-Speed Diesels

A forty-five page technical paper entitled "The Low-Speed Diesel and The Future Energy Scenario" has been published by B&W Diesel, Inc., New York, a subsidiary of B&W Diesel A/S, Copenhagen, Denmark.

Well illustrated with drawings, charts, tables and photographs related to the text, the paper describes technical considerations of the low-speed diesel as the most efficient converter of thermal energy into mechanical power.

The paper traces the development and design parameters of the company's low-speed diesels from the K-GF engines first produced in 1973 to the newly introduced L-GB engines. The new engines, the paper states, optimize the combination of longer stroke, higher output, higher maximum cylinder pressure, and the latest turbochargers producing high-thermal efficiency.

The new engines range from the L-35 GB/E to the largest, the L-90 GB/E. The L-35 has a 350-mm cylinder bore and a stroke of 1,050 mm which apply for the first time a stroke-bore ratio of 3:1. The cylinder output ranges from 690 bhp at 200 rpm to 405 bhp at 163 rpm. Specific fuel oil consumption down to 129 g/bhph is guaranteed.

The largest of the new engines is the L-90 GB/E which is based on the existing and well-proven GFCA design. The cylinder output ranges from 4,570 at 97 rpm to 2,740 bhp at 79 rpm. Specific fuel oil consumption down to 126 g/bhph is guaranteed. Most of the GB/GBE engines will be available starting in 1983. For a free copy of the paper,

Write 22 on Reader Service Card

Soviets Award $120-Million Contract To Valmet For Two Arctic Cargo Ships

A contract has been signed between V/O Sudoimport of Moscow and Valmet Oy, under which Valmet Helsinki Shipyard will, in 1983-84, build two more Arctic 20,000-dwt multipurpose dry cargo vessels for service in the northern areas of the USSR. The value of the contract is nearly $120 million (U.S.).

Valmet's contracts with Sudoimport during the last three months total $350 million (U.S.) for 20 vessels including two barge carriers, two pusher tugs, five research vessels, four offshore supply ships, and four accommodation ships. These contracts insure full employment at the company's Wartsila and Valmet yards through 1983.

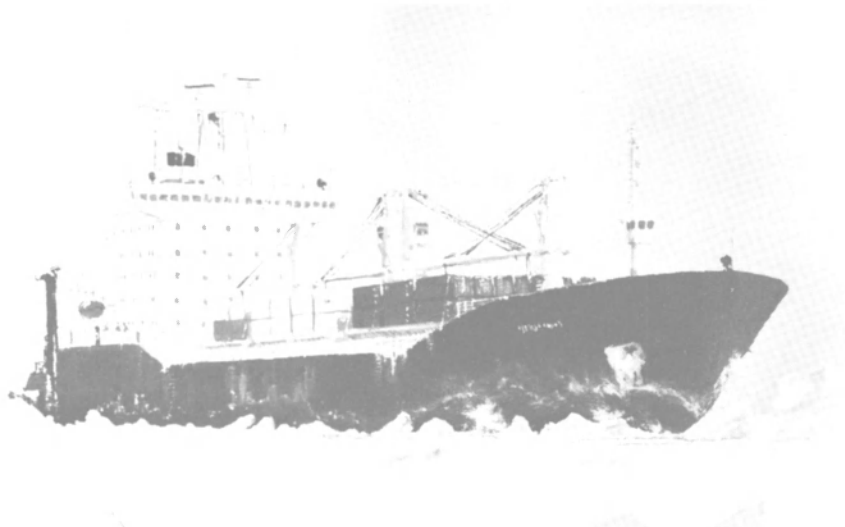
The new vessels are general cargo, having six holds, a 'tween deck, open type hatches, and 40-ton deck cranes. The 'tween deck will be fitted with a quarter ramp in the stern with a free breadth of 5 meters.

The vessel is designed to serve in Arctic conditions, to break ice 1 meter thick with constant speed without icebreaker assistance and to endure temperatures down to −50° C.

The hull has typical icebreaker features such as bow form, sloping sides and a heeling system. The vessel will fulfill the requirements of the ULA-class of the USSR Register of Shipping.

The machinery consists of two Sulzer 14 ZV 40/48 medium-speed diesel engines totaling 15,400 kw (21,000 bhp) geared through Valmet-Renk gears and hydrodynamic couplings to a KaMeWa controllable-pitch propeller.

The vessel with a 26,400-cubic-meter hold capacity is intended for all kinds of cargo, including general cargo, coal, ore, grain, heavy units, explosives, and chemicals. The 'tween deck may be used for ro ro cargo and is fitted with an 800-meter lane for trailers. There are also lashings for 532 twenty-foot containers of which 50 can be refrigerated. The hatch covers can also be used for packaged timber.



An artist's rendering of the 20,000-dwt multipurpose cargo ship the Soviets have ordered from Valmet Shipyards, Finland. This ups total Valmet newbuildings for the USSR to $350 million (U.S.) for 20 vessels.

The ships will have a length overall of 174 meters (about 571 feet); breadth of 24.50 meters (80 feet); depth to upper deck, 15.20 meters (50 feet); draft, maximum, 10.5 meters (34 feet); deadweight, 20,000; crew, 52; output, 2 x 7,700 kw (2 x 10,500 bhp); and speed, 17 knots.

Booklet Available For Two Sperry Radar Systems

A 12-page booklet describing the SEATHRU™ MK-3012 and MK-4016 radar systems has been published recently by Sperry Marine Systems, Great Neck, N.Y. The systems, which use completely interchangeable modular units, meet or exceed regulatory requirements.

The booklet contains information on the controls, flexibility, optional items, and capabilities of the navigation equipment, as well as installation planning drawings and specifications.

For a free copy of Sperry's radar booklet,

Write 17 on Reader Service Card

South Korea To Build Own Semisubmersible Unit To Cost $80 Million

The South Korean government plans to build its own 10,000-gt semisubmersible offshore drilling unit for oil exploration at a cost of $80 million.

The order will be placed, probably at a domestic yard, in time for delivery in 1983. Previously the government intended to lease rigs, but the Ministry of Energy and Resources reportedly experienced difficulty in securing units and self ownership could prove more cost effective.

While the Seoul government can expect to spend $80 million on building its own rig, calculations show that leasing could cost as much as $40,000 a day. In the minimum of one month needed to drill a 3,000- to 4,000-meter exploratory hole, the cost of leasing could be $12 million.

Private shipbuilders such as Hyundai, Samsun, Daewood, and Korea Shipbuilding will be invited to participate in the project.

Hong Kong Islands Line Buys Two Containerships

Hong Kong Islands Line has brought two containerships for its trans-Pacific fleet, the company's agent, Hong Kong Islands Shipping Co. Ltd., Alameda, Calif., announced recently.

The vessels, having a capacity of 736 twenty-foot container units each, were purchased from Hapag-Lloyd and will be named the Green Island and the Ngan Chau.

The Green Island joined service October 1, replacing the Sunshine Island, which will be placed in Australia-to-Far East service. The Ngan Chau will begin service in January.

Northern New England ASNE Appoints Councilman, Sets Meeting Schedule

The Northern New England Section of ASNE announced the appointment recently of Capt. **Gerald Sedor**, officer in charge of PERA(SS), to a three-year term as councilman, replacing Capt. **Phil O'Connell**, who was transferred to SUPSHIPS, Groton, Conn.

ASNE section chairman **Phil Johnson** reported that a program has been initiated to accommodate the Northern New England section members living in the greater Bath and greater Boston areas. As a result, three dinner meetings will be scheduled in Bath, and three in Boston during the course of the year. The remaining program for the first half of the 1981-82 year is: October 15, "Marine Terminals — Newington, N.H. & Searsport, ME," speaker from Sprague Energy Corporation—Commissioned Officers Club, Portsmouth Naval Shipyard, Portsmouth, N.H.; October, "Wind Ships," speaker from Wind Ship Development Corporation — tentatively scheduled for the Museum of Science, Boston, Mass; November, "Alternate Marine Fuels," speaker from General Electric Company and a ship tour at Bath Iron Works, Bath, Maine—Commissioned Officers Club, Naval Air Station, Brunswick, Maine; December, "Foreign Submarine Designs," by Capt. **Harry Jackson**, USN (ret.) — this will be a joint meeting with The Society of Naval Architects and Marine Engineers — Commissioned Officers Club, Portsmouth Naval Shipyard.

Guralnick Associates Receives OTEC Contract

Morris Guralnick Associates, Inc., San Francisco, Calif., has been selected by the Dillingham Corporation's Hawaiian Dredging & Construction Division to assist in the design and eventual construction of a floating platform to perform rigorous at-sea tests on a large fiberglass cold water pipe as part of the U.S. Government's Ocean Thermal Energy Conversion (OTEC) research program.

The two-part project provides $600,000 for funding the engineering phase and $7.2 million for construction, instrumentation, deployment, testing, and data validation of computer codes. A 10-foot-diameter, 1,000-foot-long pipe will model at one-third scale the pipe that eventually will be required for an OTEC platform processing 40 megawatts.

This project is another step toward extraction of solar energy from the temperature difference of seawater on the surface and at great depths, by means of a proven technology originally proposed in the late 19th century.

Guralnick and HD&C have been in the forefront of the recent renewed interest in OTEC. The firm provided naval architectural and marine engineering consulting services to the U.S. Department of Energy throughout the period of design and construction of OTEC-1, the first ocean test ship. Hawaiian Dredging was a partner in "Mini-OTEC," the first success in the U.S. of actual OTEC power generation at sea.

OTEC systems produce electricity by using the temperature difference between warm water at the ocean's surface and cold water from approximately 3,000 feet deep. The warm water is used to evaporate a working fluid, such as ammonia, that boils at a relatively low temperature. The resulting vapor drives a turbine that in turn runs a generator.

Cold water piped up from the depths is used to condense the vapor, and the fluid is then boiled again. The system is closed, so the fluid is constantly reused.

Among other advancements in this plan, MGA has completed the engineering for deployment and support of 3,000-foot-long pipes in the deep-ocean environment. To do this, the firm developed complex computer methods for calculating the forces imposed on the pipe and deployment vessels.

The award of the prime contract was announced early in July by Senator **Spark Matsunaga** of Hawaii, who stated that funds will be provided by the National Oceanic Atmospheric Administration (NOAA).

GECC Names Gary Wendt VP For Commercial And Industrial Financing

Gary C. Wendt has been named vice president and general manager for General Electric Credit Corporation's (GECC) commercial and industrial financing division. Mr. **Wendt** will be headquartered at Stamford, Conn.

Gary C. Wendt

Mr. **Wendt's** new responsibilities include management of GECC's commercial and industrial portfolio, which is valued at more than $4.5 billion in earning assets, and development of new business areas.

GECC's commercial and industrial financing division provides leasing and financing programs to a number of the nation's vital industries, such as transportation, energy exploration and communications. This GECC division also provides commercial financial services and acquisition financing.

Maritime Industries Signs Thruster Manufacturing Agreement With Pleuger

Maritime Industries Ltd., Vancouver, Canada, announced recently that the company has signed a license agreement with Pleuger Unterwasserpumpen GmbH of Hamburg, West Germany. Under the agreement Maritime will manufacture and sell 360-degree rotatable and tunnel thrusters of Pleuger design for U.S. and Canadian markets.

Maritime Industries have been designing and manufacturing 360-degree thrusters for marine propulsion and maneuvering systems since 1965 for service in ferries, tugs, dredges, offshore craft, barges, and specialized military applications.

Pleuger has been supplying maneuvering and propulsion systems since 1950 and their product range includes fixed and controllable-pitch units of up to 6,000 bhp.

ATCO To Supply Deck Fittings For Three Ships

ATCO Marine Corporation, New York, N.Y., exclusive U.S. representatives for Taylor, Pallister & Co. Ltd., Newcastle, England, announced recently that three new product carriers being built at Avondale Shipyards, New Orleans, La., for Exxon International Company, Florham Park, N.J., will be equipped with deck fittings of Taylor Pallister design. Taylor Pallister & Co. is one of the world's leading designers and manufacturers of deck fittings, supplying new vessel construction on a worldwide basis.

Auxiliary Sail Rig Passes Sea Tests On Cargo Ship

An auxiliary sailing rig installed on a 3,000-dwt cargo ship successfully completed sea trials and will soon be further tested in Caribbean trading.

The rig was developed by Windship Development Corp., Norwell, Mass., in conjunction with Ceres Hellenic Shipping Enterprises Ltd., Piraeus, Greece, on whose ship, the Mini-Lace, the sail was fitted and the sea trials undertaken recently.

The test was held off New Bedford, Mass., in Buzzards Bay.

Lloyd Bergeson, president of Windship, said the rig was tested to confirm the expected reductions in fuel consumption to be achieved by sail assistance while maintaining required vessel speed.

The recent trials were carried out to evaluate the effectiveness of the rig's design and the vessel's performance under sail. Both were up to expectations, Mr. **Bergeson** indicated. The fuel savings are expected to be substantial, he added.

The rig is a triangular Dacron sail of 3,000 square feet which is attached to a 100-foot unstayed mast that is rotated for furling and unfurling. The mast and boom weigh over 40 tons.

Trimming and furling is accomplished by hydraulic winches and operating gear controlled automatically by computer from the bridge.

Structural components of the rig were fabricated by Hodgson Steel and Iron Works, Niagara Falls, Ontario, and the hydraulics by the Pine Hill Equipment Co., Westport, Mass.

The sail was produced by Hood Sailmakers, Marblehead, Mass.

According to Hood officials, the sail was specifically designed, woven, and finished for this rig. An exclusive formula that impregnates the Dacron fabric protects the sail from the sun's ultraviolet rays. The fabric is in excess of 20-ounce sailcloth with a minimum useful life of five years as specified by Ceres. The sail clews were tested to withstand 30 to 35 tons.

The only other merchant ship with sail-assisted propulsion is a 1,600-dwt Japanese tanker mounting two folding aero foil aluminum sails that reportedly achieved up to 50 percent savings in operational fuel costs with use of sail.

Halter Completes Diesel Electric Supply Boat Contract For Acadian

The recent delivery of the Acadian Commander (shown right) and Acadian Explorer by Halter Marine, Inc., New Orleans, La., marked the completion of a six vessel contract with Acadian Marine Service, Inc. for the world's first diesel electric SCR tug/supply vessels.

The 217-foot workboats are powered by diesel generators supplying electricity, via a silicon controlled rectifier (SCR) system, to the ships' dc traction motors turning the propeller shafts. SCRs convert electricity from ac to dc and permit control over the dc output to vary the speed of bowthruster, tow winch, and propulsion motors.

Labeled the Mariner class after the lead ship Acadian Mariner, "the SCR vessels have introduced, and proven several new concepts in the design and operation of workboats for the marine transportation industry," stated **Harold P. Halter,** president and board chairman.

"Innovations like the SCR system itself, flexible horsepower, and engine room placement are just a few of the new ideas incorporated in the Mariner class," said Mr. **Halter.**

Up to five Detroit Diesel GM-16V149TI diesel-powered 900-kw generators make up the flexible power system according to the horsepower demands of the charter. The skid-mounted generators are easily installed on prepiped and prewired foundations in a matter of hours.

The engine room on each vessel is located on the main deck level inside the forecastle. This arrangement allows easy access to the generators, has short exhaust runs, and eliminates the large engine room below deck for 30 percent more cargo area there. A relatively small compartment aft contains the Gulf Electroquip dc motors and Philadelphia gearboxes. Shaft brakes, reverse gears, and clutches are also eliminated since the electric motors handle those duties.

The Acadian Mariner was delivered in November 1978 with five generators onboard. The flexible horsepower concept allowed two generators to be removed when the vessel was chartered by the U.S. Navy Sealift Command since the 8,000 hp was unnecessary for work as a breakbulk and container carrier.

"We take the flexible power concept one step further," said **Robert Jumonville,** Acadian operations vice president, "by running only two of the three remaining generators whenever we're on schedule, the Acadian Mariner has experienced up to 35 percent fuel savings while still running at 12 knots."

Operating in parallel, the generators supply ac power to a common bus, or power pool. Electrical needs are drawn from the pool either for ac service or fed to the SCR system for conversion to dc power. One generator provides enough power to turn both shafts for twin propeller handling and speeds up to eight knots.

When electrical requirements exceed the output of one generator another is put on-line, and another, until the load reaches the maximum capacity installed in the vessel.

"The extra generators remain idle until more horsepower is needed," explained Mr. **Jumonville,** "this obviously saves fuel and is the most efficient use of diesel engines."

Diesels attached to generators run at a constant rpm and do not encounter the same resistance and loads found on conventionally powered vessels.

The Acadian Seafarer is operating in its full 7,200-horsepower mode with five generators and four traction motors as an oceanographic research vessel on charter to Texaco. The recently delivered Acadian Commander has also been chartered for seismic exploration by Digicon, Inc., Houston, Texas.

The underwater sound profile of the Mariner series is acous-

tically lower than conventional supply boats due to the isolation of the diesel engines and subsequent lack of vibration. Large, quiet running vessels are favored as research ships because their low sound profiles do not mask the acoustical returns from seismic shots, said Mr. **Jumonville**.

SCR vessels also have maximum torque available at all rpm for efficient towing of seismic arrays sometimes two miles long. The 217-foot long vessels have a beam of 44 feet and a 16-foot depth. Each vessel displaces 2,400 tons loaded and is admeasured under 200 gross tons.

The Acadian Commander has a speed in excess of 13 knots turning two five-bladed, 108-inch-diameter stainless steel propellers inside foil-shaped kort nozzles. A bowthruster is powered by a GE-752 VDC electric motor. There are accommodations for up to 23 passengers and crew and, with alternate arrangements, up to 50 persons.

Pilothouse electronics include two Furuno radars, Drake SSB and Sailor VHF radios, Micrologic loran "C", Sperry autopilot, Raytheon depth recorder and magnetic compass.

The Mariner class vessels were built to American Bureau of Shipping classification A-1, Maltese Cross, full ocean towing, AMS, Circle "E" and ice class "C", by the New Orleans division of Halter Marine.

ACADIAN COMMANDER
Specifications

The five (5) Detroit Diesel 16V149TI diesel engines used to drive the generators are capable of producing 8,000 bhp. Electrical power is generated by five (5) 900-kw, 3-phase, 60-cycle, 600-volt ac generators. Power to the propellers is provided by up to four (4) Gulf Electroquip 581, 600-volt dc motors rated at 1,800 hp @ 1,000 rpm.

SCR controls	Ross-Hill
DC traction motors	Gulf Electroquip
Steering gear	Electro-Hydraulic SSI
Reduction gears	Philadelphia Model 33DHMGH
Loaded speed	13 knots +
Propellers	(2) 108-inch stainless 5-bladed in nozzles
Windlass and towing capstan	HBL
Ballast, bilge, fire and fuel pumps	Goulds
Auxiliary generator	(1) Delco E-6967 driven by (1) GM 3-71 diesel
Engine monitoring system	EMI
Air-conditioning and heating	Carrier
Air compressor	(2) Quincy D325
Radars	(2) Furuno DRA-448
Radios	(1) Drake SSB (1) Sailor VHF
ADF	(1) Furuno
Loran "C"	(1) Micrologic
Gyrocompass	(1) Sperry MK 37
Autopilot	(1) Sperry
Depth recorder	(1) Raytheon DE750
Length o.a.	217′
Breadth	44′
Depth	16′
Draught	13′6″
Bhp	4,000 - 8,000
Speed-loaded	13 knots +
Clear deck	146′ x 36′
Deck load	825 L/T
Containers	90 TEUs

135-Page Full-Color Catalog Available On Limitorque Actuators

A full-color, 135-page catalog package including seven sections is available from Limitorque describing the company's complete line of marine valve actuators and controls.

The catalog is divided into separate sections covering valve actuators, valve controls, high-speed and high temperature valve controls, bevel gear actuators, electric gear actuators, worm gear actuators, and an instruction and maintenance manual.

Full-page detailed drawings with dimensions and specifications are included for almost all models in each series. Parts identification charts, lists of materials, exploded view drawings, photographs, installation tips, and an instruction and maintenance manual are included.

For a free copy of this valuable reference and data package on Limitorque products,

Write 15 on Reader Service Card

$55.6-Million Arctic Research Center To Be Built In Newfoundland

A $55.6-million maritime research center is under construction at St. John's, Newfoundland. Named the Arctic Vessel and Marine Research Institute, the center has the potential to make research contributions to the offshore industry.

Studies concerned with oil production, vessel performance, and cold water engineering will be able to be performed at the institute, noted **Neil Windsor**, Development Minister of the Canadian province.

Target date for completion of the institute is in the spring of 1983.

The institute is being built and will be managed by Canada's National Research Council.

A feature of the institute will be a huge ice tank that simulates ice-covered seas, along with an open-water tank, equipment for designing and cutting test tank miniature models, a mobile data acquisition system and a data analysis center.

The tanks will be used to test the performance and seakeeping facilities of the model hulls, drilling platforms, and other marine-related structures.

According to Mr. **Windsor**, the ice tank will be twice the size of any now in existence, thereby permitting the use of larger models. The studies will include maneuvering in ice, and experiments in how to divert icebergs away from offshore rigs.

UPSCO Names Shakshober VP-Design & Engineering

MacLean C. Shakshober has been named vice president of design and engineering at Upper Peninsula Shipbuilding Co. (UPSCO), Ontonagan, Mich. UPSCO, a new construction and repair shipyard, utilizes the most advanced design and steel fabrication technology in the construction of tugs, barges, and ships.

MacLean C. Shakshober

Mr. **Shakshober** attended the Webb Institute of Naval Architecture and holds a Professional Degree of Naval Engineer from the Massachusetts Institute of Technology. His broad experience includes program management of advanced planning and technology projects at Sun Shipbuilding, construction management and design management for Newport News Shipbuilding Company, as well as several years in engineering, planning and construction for the U.S. Navy, where he retired as commander.

Mr. **Shakshober** came to UPSCO in 1980 from Sun Ship, where he was manager of the hull sciences department of corporate science and technology. Previously, he spent 13 years at Newport News Shipbuilding.

New Amarillo Gear Right Angle Gear Line —Literature Available

Amarillo Gear Company, Amarillo, Texas, has expanded its line of spiral bevel right angle gear drives to include 25 standard models rated from 20 to 1,800 hp. Amarillo gear drives transmit power at a right angle from horizontal engines or turbines to bow and stern thrusters, barge pumps, and fire pumps with 94 to 97 percent efficiency depending upon speed, horsepower, and thrust load, according to the company. They are reported to be easily adapted to a variety of applications, and are factory mutual approved for use with vertical fire pumps.

For free literature describing the full Amarillo Gear product line,

Write 23 on Reader Service Card

Twin City Barge Names Wolgamot To Legal Post

Steven **Wolgamot** has joined Twin City Barge, Inc., St. Paul, Minn., as assistant general counsel and director of special projects, it was announced recently by **Ben E. Fellows**, president.

A naval architect and marine engineer, Mr. **Wolgamot** previously was a practicing attorney with the Minneapolis firm of Dorsey, Windhorst, Hannaford, Whitney & Halladay.

Twin City Barge is a diversified company engaged in river transportation, barge construction, and terminal operations.

Crane Brochure Available From Appleton Marine

A 16-page, four-color brochure that pictures and describes the full range of its Sea-Lift cranes has been published by Appleton Marine, a division of Appleton Machine Co., Appleton, Wis.

The brochure shows the standard and special application cranes manufactured by Appleton, plus optional features that can be incorporated. All cranes are designed and tested in accordance with specifications of the U.S. Coast Guard and the American Bureau of Shipping.

Extendable, fixed, and knuckle-boom cranes, dual hoist, cargo hose handling, aluminum, and bulk cement unloading cranes are shown along with their specifications. For further information and a free copy of Appleton's crane brochure,

Write 33 on Reader Service Card

Launch Largest Car/Passenger Ferry At Gdansk Shipyard

What is reported to be the largest car/passenger ferry in the world — the first in a series of four — was launched recently at the Gdynia Shipyard, Gdansk, Poland, for the Stena Line AB, Gothenburg, Sweden.

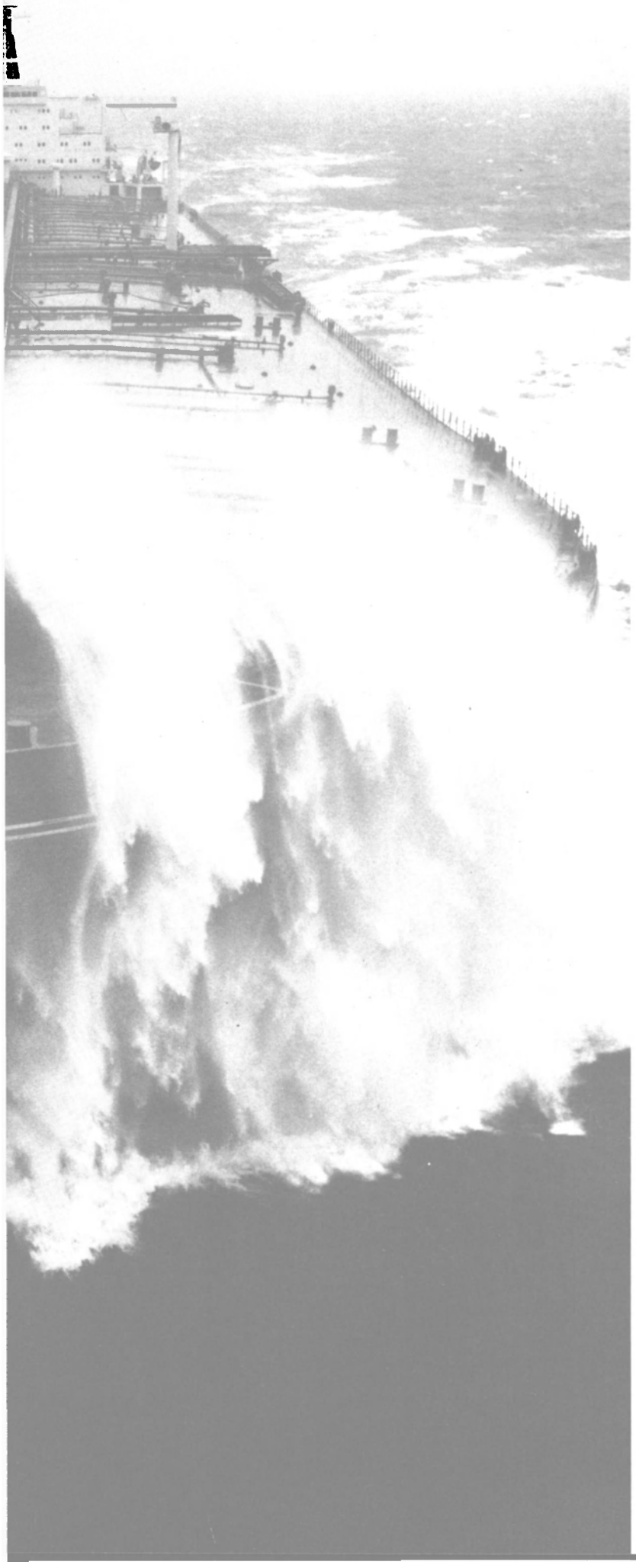
Despite the present difficulties in Poland, the launching occurred almost in line with the time schedule and the M/S Stena Scandinavica will be delivered in the first quarter of 1983, Gdynia, officials reported.

The 173 m long and 29 m wide (about 568 by 95 foot) ferry can transport up to 2,500 passengers, 90 percent of whom can be accommodated in private cabins, and 700 cars or 100 trailers between Gothenburg and Kiel, Germany. The vessel will include a main restaurant with a 570-person capacity, an aft restaurant for 470 persons, and a night club with a 400-person capacity. Conference rooms for a total of 450 persons and a duty-free shop also will be incorporated.

Designed for a service speed of 22 knots, the completely air-conditioned vessel will be fitted with gyro fin stabilizers.

Principal particulars of the M/S Stena Scandinavica are: length, overall — about 173.0 m (568 ft.); length between pp — 154.2 m (506 ft.); breadth molded — 28.5 m (94 ft.); breadth extreme — about 29 m (95 ft.); depth molded to 3rd deck—8.6 m (28 ft.); depth molded to 12th deck (top)—33.2 m (109 ft.); service draft — 6.25 m (21 ft.); design draft — 6.65 m (22 ft.); max. draft—6.7 m (22 ft.); deadweight on design draft — 4,400 ton; deadweight on service draft —3,000 ton; speed on service draft — 21.5 knots; gross tonnage — about 19,000 grt; class — Lloyd's Register of Shipping +100 A-1 Car Ferry + LMC UMS, Ice 2.

Equipment includes: 4 16 cyl. Zgoda/Sulzer 16 ZV 40/48 10,000 hp each, 40,000-hp heavy fuel operation 3,500 sec. ri; 2 reduction gears 500/135 rpm Renk ASL 200; 2 CP propellers Zamech/Liaaen; 2 rudders; 2 bow thrusters, 1,500 hp each, Zamech/Liaaen; 2 fin stabilizers, 13.5 sqm each, Sperry; 5 auxiliary engines Cegielski/Sulzer, 8ASL 25/30, 1,760 bhp each at 750 gpm; 2 steam boilers, Gdansk Shipyard; 2 exhaust gas boilers, Green Boilers; 2 fresh water evaporators, Nirex; 5 AC generators Dolmel/Siemens, 380 V/50 Hz, about 1,500 kva each, engine monitoring system, Saab; main engine combustion control system, Asea.



A Preview

EXTREME LOADS RESPONSE

Symposium

Two of the maritime industry's internationally respected organizations are sponsoring a two-day Extreme Loads Response Symposium to be held October 19-20 at the Sheraton National Hotel, Arlington, Va.

The symposium is being arranged by the interagency Ship Structure Committee and The Society of Naval Architects and Marine Engineers (SNAME). It is the third in an extremely successful series of conferences the organizations have sponsored starting with a ship structures symposium in 1975. The second technical symposium, held in 1975, was concerned with ship vibration.

The Extreme Loads Response Symposium brings together more than 400 representatives from the maritime community, including shipowners, operators, builders, designers, researchers, government agencies, and classification society officials, to discuss all aspects of structural response under extreme loadings.

The nine technical sessions will feature papers covering a broad range of topics including load definition, response assessment, materials properties, fabrication requirements, reliability, design criteria, design methods, and service performance.

According to **John B. O'Brien**, chairman of the symposium, "In recent years, the statistical nature of structural loadings and responses has become better understood and means for consideration in the design process developed." The high cost of shipbuilding and repair, he said, require that full advantage be taken of this knowledge and its related technology in future ship designs. "It is timely that the problems of extremes and available technology for their treatment be exposed and discussed in an open forum."

The technical program will begin with welcoming remarks by chairman **O'Brien, John J. Nachtsheim**, president of SNAME, and Rear Adm. **C.T. Lusk Jr.** of the U.S. Coast Guard.

The symposium banquet will be held at 7 p.m. on Monday, October 19, at which Judge **Charles S. Haight Jr.** of the U.S. District Court will be the featured speaker. He will treat the subject of the engineer as an expert witness.

John Vasta, a well-known and respected structural engineer, will be honored at Monday's luncheon for his contributions to the disciplines involved in shipbuilding. The volume of technical papers and discussions to be published after the symposium also will be dedicated to Mr. Vasta.

The technical program was organized by **Walter Maclean**. The members of the arrangement committee were: **William S. Siekierka, Richard W. Rumke, Theodore W. Chapman, James A. Sanial Jr., Trevor Lewis-Jones,** and **David B. Anderson**.

The Ship Structure Committee is the standing U.S. interagency committee whose responsibility is to conduct a research program to improve the design, materials, and construction of ships and marine structures. Its members are: U.S. Coast Guard, Naval Sea Systems Command, Military Sealift Command, Maritime Administration, American Bureau of Shipping, and the U.S. Geological Survey.

EXTREME LOADS
RESPONSE SYMPOSIUM 1981

TECHNICAL PROGRAM

Monday, October 19

Welcome — John B. O'Brien, Head, Surface Ship Structures Branch, Naval Sea Systems Command; **John J. Nachtsheim,** President, Society of Naval Architects and Marine Engineers; Rear Adm. **C.T. Lusk Jr.,** USCG

SESSION I—Presiding Officer, **John B. O'Brien,** Naval Sea Systems Command; Assistant, **Frank J. Slyker,** Bethlehem Steel Corporation

A. Extreme Loads in Navy Ship Design—Capt. **Myron Ricketts, William J. Siekierka,** Naval Sea Systems Command

B. The Consequences of Extreme Loading on Ship Structures—Richard J. Burke, U.S. Salvage Association

SESSION II—Presiding Officer, **Stanley G. Stiansen,** American Bureau of Shipping; Assistant, **Naresh Maniar,** M. Rosenblatt & Sons

C. Principles of Extreme Value Statistics and Their Applications — Michel K. Ochi, University of Florida

D. Predicting Hull Bending Moments for Design—Edward V. Lewis, Consultant; **Robert B. Zubaly,** State University of New York Maritime College

E. Combining Extreme Environmental Loads for Reliability-Based Designs—Alaa Mansour, University of California, Berkeley

SESSION III—Presiding Officer, Capt. **Richard I. Brown,** U.S. Coast Guard; Assistant, **Frank H. Sellars,** MPR Associates

F. Progress in the Development of Structural Load Criteria for Extreme Waves—William H. Buckley, Alexander B. Stavovy, David W. Taylor Naval Ship Research and Development Center

SESSION IV—Presiding Officer, **Peter M. Palermo,** Naval Sea Systems Command; Assistant, **Ivan Mertl,** J.J. McMullen Associates, Inc.

G. Fatigue Analysis Method for LNG Membrane Tank Details — M. Huther, F. Benoit, J. Poudret, Bureau Veritas

H. Structural Failure of a Small Cargo Vessel Among Rough Seas — Yoshiyuki Yamamoto, Hideomi Ohtsubo, Yu Takeda, Toichi Fukasawa, University of Tokyo

SESSION V—Presiding Officer, **Donald Stein,** Military Sea Lift Command; Assistant, **Alfred L. Dinsenbacher,** David W. Taylor Naval Ship Research and Development Center

I. Overall Structural Response of a Ship Struck in a Collision—Karl A. Reckling, Technische Universitat Berlin

J. Grounding of a Membrane Tanker — Correlation Between Damage Predictions and Observations — J. Poudret, M. Huther, Bureau Veritas; **P. Jean,** Gaz Transport Engineering; **H. Vaughan,** University of British Columbia

Tuesday, October 20

SESSION VI—Presiding Officer, **Price McDonaldson,** U.S. Geological Survey; Assistant, **Charles Jordan,** Newport News Shipbuilding

K. Evaluation of Ultimate Ship Hull Strength — R.S. Dow, R.C. Hugill, J.D. Clark, C.S. Smith, Admiralty Marine Technology Establishment

L. Strength of Ship Hull Girders under Moment, Shear and Torque — Alexis Ostapenko, Lehigh University

SESSION VII — Presiding Officer, **James G. Gross,** Maritime Administration; Assistant, **Irving L. Stern,** American Bureau of Shipping

M. Selection of Structural Materials for Extreme Loads Environments— Robert H. Stern Jr., Lukens Steel Co.

N. Fracture Characteristics of Ship Steels Under Extremely High Loading Rates—A.K. Shoemaker, U.S. Steel Corporation Research Laboratory

O. Some Extreme Effects of Residual Stresses in Shipbuilding — Alfred H. Wells Jr., Newport News Shipbuilding

SESSION VIII — Presiding Officer, Capt. **J. Richard Gauthey,** USN, Naval Sea Systems Command; Assistant, **Roger G. Kline,** R.A. Stearn, Inc.

P. Offshore Structures — Implementation of Reliability—Olav Furnes, Arne Sele, Det norske Veritas

Q. Semi-Probabilistic Approach to Design of Marine Structures — D. Faulkner, The University (Glasgow)

SESSION IX—Presiding Officer, **William M. Hannon,** American Bureau of Shipping; Assistant, **Paul R. Van Mater Jr.,** Band, Lavis Associates

R. Fatigue Criteria for Ship Structure Details — William H. Moose, University of Illinois

S. Application of Loading Prediction to Ship Structure Design: A Comparative Analysis of Methods — D. Liu, H.H. Chen, F. Lee, American Bureau of Shipping (ABS)

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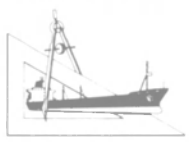

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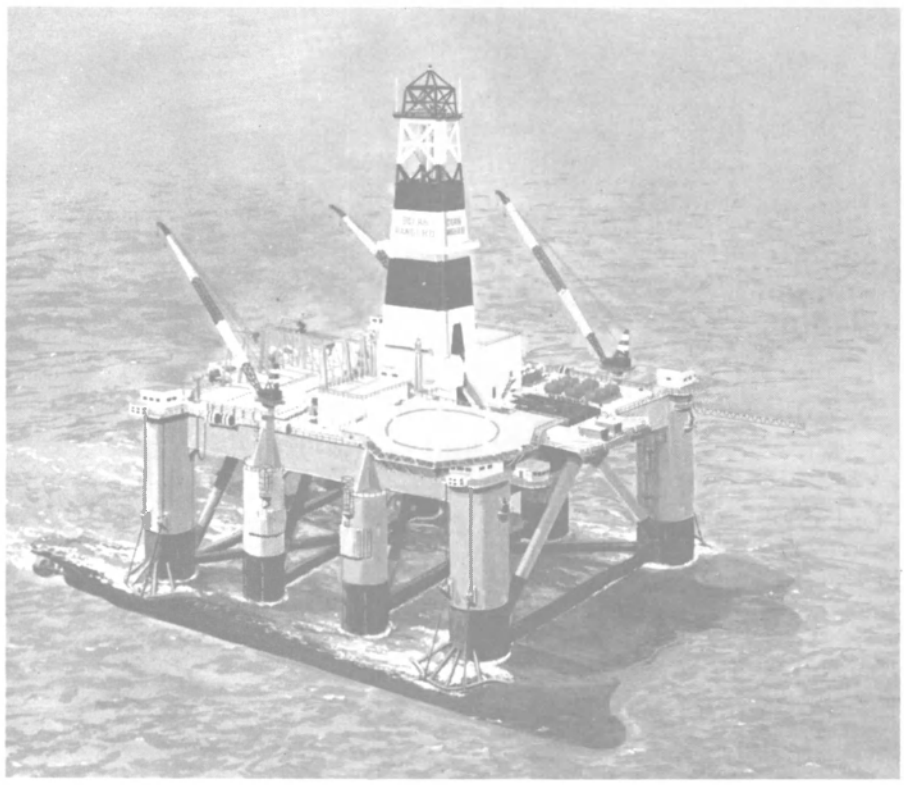
Construction Begins On New Super-Class Semisubmersible For ODECO

The Ocean Drilling & Exploration Company (ODECO) is adding a new dimension to its drilling fleet with the construction of a heavy-duty, fully winterized, self-propelled semisubmersible with huge deckload capacities, that will be capable of operating in the ice-infested waters of the Bering Sea or anywhere else in the world.

Construction of the rig began recently at Sumitomo Heavy Industries' Oppama Shipyard, located at the mouth of Tokyo Bay. Delivery is forecast for December 1982. The new semisubmersible will be the 18th semi, and the 41st unit in the ODECO drilling fleet.

Patterned after but slightly smaller than the famed Ocean Ranger, ODECO has endeavored to improve the 'state-of-the-art' of semisubmersibles in all respects. The Ocean Ranger II, with a fully redundant propulsion system and streamlined lower pontoons, is highly mobile and truly self-propelled. Major improvements in the motion response characteristics have been confirmed in the model basin and are shown to be very favorable, company officials report. The Ocean Ranger II has been designed to continue in its operating mode in up to 100 knot winds with 4,500 metric tons of variable deckload without reducing deckload or deballasting. All drilling and subsea systems have been critically evaluated against the many rig-years of ODECO experience, and incorporate the most modern rugged equipment available to efficiently drill the deepest of exploratory programs in remote and extremely hostile offshore environments.

This vessel will be a 390-foot long, 226-foot wide, twin-hull design with a 12,450-horsepower propulsion system. The hull consists of two ship-shape parallel pontoons which will enable a calm water transit speed of 12 knots. The Ocean Ranger II will be a U.S.-flag vessel, fully certified by the Coast Guard and classed AMS + A-1 by the American Bureau of Shipping for unrestricted worldwide ocean service. The rig is designed to simultaneously withstand 100-knot winds, a 3-knot current and 110-foot waves. The helicopter deck will be rated



The Ocean Ranger II in an artist's rendition. The mobile drilling units will feature ship-shaped pontoons, ice-strengthened columns, and weather protection of drill floor and derrick.

PROFESSIONAL

continued

for a Boeing "Chinook" helicopter.

The Ocean Ranger II will accommodate 102 persons in its living quarters, and will drill at the 80-foot draft in water depths up to 1,500 feet. The basic mooring equipment consists of eight windlass units equipped with 4,500 feet of 3.25-inch oil rig quality chain per windlass. Drilling depth capability will be 25,000 feet.

Three revolving cranes service the main deck and peripheral areas. The rig also will have a riser handling system to eliminate the need for cranes to handle the marine riser in extreme wind and sea conditions.

The drilling equipment includes a derrick rated at 1,400,000 pounds static hook load, a four-speed, 2,400-hp drawworks assembly, a 49.5-inch, 1,200-hp rotary, and two Ceco FB-1600 mud pumps, each driven by a 1,600-hp dc motor. Power will be supplied by six turbocharged 16-cylinder Alco 16-251 (2,950 continuous bhp) main engines with one auxiliary Cummins VTA-1710-GS engine.

The Ocean Ranger II is extensively winterized, and all equipment and systems are designed for service temperatures down to −35 degrees centigrade. The derrick will be fully enclosed to 115 feet above the heated drill floor, permitting all-weather operations.

GECC Appoints Blake As Exec. Vice President

General Electric Credit Corporation's (GECC) board of directors has appointed **Norman P. Blake Jr.** as executive vice president, financing operations. He will be headquartered in Stamford, Conn.

Norman P. Blake Jr.

In his new post, **Mr. Blake** will manage the financing operations for GECC's three major components, the commercial and industrial financing division, the consumer financing division, and the real estate financing operations. **Mr. Blake** will also oversee and manage GECC's support departments such as the marketing, communications, and the human resources.

A wholly owned subsidiary of the General Electric Company, GECC ranks third among the nation's independent finance companies, with a portfolio valued at nearly $10 billion.

Port Of Portland Approves $60-Million Coal Terminal

Pacific Coal Corp. and the Port of Portland have agreed to develop a $60-million coal export terminal, the port announced recently.

The terminal, to be built by Pacific Coal on port property, will handle 10 million tons of coal annually. It is expected to be operating in January 1984.

The facility is the third such project announced by a U.S. West Coast port in recent months. The Port of Long Beach is building a terminal that eventually will serve 30 million tons of coal, and the Port of Kalama, Wash., about 40 miles downriver from Portland, has signed an agreement with Pacific Resources Inc. to build a terminal handling up to 15 million tons per year.

Pacific Coal will build on a 100-acre site in the port's Rivergate Industrial District. About 80 percent of the cost will be financed by industrial revenue bonds issued by the port with Pacific Coal responsible for debt repayment.

Pacific Coal will lease the land for about $750,000 annually on a 25-year lease, with options to renew. The port will also collect a fee based on the tonnage moved through the terminal.

B&W Alpha Diesel Names Midland As U.S. Reps For Inland Waterways

Robert Stout, executive vice president, Midland Enterprises Inc., announced recently that an agreement has been reached with B&W Alpha Diesel, Frederikshavn, Denmark, a division of Burmeister & Wain Diesel of Copenhagen, to act as sales and service agents on the U.S. inland waterways for their full line of marine diesel power plants.

Under terms of the agreement, Midland will establish a new subsidiary, Inland Water Propulsion Systems, Inc., to represent B&W Alpha's marine propulsion plants, engine, gearbox, controllable pitch propellers, remote controls and monitoring equipment, starting air receivers, exhaust silencers, and propeller nozzles. A full range of four-cycle engines is available from five cylinder with 775 horsepower at 825 rpm per engine to 18 cylinders with 4,705 horsepower at 775 rpm per engine.

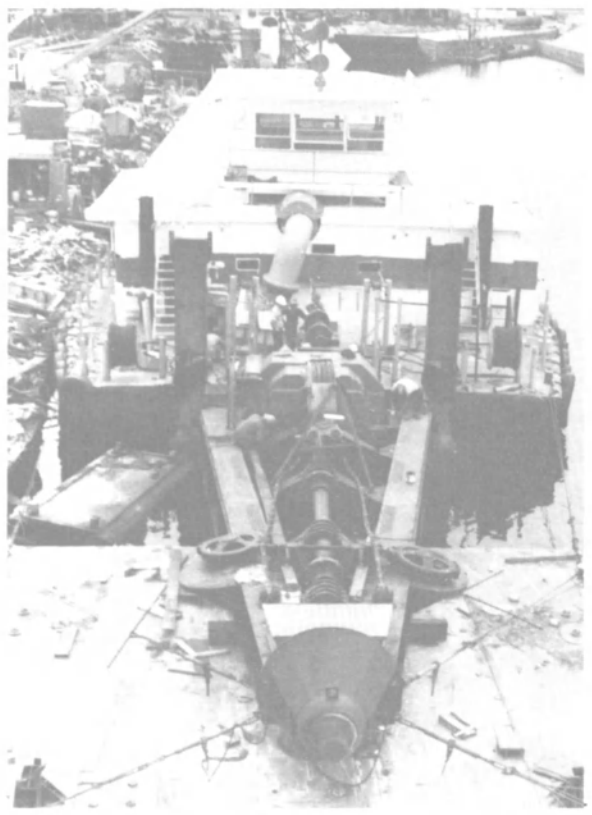
The Ohio River Company, another Midland affiliated company, has installed B&W Alpha diesel engines in two towboats under construction and in two new boats now being designed.

The Ohio River Company anticipates a significant operational cost saving because of the fuel efficiency the B&W Alpha engines will deliver. The engines can burn a blended 2100 sec. (SRI) fuel. The engines also can utilize controllable pitch propellers which promote fuel efficiency as the propellers adjust to the optimum pitch for the load conditions and for the best utilization of the propulsion power.

At the signing of the sales and service agreement for U.S. inland waterways between Midland Enterprises Inc. and B&W Alpha Diesel were, left to right: (standing) **Lawrence E. Scholl**, general counsel and vice president of Midland; **Carl E. Schmidt**, sales manager, B&W Alpha Diesel; and **Kenneth Sigman**, manager of boat maintenance for Midland. Seated are left, **Robert Stout**, executive vice president of Midland, and **B. Dam-Hansen**, sales director of B&W Alpha.

The agreement between B&W Alpha Diesel and Inland Water Propulsion enables the Danish manufacturer to gain representation over the entire U.S. inland waterway system.

Cutter Suction Dredge Modified For Work On Tenn-Tom Waterway



Bean Dredging Corporation, New Orleans, La., has completed modifications to the Dredge "32" (shown above), in preparation for its move to a worksite near Columbus, Miss. on the Tennessee-Tombigbee waterway project.

The modification, which was done at the company's France Road shipyard, will enable the dredge to pass beneath a low bridge on the Tombigbee River near Columbus. The dredge will have a 17-foot clearance.

The "32" is a 27-inch hydraulic cutterhead suction dredge which will move about 10-million cubic yards during the one-year, $15.5-million project.

The dredge's wheelhouse was removed and refurbished to conform to 1981 standards. The crew accommodations were constructed

in modern, soundproof, portable quarters which will increase the crew's comfort, since noise and vibration of engines and pumps will be minimized.

Other modifications include removing the "A" frames or gantries which lift the cutter ladder on the bow and the spud poles on the aft end. The "A" frames will be restored once the dredge is in position at the site where the "32" will be connected to an idler or spud barge. The spud barge is equipped with a tracking spud pole arrangement, which is moved hydraulically over a distance of about 17 feet.

The pumping horsepower of the "32" has been increased by about 1,000 hp through the addition of a pump supplied by Mobile Pulley, and the dredge's digging capacity was increased almost 50 percent by stepping up the cutter power from 800 hp to 1,200 hp.

Product Carrier Philadelphia Sun Joins Sun Transport Fleet

The petroleum product carrier M/V Philadelphia Sun (shown above) has left Sun Ship Inc., Chester, Pa., and joined its sister ship, the New York Sun, in the Sun Transport U.S.-flag tanker fleet, a considerable portion of which is assigned to transporting petroleum products to the Delaware Valley region of Pennsylvania.

The Philadelphia Sun will also be assigned various other U.S. intracoastal trade routes. The two ships increase the petroleum-carrying capacity of the Sun fleet by approximately 25 percent.

Built for an affiliated company, Sun Transport, the Philadelphia Sun has a cargo carrying capacity of 34,400 tons and an overall hull length of 612 feet. Its keel was laid in March 1978 and it was launched in July 1980. The vessel is capable of carrying six different types of refined petroleum products at once, including gasoline, kerosene, jet fuel, heating oil and naptha.

Designed to meet or exceed all the maritime regulations in effect when construction began, the ship features a segregated ballast system and a sewage storage and treatment system.

Advanced safety features include automation which permits control of engine speed and direction from the bridge, a collision avoidance system, a satellite navigation system designed to enable the crew to pinpoint exact position at any time, and a weather facsimile system, providing up-to-the-minute weather forecasts.

Todd To Move 'Frisco Drydock, $40-Million Syncrolift Being Built For Los Angeles Yard

Todd Shipyards Corp., San Francisco, Calif., said it plans to move one of the drydocks from its San Francisco yard to its Seattle facility in February or March.

The company will transfer a floating drydock that has a lift of 40,000 tons, leaving San Francisco with a drydock that can handle 9,000 tons.

Todd's 'Frisco yard mainly handles ship repair and conversions, while the Seattle yard has a building backlog that includes some 13 Navy frigates.

Clifford E. Jones, Todd vice president of resources, said construction has also begun on a new Syncrolift for the Los Angeles yard. The Todd Syncrolift, from Pearlson Engineering Co., Miami, Fla., will be the largest shiplift in the world. It will have a lifting platform 655 feet long by 106 feet wide, and will be able to handle vessels up to 48,000 dwt. In addition to the Syncrolift platform, the facility will include an onshore transfer area which will accommodate five maximum sized vessels simultaneously.

This $40-million facility will be a flat platform with an elevator that can be lowered into the water. Ships are floated over the elevator and lifted in a cradle, which can be moved on rollers or by another transfer system.

Todd said the main advantage of the design is that five or six ships, depending on size, can be served at once, compared to traditional drydocks that handle one at a time.

Krupp Completes Two Of Four Pusher Tugs For Nigeria

Krupp Ruhrorter Schiffswerft, Duisberg, West Germany, has completed two of four pusher tugs ordered by the Central Water Transportation Company Ltd., Onitsha, Nigeria.

The new tugs, Lau and Baro, were shipped recently from Rotterdam to Nigeria on the deck of an oceangoing vessel.

The tug christened Ajaokuta by the wife of the chairman of the CWTC, Chief **Obande**, at its recent launching in mid-August, will be completed in October. The fourth vessel, the Numan, will be completed in December. Both will be shipped to Nigeria at the end of December. All four vessels will be used on the Niger River and in the Nigerian delta regions.

In early 1982, the Central Water Transportation Company of Nigeria will put four new Krupp pusher tugs into service on the Niger and in the Nigerian delta regions. Shown above are the first two of these tugs, the Lau and Baro.

The vessels were built to Germanische Lloyd class, Class GL + 100 A5 I pusher tug + MC 1. The specifications are: length overall, 28 meters (about 92 feet); molded breadth, 11.15 meters (37 feet); loaded draft, 1.40 meters (about 4½ feet); fuel capacity 90 t; and speed, approximately 16 km/h.

Each boat can push a maximum of six barges each approximately 750 dwt.

The propulsion machinery consists of two main engines each rated at 336 kw at 1,800 rpm for the Lau and Baro, and 672 kw at 1,800 rpm for the tugs being completed, two reversing reduction gears, two oil-lubricated line shaftings, two four-bladed propellers, two propeller nozzles and two rudders with quoin. The tubular coolers for cooling the main engines are accommodated in the sea chest. Two air-cooled diesel generators, each rated at 40 kva, supply the entire electrical system.

First Jackup Unit For U.S. Completed By Hitachi Zosen

A self-elevating offshore drilling unit for Offshore Investments Limited of the Hunt Group in the U.S. has been completed at the Osaka Works (Sakai) of Hitachi Zosen. After delivery, the cantilever-type rig named Prober was towed recently to Indonesia.

The rig will be operated by Penrod Drilling Company, one of the world's leading oil drilling companies.

Prober is the first of five oil rigs — four jackup rigs and one semisubmersible rig — to be constructed for the Hunt Group by Hitachi Zosen. The second rig will be completed in November 1981.

The Prober is the second Drill Hope C-250 to be completed by Hitachi Zosen and the first constructed by Hitachi in compliance with U.S. Coast Guard regulations. A special feature of the unit is a spud tank that is completely retractable within the platform. There is no projection from the bottom of the rig which facilitates towing in shallow waters and easy transportation by barge.

Specifications: main platform length — 59 meters (about 194 feet); breadth — 53 meters (174 feet); depth — 6.5 meters (21 feet); number of legs—3; leg length—108.2 meters (355 feet); maximum operating depth — 75 meters (246 feet); maximum drilling depth — 7,620 meters (25,000 feet); classification — ABS.

Two New Appointments Announced At Ingram

John W. Sibal has been named manager of planning and economics for Ingram Corporation, New Orleans, La., it was announced recently by **F.B. Ingram**, chairman. In his new post, Mr. **Sibal** will be responsible for new project evaluations as well as the analysis of general economic and industry trends.

John W. Sibal

J. Luis Banos

Mr. **Sibal** was previously the company's director of government affairs in Washington, D.C. Mr. **Ingram** also announced that **J. Luis Banos** was named to replace Mr. **Sibal** in Washington. Mr. **Banos** was previously the company's energy regulatory coordinator.

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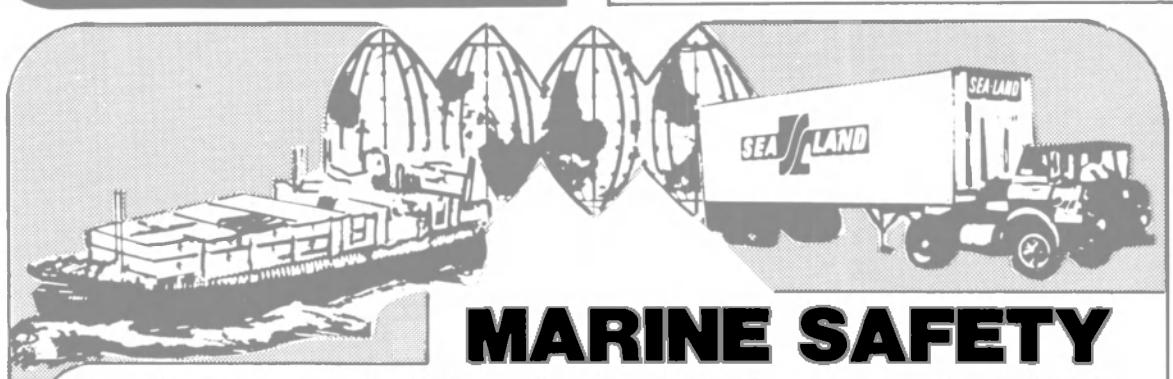

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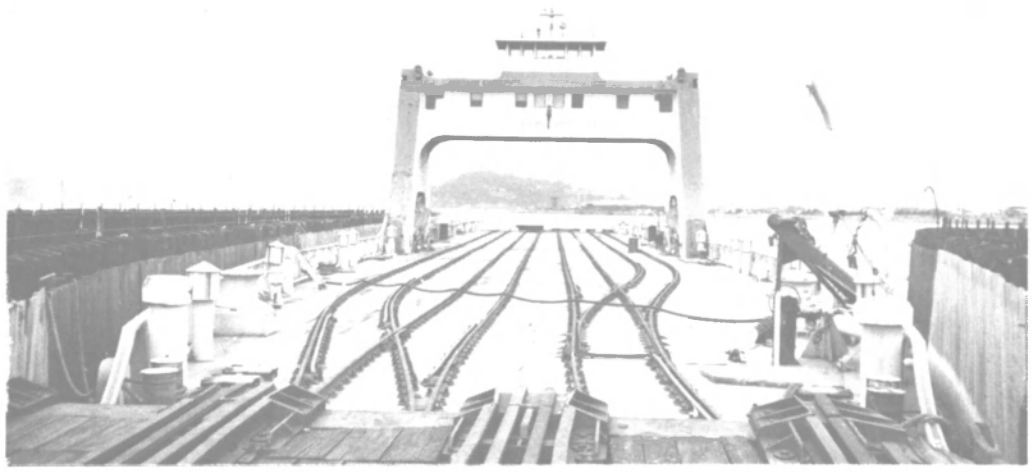

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EASTERN DIVISION

UNITED STATES OF AMERICA, Plaintiff, v. THE GREAT LAKES TOWING COMPANY, ET AL., Defendants.	CIVIL ACTION IN EQUITY NUMBER 8003 June 15, 1914 EQUITY NUMBER 72 (February 13, 1915)

All Interested Persons Please Take Notice That:

The Plaintiff, the United States of America, has joined Defendant, The Great Lakes Towing Company (Great Lakes), in applying to the court to modify and terminate the final decree in this matter entered on February 13, 1915. All documents filed with the court in this matter are available for inspection and copying at the office of the Clerk, United States District Court, Northern District of Ohio, United States Courthouse Cleveland, Ohio 44114, and at the Antitrust Division, United States Department of Justice, Room 7416, 10th Street and Constitution Avenue, N.W., Washington D.C. 20530. Interested persons should address comments on this application to the Honorable William F. Baxter, Assistant Attorney General, Antitrust Division, United States Department of Justice, 10th Street and Constitution Avenue, N.W., Washington D.C. 20530, c/o John L. Wilson, Esquire. Comments must be submitted within thirty (30) days of the date of publication of this notice in Maritime Reporter and Engineering News. Copies of all comments so submitted and of all further papers filed with the court will be available for inspection and copying in the office of the Clerk and at the United States Department of Justice in room 7416.

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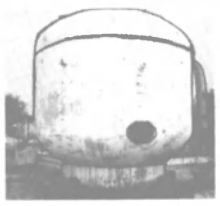

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INVITATION FOR PROJECT STATEMENT OF INTEREST

SOUTHWESTERN FERRY REPLACEMENT, DESIGN PHASE

The State of Alaska, Department of Transportation and Public Facilities, Harbor Design and Construction, intends to negotiate a contract with a Naval Architect-Marine Engineering firm. The work to be performed involves a replacement vessel for the Alaska ferry M/V Tustumena (296' LOA O.N. 295172). This will include — the design; preparation of plans, specifications and estimate; regulatory agency liaison and as yet undefined construction phase services. The preconstruction work shall be completed within one year.

The Department has issued the **M/V TUSTUMENA Replacement Study**, which summarizes the recommendations of three naval architects; demographic, traffic, and climatic data; and the basic requirements set forth by the State. The replacement vessel shall have among its characteristics and capacities; berthing for 150; total persons allowed 450; 80 standard vehicles; 350' LOA; and 16 knot service speed.

Based on an evaluation of the "Project Statements of Interest", the 4 top ranked consultants will be asked to submit formal proposals followed by interviews. Evaluation and selection of consultants, Statement of Interest, proposal, and interview will be conducted by a Consultant Selection Committee in accordance with departmental policy and procedure.

Statements of Interest for this invitation must include "Project Statement of Interest" and Federal Standard forms 254 and 255 (Architect-Engineer related services). Project Statement of Interest forms and the M/V TUSTUMENA Replacement Study may be obtained by contacting:

Project Manager
C/O Alaska Marine Highway System
Pier 48
Seattle WA 98424
(206) 623-6850
Attn: John McGrath

Submittals must be received in ten (10) copies by 3:00 PM, Juneau Local Time, October 20, 1981 at the address below:
Harbor Design & Construction
Room 215, Island Center Building, Douglas, Alaska
Pouch Z, Juneau, Alaska 99811
RE: Southwestern Ferry Replacement (M/V TUSTUMENA)

The Department of Transportation and Public Facilities reserves the right to reject any and all submittals.

Robert W. Ward
Commissioner
Department of Transportation and Public Facilities

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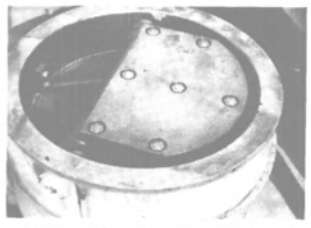

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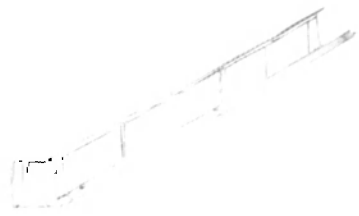

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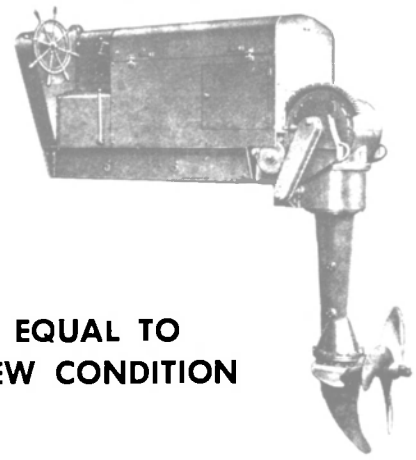

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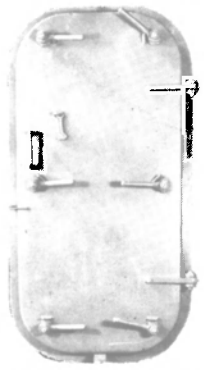

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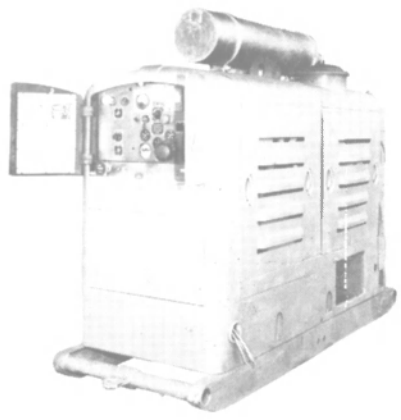

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THE BOSTON METALS COMPANY

313 E. Baltimore St. Baltimore, Md. 21202
Marine Warehouse (301) 752-1077
TWX: 710-234-1637

CAPTAINS CONFER — The Council of American Master Mariners recently heard Coast Guard Capt. **Rudy Sommers** describe to his civilian counterparts relationships between the Coast Guard and ship masters as they relate to U.S. Shipping Commissioners, recruitment of merchant marine officers and marine casualty reporting. Participants included Capts. **Mayer Armbrust** (left), California Maritime Academy, **Seth Hargrave**, Exxon USA, and San Francisco CAMM chapter president **Wallace Campbell** of the San Francisco Bar Pilots.

Retrofit World-Wide Tankers For COW At Sembawang Yard

Two World-Wide tankers, World Baroness (shown above) and World Cavalier, entered Sembawang Shipyard, Singapore, recently for installation of crude oil washing (COW) equipment to comply with MARPOL regulations.

A total of 199 COW machines were installed on both tankers, 112 units on the 232,496-dwt World Baroness and 87 units on the 268,337-dwt World Cavalier. These machines were connected to new piping and valves. In addition, a new eductor line was tapped from the existing line in the aft pumproom of both vessels and routed to the COW system. The Cavalier also had minor modifications made to her SBM arrangement, while the Baroness underwent a drydock survey.

BUYERS DIRECTORY

AIR CONDITIONING AND REFRIGERATION—REPAIR & INSTALLATION
Adrick Cooling Corporation, 30 B. Remington Blvd., Ronkonkoma, NY 11779
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
James D. Nall Co., Inc., 3195 NW 20th Street, Miami, FL 33142
York Division (Borg-Warner Corp.), P.O. Box 1592, York, PA 17405

ANODES—Cathodic Protection
Engelhard Industries Division, 2655 U.S. Route 22, Union, NJ 07083
Kaiser Aluminum & Chemical Corp., 300 Lakeside Dr., (Rm 2039KB), Oakland, CA 94643
Wilson Walton International Inc., 66 Hudson Street, Hoboken, NJ 07030

BEARINGS—Rubber, Metallic, Non-Metallic
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062
Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

BLASTING—Cleaning—Equipment
Aurand, 1270 Ellis Street, Cincinnati, OH 45223
Butterworth Systems Inc., 224 Park Ave., Florham Park, NJ 07932
Goff Corporation, One Pleasent Grove Rd., Seminole, OK 74868

BOILERS—Tube Cleaning
Clayton Manufacturing Company, 486 No. Temple City Blvd., El Monte, CA 91731
Combustion Engineering, Inc., Windsor, Connecticut 06095
A.B. Murray Company, Inc., P.O. Box 476, Elizabeth, NJ 07207

BROKERS
Aldenships, 2182 S.E. 17th Street, Fort Lauderdale, FL 33316
B.R.I. Coverage Corporation, 156 Williams Street, New York, NY 10038
Capt. Astad Company, Inc., P.O. Box 53434, New Orleans, La. 70153
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

BUNKERING SERVICE
Belcher Company, Inc., 8700 West Flagler, P.O. Box 525500, Miami, FL 33152
Gulf Oil Trading Co., 1290 Ave. of the Americas, N.Y., N.Y. 10019

CARGO TRANSFER & ACCESS EQUIPMENT
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016

CHAINS
Neptunia, Via Giovanni da Verrazzano, 12 16 165 Genova, Italy

CHOCKING SYSTEMS
Palmer Products Inc., P.O. Box 8, Worcester, PA 19490
Philadelphia Resins Corp., 20 Commerce Drive, Montgomeryville, Pa. 18936

CONTAINERS—Cargo Container Handling
Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501

CONTROL SYSTEMS—Monitoring
Arnessen Marine Systems, Inc., One Battery Plaza, New York, NY 10004
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
Megasystems, Inc., 1075 N.W. 58th Street, Boca Raton, FL 33431
National Marine Service, Inc., 1750 Brentwood Blvd., St. Louis, MO 63144
Pan American Systems Corporation, P.O. Drawer 400, Belle Chasse, LA 70037
Sperry Marine Systems Div., Charlottesville, Va.. 22901, Division of Sperry Rand Corp.
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06052

COUPLINGS
Bird-Johnson Co., 110 Norfolk St., Walpole, MA 02081

CRANES—HOISTS—DERRICKS—WHIRLEYS
American Hoist & Derrick Company (AMHoist), St. Paul, MN 55107
Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081
M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07037
National Supply Company, 1455 West Loop South, Houston, TX 77027
J. D. Neuhaus, Witten-Heven, Hebezeuge, D 5810 Witten-Heven, West Germany
Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501

DECK MACHINERY—Cargo Handling Equipment
Markey Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134
Navire Cargo Gear (SEA) Pte. Ltd., 9th Floor Orchard Towers, Orchard Road, Singapore 0923

DIESEL ACCESSORIES—CYLINDER LINERS
B & W Marine Service, One State Street Plaza, New York, N.Y. 10004
General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, Massachusetts 02360
Golten Marine Company, Inc., 162 Van Brunt Street, Brooklyn, NY 11231
Twin Disc, Inc., 1328 Racine Street, Racine, WI 53403

ELECTRICAL EQUIPMENT
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Federal Pacific Electric Company, P.O. Box 1800, Somerville, NJ 08876
Marine Safe Electronics of Canada Ltd., 101 Jardin Dr., Suite 24, Concord, Ontario, Canada L4K 1B6
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

EMULSIFICATION SYSTEMS
Hoffert Manufacturing Company, Inc., 1700 East Church Street, Jacksonville, FL 32202

EQUIPMENT—Marine
ATCO Marine Corp., 603 Dean Street, Brooklyn, NY 11238
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014
Conhagen/USMP Company, Inc., 4475 South Clinton Ave., South Plainfield, NJ 07080
Consafe Inc., P.O. Box 40339, Houston, TX 77040
Duraline, 75 Hoffman Lane, Central Islip, NY 11722
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550
J. H. Menge & Company, Inc., P. O. Box 23602, New Orleans, La.
John P. Nissen, Jr. Company, Glenside, PA 19038
Rockwell International, Power Tool Division, 400 N. Lexington Ave., Pittsburgh, PA 15208
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080
Schwepper Beschlag GmbH, Postfach 101110, 5620 Velbert 1, West Germany
Stal Laval Inc., 525 Executive Blvd., Elmsford, NY 10523
Sudoimport, 5 Kolyaevskaya, Moscow K-6, USSR
Unitor Ships Service A S, Mastemyr, 1410 Kolbotn, Norway
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186
Xorbox, Division of Greene & Kellogg, Inc., 290 Creekside Dr., Tonawando, NY 14150

EVAPORATORS
Aqua-Chem Inc., P.O. Box 421, Milwaukee, WI 53201
Riley-Beaird, Inc., P.O. Box 1115, Shreveport, La. 71130

EXPANDED METALS — METALS
Fibergrate Corporation, P.O. Box 344610, Dallas, TX 75234
Lukens Steel Company, Coatesville, PA 19320
Millard Controlled Metals, 5 Louise Drive, Ivyland, PA 18974

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

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

FINANCING—Leasing
Continental Illinois National Bank, 231 S. LaSalle, Chicago, IL 60693
Kidder, Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005
Warburg Paribas Becker, Inc., 2 First National Plaza, Chicago, Ill. 60670

FUEL OIL ADDITIVES—Analysis & Combustion Testing
Rolfite Products Inc., 300 Broad Street, Stamford, CT 06901

FURNITURE
Bailey Joiner Co., Inc., 74 Sullivan Street, Brooklyn, N.Y. 11231
Comfort-Mate, Inc., 7988 NW 56th Street, Miami, FL 33166

GALLEY EQUIPMENT
Kiefer Corporation, 2202 W. Clybourn, Milwaukee, WI 53233

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

HATCH & DECK COVERS—Chain Pipe
Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207
Lockstad Company, Inc., R D 2 Burnett Road, Mendham, NJ 07945
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
E. Mock & Sons, Inc., 20 Vesey Street, New York, NY 10017

HULL CLEANING
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932
Phosmarin Equipment, 21, Boulevard de Paris, 13002 Marseille, France
Seaward Marine Services, Inc., 6269 Leesburg Pike, Falls Church, VA 22044
Sub Enterprises, Inc., P.O. Box 16531, Irvine, CA 92713

HYDRAULICS
Fluid Technology, Inc., 10626 Phillips Highway, Jacksonville, FL 32224
Hydranautics, 6338 Lindmar Drive, Goleta, CA 93017
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229

INERT GAS—Generators—Systems
ATCO Marine Corporation, 603 Dean St., Brooklyn, NY 11238
Camar Corporation, P.O. Box 460, Worcester, MA 01613
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039
Fredriksstad mek. Verksted, N. American Agents, American United Marine Corp., 575 Madison Ave., New York, N.Y. 10022
Peabody Holmes Ltd., 17-27 Garratt Lane, London SW 18 4BY

INSULATION—Cloth, Fiberglas
Bailey Carpenter & Insulation Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231

INSURANCE
Adams & Porter, 1819 St. James Place, Houston, Texas 77027
Adams & Porter, 1 World Trade Center, Suite 8433, New York, N.Y. 10048
Alexander & Alexander, Inc., 1185 Ave. of the Americas, New York, N.Y. 10036
B.R.I. Coverage Corporation, 156 Williams St., New York, NY 10038
Midland Insurance Co., 160 Water St., New York, N.Y. 10038

JOINER—Watertight Doors—Paneling
Masonite Commercial Division, Dover, OH 44622
Walz & Krenzer, Inc., 400 Trabold Road, Rochester, NY 14624

KEEL COOLERS
R.W. Fernstrum & Co., 1716 Eleventh Ave., Menominee, MI 49858
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062

LIFEBOATS & DAVITS
ATCO Marine Corporation, 603 Dean Street, Brooklyn, NY 11238
Schat Davit Corporation, 226 West Park Place, Newark, DE 19711

LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights
Browning Marine, Inc., (Aqua Signal), P.O. Box 806G, St. Charles, IL 60174
The Guest Corporation, 17 Culbro Drive, West Hartford, CT 06110
Oceanic Electrical Mfg. Co., 157 Perry Street, New York, N.Y. 10014
Oreck Corp., 100 Plantation Rd., New Orleans, LA 70123
Perko Inc., P.O. Box 6400D, Miami, Florida 33164
Port Electric Supply Corp., 157 Perry Street, New York, N.Y. 10014

MACHINE TOOLS
Republic-Lagun Machine Tool Co., 1000 E. Carson St., Carson, CA 90749

MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING
General Electric Company — Bldg. 2, Rm 216, Schenectady, N.Y. 12345
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080

MOORING SYSTEMS
Baldt Incorporated, P.O. Box 350, Chester, PA 19016
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS
Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Highway (Suite 1300), Arlington, VA 22202
Agemar, Ave. 17 No. 108-129, P.O. Box 1465, Maracaibo, Venezuela
All Points Associates, Inc., RD #1, Box 3309, Monroeville, OH 44847
American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015
J.L. Bludworth, P.O. Box 2441, Corpus Christi, TX 78403
Jacksonville, Florida 32211
Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130
C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd.,
CTS & Associates, 11320 S.W. 108 Court, Miami, Fla. 33176
CADCOM, 107 Ridgely Ave., Annapolis, MD 21401
Childs Engineering Corp., Box 333, Medfield, Mass. 02052
John P. Colletti & Associates, P.O. Box 13378, Pittsburgh, PA 15243
Columbia-Sentinel Engineers Western, Inc., P.O. Box 21542, Seattle, WA 98111
Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026
Crane Consultants Inc., 15301 1st Ave., So. Seattle, Washington 98148
C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048
Norman N. DeJong & Associates, Inc., 1734 Emerson St., Jacksonville, Fla. 32207
Design Associates Inc., 14360 Chef Menteur Highway, New Orleans, LA 70129
Designers & Planners, Inc., 2341 Jefferson Davis Hwy., Suite 1100, Century Bldg., Arlington, VA 22202
Donhaiser Marine, Inc., 11511 Katy Freeway, Houston, TX 77079
Francis C. Ducote, P.E., P.O. Box 644, Kenner, LA 70063
Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034
Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050
Friede and Goldman, Ltd., 225 Baronne St., New Orleans, La. 70112
Giannotti & Associates, Inc., 703 Giddings Ave., Suite U-3, Annapolis, MD 21401
Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006
John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110
The Glosten Associates, Inc., 610 Colman Bldg., 811 First Ave., Seattle, WA 98104
Phillip Gresser Associates, Ltd., 3250 South Ocean Blvd., Palm Beach, FL 33480
Morris Guralnick Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107
Hampton Roads Engineering, Inc., 119 E. Little Creek Rd., Norfolk, VA 23505
J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048
Hoffman Maritime Consultants Inc., 9 Glen Head Road, Glen Head, NY 11545
Hydronautics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810
Jantzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227
James S. Krogen & Co., Inc., 3333 Rice St., Miami, Fla. 33133
Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460
Lucander Designs, P.O. Box 711, San Perlita, TX 78590
Alan C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063
John J. McMullen Associates, Inc., 1 World Trade Center, New York, N.Y. 10048
MacLear & Harris, Inc., 28 West 44 Street, New York, N.Y. 10036
Marine Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114
Marine Design Inc., 401 Broad Hollow Road, Rte. 110, Melville, N.Y. 11746
Marine Technical Associates, Inc., 195 Paterson Avenue, Little Falls, NJ 07424
Maritime Service Company, 1357 Rosecrans St., Suite B, San Diego, CA 92106
Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225
Mechanical Resources Inc., 191 Cambridge Avenue, Jersey City, N.J. 07307
George E. Meese, 194 Acton Rd., Annapolis, Md. 21403
Metritape, Inc., 33 Bradford Street, Concord, MA 01742
NKF Engineering Assoc., Inc., 8150 Leesburg Pike, Vienna, VA 22202
Nelson & Associates, Inc., 1405 N.W. 167th Street, Miami, FL 33169
Nickum & Spaulding Associates, Inc., 911 Western Ave., Seattle, WA 98104
Captain Conrad P. Nilsen, 66 Beverly Road, Bloomfield, NJ 07003
Norgaard and Clark, 114 Sansome St., San Francisco, CA 94104
Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114
Offshore Power Systems, 8000 Arlington Expressway, Jacksonville, FL 32211
Oromar International Enterprises, Inc., P.O. Box 13069, Port Everglades, FL 33316
PRC Guralnick, 5252 Balboa Ave., San Diego, CA 92117
Pacific Industries Inc., 1440 Canal Street, Suite 1915, New Orleans, LA 70112
Pearlson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33156
S.L. Petchul, Inc., 1380 SW 57th Ave., Fort Lauderdale, Fla. 33317
Pilotage Consultants, Inc., P.O. Box 3, Atlantic Highlands, NJ 07716
M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013 and 657 Mission St., San Francisco, Calif.
Sargent & Herkes, Inc., 611 Gravier St., New Orleans, La. 70130
Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316
Seacor Systems Engineering Associates, Corp., P.O. Box 2030, 19 Cherry Hill Industrial Park, Perina Blvd., Cherry Hill, NJ 08003
Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426
George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007
T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2
R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235
Robert L. Stevens Associates, Inc., 654 Beacon Street, Boston, MA 02215
Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963
Thames Engineering Consultants Inc., P.O. Box 589, New London, Ct. 06320
Timsco, 622 Azalea Road, Mobile, AL 36609
Townsend Marine Consultants, 18 Church Street, Georgetown, CT 06829
Wadam Wartsila Helsinki Shipyard, P.O. Box 132, SF-00151 Helsinki 15, Finland
Wesley D. Wheeler Assoc., Ltd., 104 E. 40th St., Suite 206, New York, NY 10016
James Weisbeck, 240 O'Kell Street, Buffalo, NY 14220
Thomas B. Wilson, 920 North Avalon Blvd., Wilmington, CA 90744
Wind Ship Development Corporation, 690 Main Street, Norwell, MA 02061
Wink Incorporated, 8020 Mayo Blvd., New Orleans, LA 70126
XPLO Corporation, 229 Fifth Street, Gretna, LA 70053

NAVIGATION & COMMUNICATIONS EQUIPMENT
AAT Communications Corporation, 1854 Hylan Blvd., New York, NY 10305
American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526
Apelco Marine Electronics, Division of Raytheon, 676 Island Pond Rd., Manchester, NH 03103
Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024
DEBEG Marine, Inc., 10 Manor Parkway, Salem, NH 03079
Electro-Nav Inc., 840 Bond Street, Elizabeth, NJ 07201
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080
Griffith Marine Navigation, Inc., 134 North Avenue, New Rochelle, NY 10801
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McConn Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631
ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611
Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780
Iotron Corp., 5 Alfred Circle, Bedford, MA 01730
Kongsberg North America Inc., 135 Fort Lee Road, Leonia, NJ 07605
Kongsberg Vapenfabrikk, Norcontrol Division, P.O. Box 145, Horten 3191, Norway
Krupp Atlas-Elektronik, 241 Erie Street, Jersey City, NJ 07302
Magnavox Navigation Systems, 2829 Maricopa Street, Torrance, CA 90503
Maritel, Inc., 139 Old Solomon's Island Road, Annapolis, MD 21401
Nov-Com, Inc., 711 Grand Blvd., Deer Park, NY 11729

Navidyne Corp., 11824 Fishing Point Drive, Newport News, VA 23606
Navigation Communications Systems, Inc., 20100 Plummer Street, Chatsworth, CA 91311
North American Philips Communication Corp., 55 Knights Bridge Road, Piscataway, NJ 08854
RCA Service Co., Building 204-2, Camden, N.J. 08101
Racal-Decca Marine, Inc., P.O. Box G, #1 Commerce Blvd., Palm Coast, FL 32037
Racal-Decca Marine, Inc., 4200 23rd Avenue West, Seattle, WA 98199
Radar Devices, Inc., 2955 Merced Street, San Leandro, CA 94577
Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103
Raytheon Ocean Systems Company, Westminster Park, Risho Avenue, East Providence, RI 02914
Raytheon Service Co., 103 Roesler Rd., Glen Burnie, MD 21061
Simrad Inc., 1 Labriola Court, Armonk, N.Y. 10504
Southern Marine Research, Inc., 1401 N.W. 89th Court, Miami, FL 33172
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721

OILS—Marine—Additives
B. P. Marine North America Trading, Plaza 9, 900 Route 9, Woodbridge, NJ 07095
Ferrous Corporation, P.O. Box 1764, Bellevue, WA 98009
Gulf Oil Company—U.S. (Domestic Oils), 909 Fannin Street, Houston, TX 77001
Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
Houston Marine Services, Inc., 505 Atrium One, 11811 1-10 East, Houston, TX 77029
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Mobil Oil Corporation, 150 East 42nd St., New York, N.Y. 10017
Texaco, Inc. (International Marine), 135 East 42nd St., N.Y., N.Y. 10017

OIL WATER SEPARATORS
Alfa-Laval, Inc., 2115 Linwood Avenue, Ft. Lee, NJ 07024
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932
National Marine Service, Inc., 1750 Brentwood Blvd., St. Louis, MO 63144
Sigma Treatment Systems, Merry Meadows, RD 1 Box 70, Chester Springs, PA 19425

PAINTS—COATINGS—CORROSION CONTROL
American Abrasive Metals, 460 Coit Street, Irvington, NJ 07111
Ameron, 4700 Ramona Blvd., Monterey Park, CA 91754
"CONSOL" manufactured by Hanline Bros., Inc., 1400 Warner St., Baltimore, MD 21230
Devoe Marine Coatings Co., P.O. Box 7600 Louisville, KY 40207
E.I. Dupont De Nemours & Co., Inc., Nemours Bldg. Rm. N-2504-2, Wilmington, DE 19898
Eureka Chemical Company, 234 Lawrence Ave., So. San Francisco, CA 94080
Henkel Corporation, 4620 West 77th Street, Minneapolis, MN 55435
International Paint Co., 17 Battery Place North, Suite 1150, New York, N.Y. 10004
Jotun-Baltimore Copper Paint Co., 840 Key Highway, Baltimore, MD 21230
Mobay Chemical Corporation, Plastics & Coatings Div., Pittsburgh, PA 15205
Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O. Box 250, Edison, N.J. 03817
Palmer Products Inc., P.O. Box 8, Worcester, PA 19490
Selby, Battersby & Company, 5220 Whiby Avenue, Philadelphia, PA 19143

PETROLEUM SUPPLIES
Houston Marine Services, Inc., 505 Atrium One, 11811 1-10 East, Houston, TX 77029
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002

PIPE-HOSE—Cargo Transfer, Clamps, Couplings, Coatings
Camlock Flange Sales Corp., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
CUNICO Corp., Cooney Pipe & Copper Works Div., 214 N. Hawaiian Ave., Wilmington, CA 90748
Hydro-Craft, Inc., 4223 Edgeland, Royal Oak, Mich. 48073
Kubota Ltd., 2-47, Shikit Suhigashi 1-Chome, Naniwa-Ku, Osaka 556-91, Japan
Penco Division Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Sanchem, Inc., 1600 South Canal Street, Chicago, IL 60616
Tioga Pipe & Supply Company, 2450 Wheatsheaf Lane, Philadelphia, PA 19137

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

PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines
Alco Power Inc., 100 Orchard St., Auburn, N.Y. 13021
Armco Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45043
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081
Burmeister & Wain Alpha Diesel AS, DK-1400 Copenhagen K, Denmark
Centrico, Inc., 100 Fairway Court, Northvale, NJ 07647
Colt Industries' Fairbanks Morse Engine Division, Beloit, Wisc. 53511
Combustion Engineering, Inc., Windsor, Connecticut 06095
General Electric Co., Diesel Power Products, 2901 E. Lake Rd., Erie, PA 16531
Kawasaki Heavy Industries, Ltd., 2-4-1 Hamamtsu-cho, Minato-ku, Tokyo, Japan
MTU of North America, Inc., 10450 Corporate Drive, Sugar Land, TX 77478
Maritime Industries, Ltd., 6307 Laurel St., Burnaby, B.C. Canada V5B 3B3
Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507
Omnithruster Inc., 15418 Cornet Ave., Santa Fe Springs, CA 90670
Oosterhuis Industries, Inc. (Marine Engineering, Inc.), P.O. Box 30587, New Orleans, LA 70190
P.J. Plishner Marine, 2 Lake Avenue Ext., Danbury, CT 06810
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
Propulsion Systems Inc., 21213 76th Ave., So., Kent, WA 98031
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166
Skinner Engine Company, P.O. Box 1149, Erie, PA 16512
Steamco Corporation, 1020 East 8th Street, Jacksonville, FL 32206
Tacoma Boat Co./Escher Wyss, 1840 Marine View Dr., Tacoma, WA 98422
Transamerica DeLaval Inc., Engine & Compressor Div., 550 85th Ave., Oakland, CA 94621
Transamerica Delaval, Inc., Turbine & Compressor Div., P.O. Box 8788, Trenton, N.J. 08650
Turbine Specialties, Inc., P. O. Box 207, West State Street Road, Salina, KS 67401
Voith Schneider of America—U.S. Agent: Eli Sharprut, 347 Evelyn St., Paramis, N.J. 07652

PUMPS—Repairs—Drives
Barco Corporation, 16 Bahama Circle, Tampa, FL 36606
Penco Division Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Transamerica Delaval, IMO Pump Division, P.O. Box 447, Monroe, NC 28110
Worthington Group-McGraw Edison Co., 270 Sheffield Street, Mountainside, NJ 07092

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

ROPE—Manila—Nylon—Hawsers—Fibers
American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431
Atlantic Cordage Corp., 60 Grant Avenue, Carteret, NJ 07008
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

RUDDER ANGLE INDICATORS
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
Modular Systems, 164 Franklin Avenue, Rockaway, NJ 07866
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.

SAFETY EQUIPMENT
ACR Electronics, Inc., 3901 North 29th Avenue, Hollywood, FL 33020
Datrex, 3770 N.W. So. River Drive, Miami, FL 33142

SANITATION DEVICES—Pollution Control
American United Marine Corp., 575 Madison Avenue, New York, NY 10022
Argo Marine Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013
Chapman Engineers (Omnipure Division), 6101 Southwest Freeway, Suite 100, Houston, TX 77057
Envirovac (Division of Dometic Inc.), 1260 Turret Drive, Rockford, IL 61111
Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
Marland Environmental Systems, Inc., N. Main Street, Walworth, WI 53184
Microphor, Inc., P.O. Box 490, Willits, CA 95490
Red Fox Industries, P.O. Drawer 640, New Iberia, LA 70560
St. Louis Ship FAST Sewage Systems, 611 East Marceau St., St. Louis, Mo. 63111
Somat Corporation, Pomeroy, PA 19367

SCAFFOLDING EQUIPMENT—Work Platforms
Patent Scaffolding Co., 2125 Center Ave., Fort Lee, N.J. 07024

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West Footscray Engineering Works P/L, 52 Cross Street, West Footscray, Melbourne, Victoria, 30 12. Australia

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Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Penco Division Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

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Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

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

SHIPBUILDING—Repairs, Maintenance, Drydocking
A.D.M. (Amsterdam Drydock Mfg.), Moatschappij bv, P.O. Box 3006, 1003 AA, Amsterdam, Holland
AMT, Inc., 2400 N.W. 39th Avenue, Miami, FL 33142
Asmar Shipyards Co., Astilleros y Maestranzs de la Armada, Prat 856, Piso 14, Casilla 150-V, Valpariso, Chile, S.A.
Astilleros Espanoles S.A., 17 Padilla, P.O. Box 815, Madrid, Spain
Astilleros Unidos de Veracruz, S.A., San Juan de Ulua S/N, Apdo. Postal 647, Veracruz, Ver., Mexico
Atlantic Marine Inc., P.O. Box 138 Ft. George Island, Jacksonville, FL 32226
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150
Bay Shipbuilding Corporation, 605 North Third Avenue, Sturgeon Bay, WI 54235
Bender Shipbuilding & Repair, P.O. Box 42, Mobile, AL 36601
Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004
Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081
Bludworth Bond Shipyard Inc., P.O. Box 5065, Houston, TX 77012
Boeing Marine Systems, P.O. Box 3707, Mail Stop 14-11, Seattle, WA 98124
Cantieri Navali Riuniti, Via Cipro, 11, 16100 Genova, Italy
Carrington Slipways Pty, Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322
Centromor, One World Trade Center, Suite 3557, New York, N.Y. 10048
China Shipbuilding Corp., c/o Allegro Transportation Supply Co., One Penn Plaza, Room 1606, New York, NY 10119
Conrad Industries, P.O. Box 790, Morgan City, La. 70380
Curacao Drydock Company Inc., 26 Broadway, Suite 741, New York, NY 10004
Dorbyl Ltd., Military Road, 1 Industrial Sites, West Bank, 5201 East London Republic of South Africa
Dravo Steelship Corp., R.4, Box 167, Pine Bluff, Ark. 71602
FMC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208
Galveston Shipbuilding Co., P.O. Drawer 2660, Galveston, TX 77553
HBC Barge, Inc., Grant Building, Pittsburgh, PA 15219
Halifax Industries Ltd., P.O. Box 1477, Halifax, Nova Scotia, Canada, B3K 5H7
Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189
Havre de Grace, Havre de Grace, Md.
Hitachi Shipbuilding & Engrg. Co., Ltd., 47 Edobori 1-Chome, Nishi-Ku, Osaka, Japan
Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central Post Office, Kowloon, Hong Kong
Hudson Shipbuilders, Inc., P.O. Box Q, Pascagoula, MS 39567
Jeffboat, Inc., Jeffersonville, Ind. 47130
Levingston Shipbuilding, P.O. Box 968, Orange, TX 77630
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
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Midland Marine Corporation, One Pennsylvania Plaza, New York, NY 10001
Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681
Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655
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Newpark Shipbuilding & Repair, P.O. Box 5426, Houston, TX 77012
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Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767
Progressive Shipbuilders & Fabricators, Inc., P.O. Box 9130, Houma, LA 70361
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St. Louis Shipbuilding—Federal Barge, Inc., 611 East Marceau, St. Louis, Mo. 63111
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Sudoimport, 5 Kalyaevskaya, Moscow K-6, USSR
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Tug Barge Systems, Inc., subsidiary of Ingram Corp., 4100 One Shell Square, New Orleans, La. 70139
Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087
West Coast Salvage And Contracting, 2150 East Kent Avenue, Vancouver, B.C. V5P 2T2

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Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06052
Vu-Gage System, 150 E. 42nd St. (Room 910), New York, NY 10017

TERMINALS—Oil-Transfer
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TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.
Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002
Chotin Transportation, Inc., 580 Walnut St., Cincinnati, Ohio 45202
Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202
Henry Gillen's Sons Lighterage, 21 West Main St., Oyster Bay, N.Y. 11771
Great Lakes Towing Company, 1800 Terminal Tower, Cleveland, OH 44113
Gulf Fleet Marine Corporation, Canal Place One, Suite 2400, New Orleans, LA 70130
James Hughes, Inc., 17 Battery Pl., New York, N.Y. 10004
McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
McDonough Marine Service, P.O. Box 26206, New Orleans, La.
Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, N.Y. 10048
Ocean Salvors Company, One World Trade Center, New York, NY 10048
Smit International (Americas) Inc., 17 Battery Place, New York, NY 10004
Suderman & Young Co., Inc., 918 World Trade Bldg., Houston, Texas 77002
Turecamo Coastal & Harbor Towing Corp., One Edgewater St., Clifton, Staten Island, N.Y. 10305

TRAINING SERVICES—Simulator
Ship Analytics, Park Circle, Centerport, NY 11721

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American United Marine, 575 Madison Avenue, New York, NY 10022
Dover Corporation, Norris Division, P.O. Box 1739, Tulsa, OK 74101
Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
Marland Environmental Systems Inc., N. Main St., Walworth, WI 53184
Parker-Hannifin Corporation, 17325 Euclid Avenue, Cleveland, OH 44112
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928
Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186
Winel, Inc., 34655 Mills Road, North Ridgeville, OH 44039
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Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134
Smith-Berger Manufacturing Corporation, 3236 16th Avenue S.W., Seattle, WA 98134

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

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Seacoast Electric Supply Corp., 225 Passaic St., Passaic, NJ 07055
Seacoast Electric Supply Corp., 1505 Oliver St., Houston, TX 77007

WIRE ROPE—Slings
Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004
A.L. Don Company, Foot of Dock Street, Matawan, NJ 07747

ZINC
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This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER/Engineering News. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all 24 issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract. MR/EN assumes no responsibility for errors **If you are interested in having your company listed in this Buyers Directory Section, contact John C. O'Malley at (212) 689-3266**

Approve $6.8-Million Title XI Increase For Tanker Reconstruction

Acting Maritime Administrator **Bruce A. McAllister** recently approved an increase in the cost of reconstructing the 121,739-dwt tanker Overseas Boston from $29,371,582 to $37,215,848. The action increases the maximum Title XI guarantee available to aid in financing the project from $25,700,000 to $32,563,867.

The vessel, ex-Seatiger, was built by Mitsubishi Heavy Industries, Ltd., Hiroshima, Japan, in 1974. It was wrecked off the coast near Nederland, Texas, in April 1979 and abandoned. It was purchased later that year by Cambridge Tankers, Inc., a subsidiary of Overseas Shipholding Group, New York.

Western Gear Offers Brochure On Propulsion Drives For Mobile Rigs

The complete line of advanced, heavy-duty semisubmersible drilling rig propulsion drives offered by the Power Transmission Division of Western Gear Corporation, Lynwood, Calif., for drilling ships and self-propelled semisubmersible drilling rigs is described in a new comprehensive brochure.

The informative brochure describes the MGH Series Propulsion Drives; 960 MGH-TP, 2,500 shaft horsepower at 205 rpm; 480 MGH-TP, 4,000 shaft horsepower at 251 rpm; 660 MGH-TP, 3,400 shaft horsepower at 200 rpm; and 760 MGH-TP, 4,500 shaft horsepower at 152 rpm.

Western Gear's propulsion drives are particularly suited to installation aboard self-propelled drilling rigs and drilling ships because they are compactly configured to provide optimum space use within restricted machinery arrangements. In service for more than 10 years Western Gear's propulsion drives have performed with virtually no gear related problems.

For a free copy of Western Gear's Power Transmission brochure on the MGH Series Propulsion Drives,

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Syfan Named VP At Service Machine Group

Service Machine Group, Inc. president **T.R. Hensley** announced recently that **Frank E. Syfan** has joined the company as vice president of business development. Mr. **Syfan** was previously superintendent of Amoco's New Orleans division-offshore operations. In his new post Mr. **Syfan** will be responsible for new product development, acquisitions, and marketing and sales of offshore platforms, workboats, marine repair, large diameter pipe and pressure vessels, and electrical construction and maintenance.

Racal-Decca Marine Moves Sales And Marketing Group To Seattle Location

The financial, operations and service groups of Racal-Decca Marine, Inc., national marine distribution company, will remain headquartered at the Pine Lakes Industrial Park, Palm Coast, Fla., while the company's sales and marketing group will relocate as planned to Seattle, it was announced recently by **Mark Lipp,** Racal-Decca Marine's executive vice president of finance and operations.

The Racal-Decca official said the relocation of sales and marketing headquarters to Seattle, the second largest deepwater commercial shipping facility in the country, provides an opportunity for increased field sales support and more efficient service for the company's major customers. Seattle has the nation's largest fishing fleet and one of the largest workboat centers.

The Seattle move was undertaken last month, Racal-Decca officials said. The decision to retain administrative and service group headquarters in Palm Coast follows a review of an earlier Racal-Decca decision that all company groups would relocate to Seattle.

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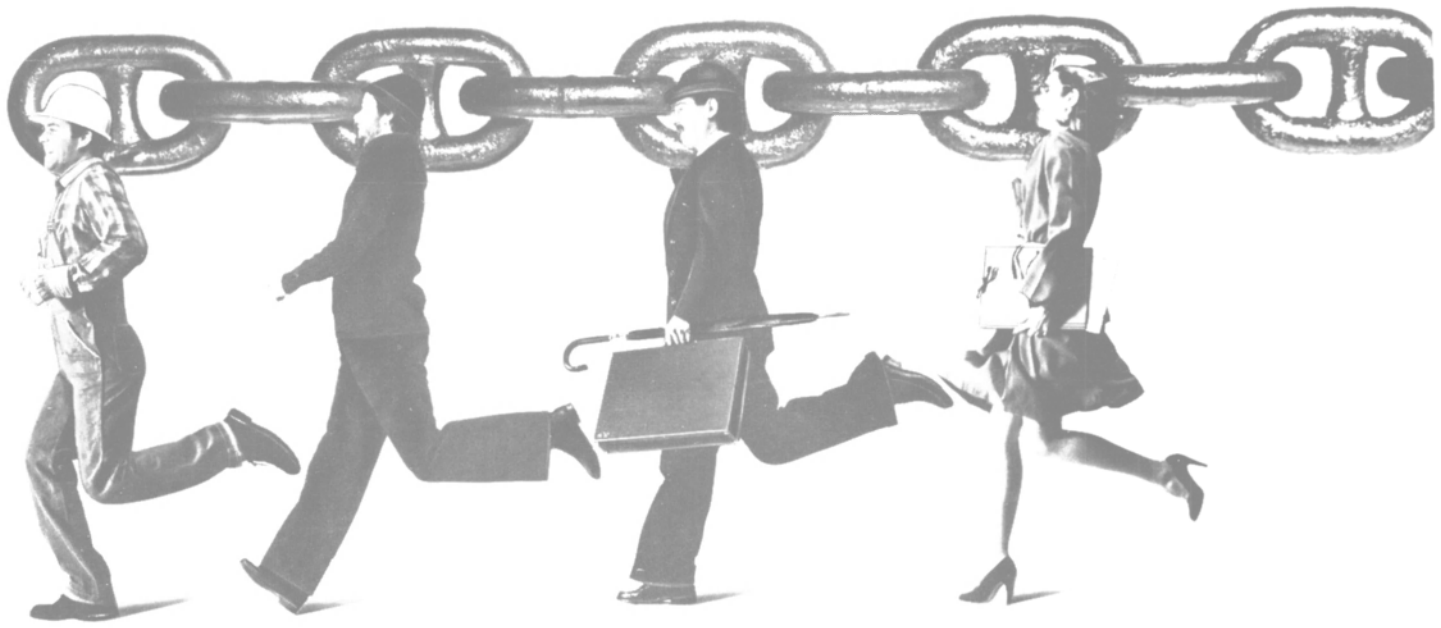

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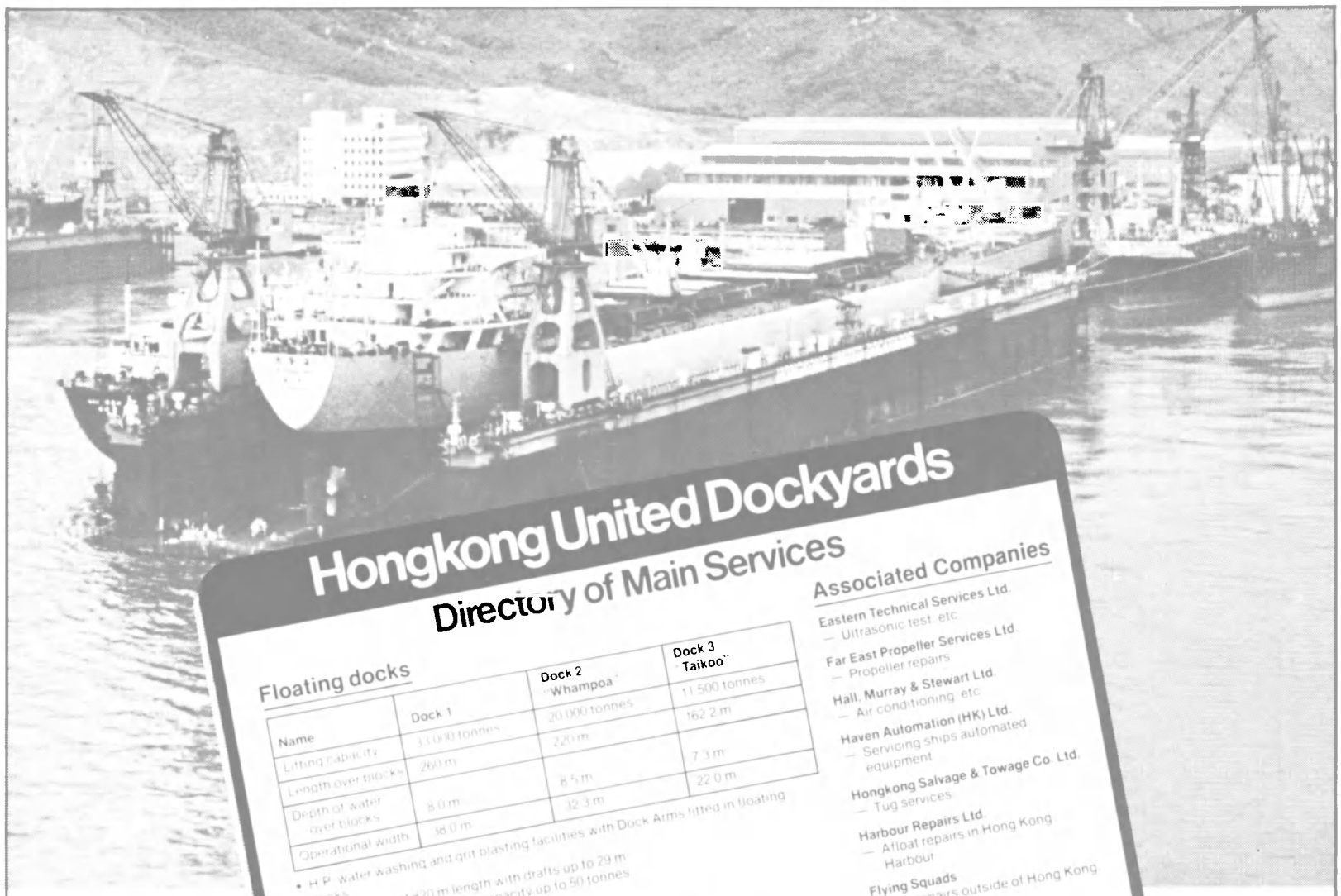

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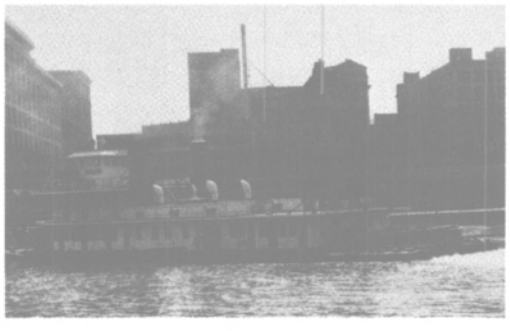

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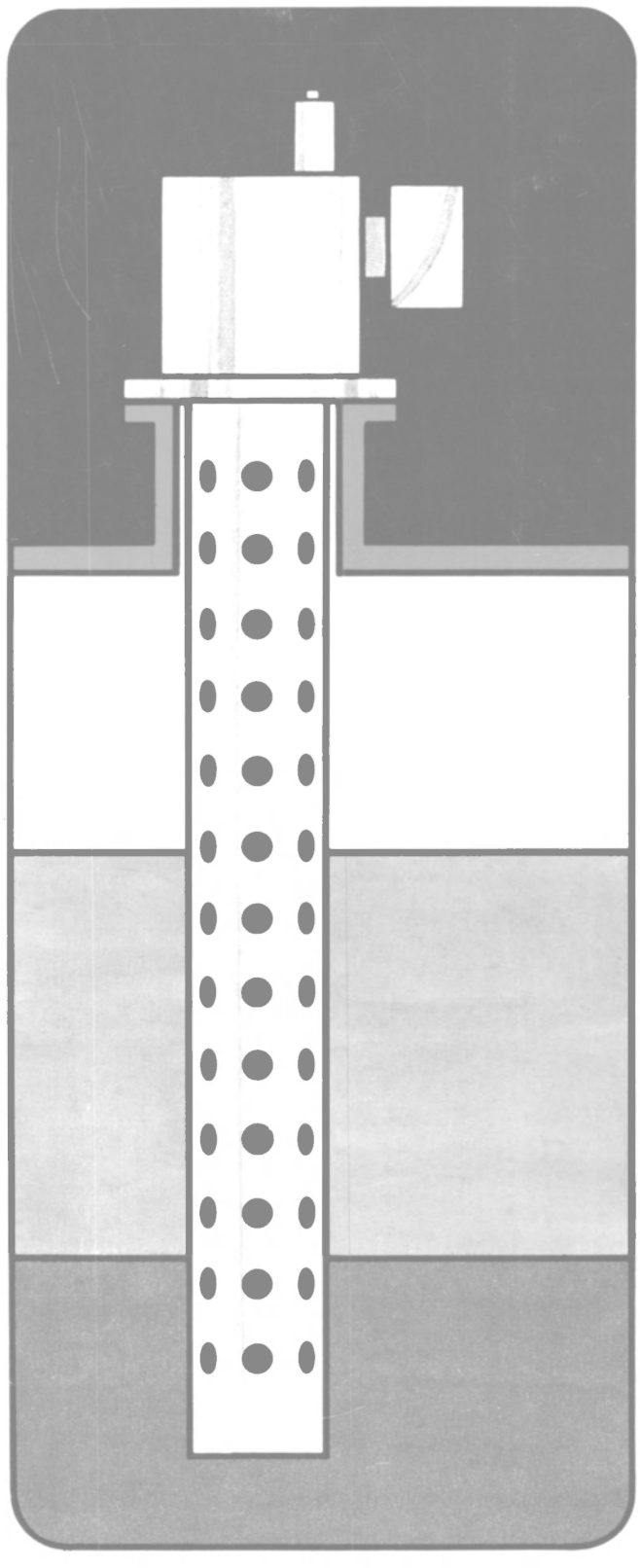

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