

**MARITIME  
REPORTER**  
AND  
ENGINEERING NEWS

**ASNE**  
COMBAT SYSTEMS  
MEETING



USS New Jersey

**President Reagan Recommissions  
USS New Jersey**  
(SEE PAGE 4)

**ASNE  
Combat Systems Meeting**  
(SEE PAGE 4)

**JANUARY 15, 1983**

# NOTICE



## Biospherics Oil Sentry® Can Help You Comply with the MARPOL Treaty.

The MARPOL Treaty was ratified on October 2, 1982. Called "the most important international treaty-regime ever developed in the struggle against marine pollution,"\* the Treaty requires installation of bilge oil-in-water separating and monitoring equipment on all new vessels over 400 gross tons by October 2, 1983; all other ships at first drydocking.

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*\* International Maritime Organization Briefing, October 5, 1982*

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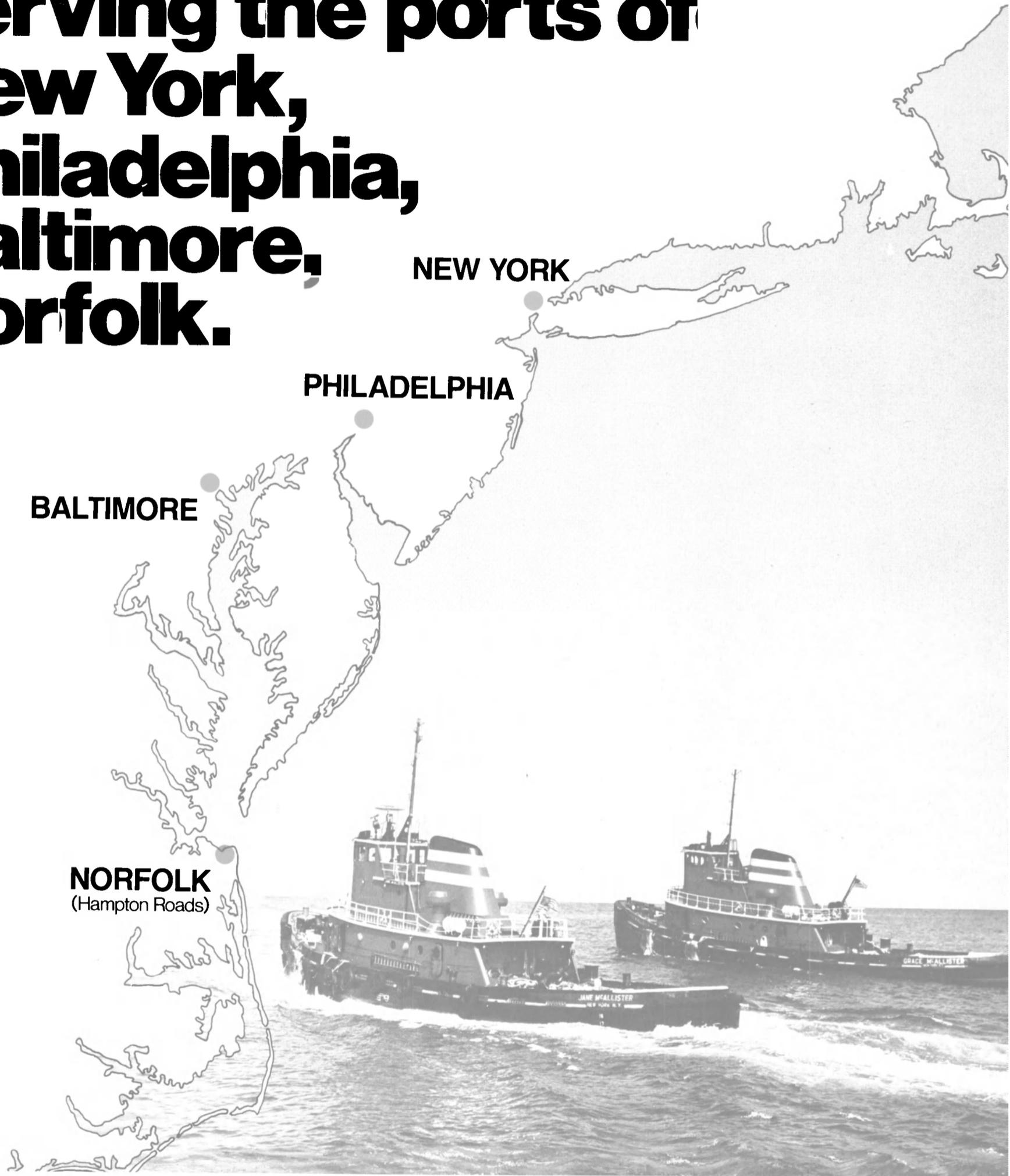
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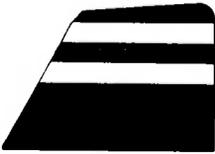


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**ON THE  
COVER**

**President Reagan Recommissions  
the New Jersey**  
PAGE 16

**ASNE West Coast Systems  
Meetings**  
PAGE 12

**Brown & Root Receives  
\$30-Million Contract For  
Zapata Production Platform**

Design work is in progress on a production platform, a job awarded Brown & Root, Inc. by Zapata Corporation. Brown & Root, a Halliburton subsidiary, is one of the world's largest engineering construction companies.

The \$30-million contract calls for design, fabrication and installation of an eight-pile, two-deck platform with 18 drilling slots. Brown & Root's Green Bayou marine yard in Houston will fabricate the decks and jacket pieces. The platform will be assembled at the company's Port Aransas yard, Harbor Island.

The platform will be set in 658 feet of water in East Breaks Block 110 in the Gulf of Mexico.

Design engineering began in November and fabrication will start in February 1983. Installation is scheduled for mid-1984.

**Newport News Awarded  
\$3.1-Billion Contract For  
Two Nimitz Aircraft Carriers**

Newport News Shipbuilding, Newport News, Va., has been awarded a \$3,143,000,000 fixed-price-incentive-fee contract for the construction of two Nimitz-class nuclear-powered aircraft carriers to be designated CVN 72 and CVN 73. These two ships will be the fifth and sixth ships of their class and have delivery schedules of December 1989 and December 1991, respectively. These ships will be built by Newport News Shipbuilding in their North Yard facility utilizing modular construction techniques in conjunction with a crane capable of lifting up to 900 tons. The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-83-C-2033).

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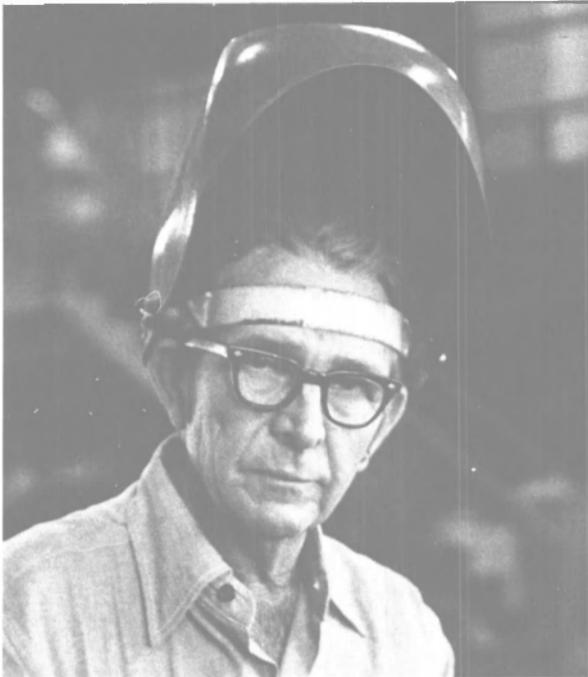
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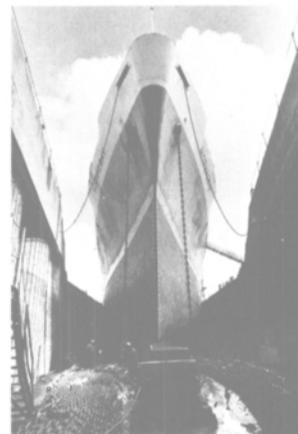
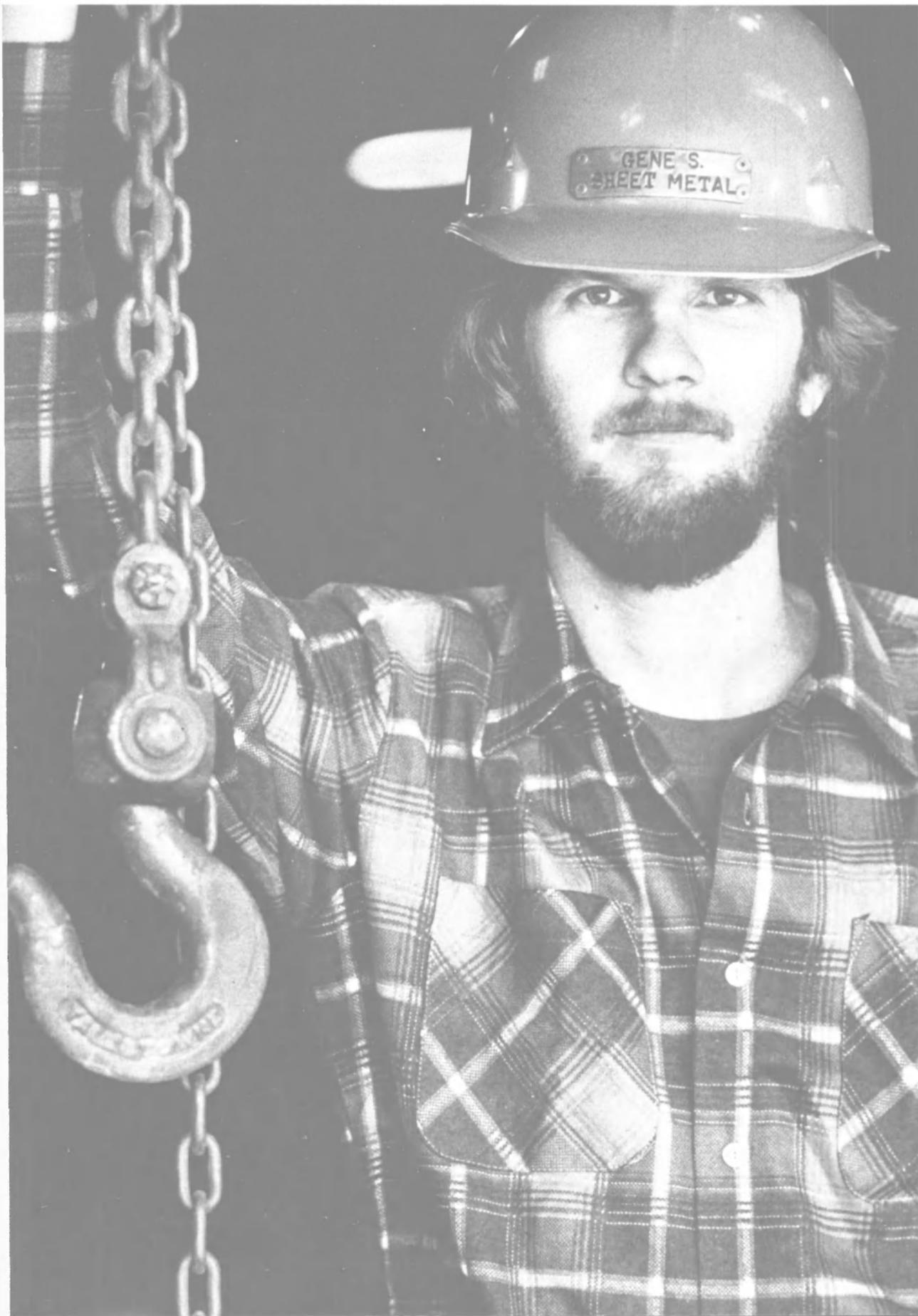
Bill and our other senior people do more than just supervise jobs. They spend years as teachers. Passing on their skills to younger men like Gene Stafford. Gene is well on his way to being one of the best. In fact, Gene now does what Bill did, which gives Bill a little more time to fish.

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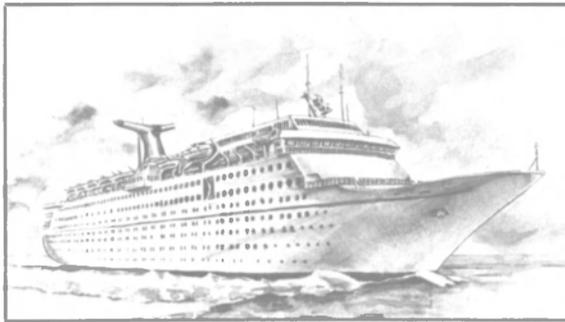
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## Aalborg Vaerft Conducts Tank Tests Of New Cruise Liner Model

Aalborg Vaerft A/S has begun the tank tests of an eight-meter-long model of the new passenger "superliner" it will build for Carnival Cruise Lines of Miami, Fla.

Studies being conducted at the Danish Ship Technical Laboratory in Copenhagen are designed to ensure optimal propulsion conditions and maneuverability of the 45,000-gt, 1,800 passenger vessel currently designated as hull No. 246.



Artist's rendering of hull No. 246 at Aalborg Vaerft A/S where she will be built. Carnival Cruise Lines' new "Superliner" will measure 45,000 gt and carry 1,800 passengers and 600 crew when delivered in mid-1985.

Similar tests contributed to the operational excellence of Carnival's M/S *Tropicale*, delivered to the Cruise Line by Aalborg Vaerft in December 1981. The tests also demonstrated the functionalism of the new, uniquely designed funnel which has become *Tropicale's* most recognizable mark.

Specifications for the new liner, drawn in cooperation among the yard, the shipowner, technical consultants Technical Marine Planning (Group) Ltd. of London, and designers Farcus & Farcus of Miami, include: length overall 220 meters, width 28 meters, and a 7.5-meter draft.

To be built completely of steel, hull No. 246 will be equipped with two propellers and four 1,000-hp thrusters (two forward and two aft). The latter will combine with two rudders to ensure a maneuverability that will permit access to almost any harbor and port.

Models also are being built of the 725 passenger cabins, each of which will have private bath facilities and shower. All will be equipped with color television.

Facilities will include two restaurants, a theater/showroom, cinema, night club, discotheque, teenagers' and children's playrooms, and complete health clubs for men and women. Teak-covered open sun decks will surround the three passenger swimming pools.

Propulsion machinery will consist of two Sulzer, two-stroke, diesel engines, type 7RLB66, each having an output of 15,200 bhp, producing 21.75 knots. The main engines will be coupled to two controllable-pitch KaMeWa propellers, and a shaft alternator of 3,000 kw will be driven by each engine so that the total electrical power supply at sea can be delivered by the main engines. Three diesel alternator sets will be installed as well.

The new ship will be totally automated, with central surveillance of all vital systems. Among the safety and security factors that will be built into every aspect of design is a sprinkler system throughout both public and operational areas.

Communication equipment, including electronic navigation, will be state of the art when the ship is delivered to Aalborg Vaerft in mid-1985.



**GERMANY'S LARGEST**—The 16,225 LPG carrier *Tycho Brahe*, the largest liquefied gas carrier to be built in Germany, was delivered recently by the Jos. L. Meyer Shipyard, Papenburg/Ems to Friedrich A. Detjen GmbH & Co. managing owner for Kommanditgesellschaft LPG-Schiffahrt GmbH & Co. Powered by a B&W two-stroke main engine, model 8L45GFCA, the ship is the 600th steel vessel to be built by the yard in more than a century.

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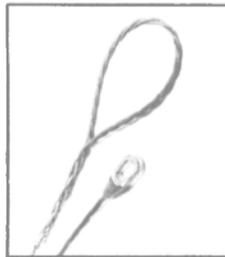
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Twin diesel patrol boats for the Suffolk County, N.Y., police department are powered by Cummins V555 engines.

fire pump that may also be used to pump out a sinking boat. Both of the boats have been designed for all weather use, and will patrol the north and south shores of Long Island in winter and summer.

The boats measure 38 feet long, with a beam of 12 feet 6 inches and a draft of 40 inches. Each boat is powered by two Cummins model V555 engines rated at 215 hp each, producing a cruising speed of 20 knots and a dash speed of more than 22 knots. The engines drive 24-inch, three-blade Federal propellers through Twin Disc 2.47:1 reduction gears. The craft are fitted with keel coolers designed and fabricated by Thomas Marine.

The fire-fighting system consists of a 3-inch Jacuzzi pump driven by a three-cylinder, 25-hp Yanmar diesel engine producing 250 gpm at 125 psi.

The hull was designed by Thomas Marine and features a full keel which extends below the prop tip.

Thomas Marine, Inc. is located at 37 Bransford Street, Patchogue, N.Y., 11772. The company is a well-known builder of custom aluminum fishing boats, workboats, and patrol boats and is fully equipped to provide owners with custom craft to meet any particular requirement.

For full information on vessels constructed by Thomas Marine and services offered,

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#### PATROL BOATS Major Suppliers

Main Propulsion	Cummins
Reduction Gears	Twin Disc
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Engine controls	Morse
Steering	Hynautic Hydraulic
Fire pumps	Jacuzzi
Pump engine	Yanmar
Keel coolers	Thomas Marine
Radar	Furuno
VHF	Regency
Depth Sounder	Raytheon
Coatings	International Paint

## Thomas Marine Delivers Two 38-Foot Police Patrol Boats

Thomas Marine, Inc. of Patchogue, N.Y., recently delivered two aluminum patrol and rescue boats to the Suffolk County Police Marine Bureau, Great River, N.Y.

The vessels are the first to be specifically designed and built for the police—previously, the department procured stock boats. The crews made considerable in-

put into the special features, Thomas Marine officials noted.

The new boats are equipped with stern rescue platforms, stern doors, keel cooling, with dry exhaust systems, lifting booms, tow bits, window defrosters, cabin heat, and bunks to accommodate the injured. The boats are equipped with a diesel-powered

## Todd Pacific Delivers Guided Missile Frigate Reid To The U.S. Navy

The Guided Missile Frigate Reid (FFG-30) was delivered on December 20, 1982, to the U.S. Navy by the Los Angeles Division of Todd Pacific Shipyards Corporation five weeks ahead of contract schedule and below budget parameters, it was announced by L.M. Thorell, vice president

and general manager of the division.

Reid is the eighth in the series of 17 frigates currently under contract at the Los Angeles Division, all of which have been delivered on or ahead of schedule and within budget. Of particular significance, it was noted by the Navy's Board of Inspection and Survey (INSURV-PAC) during the Reid's recent acceptance sea trials, performance of the ship's main propulsion plant, sonar and Mk 92 fire control long-range acquisition capabilities were considered the best observed to date by the board.

Reid, which is the fourth FFG to be delivered by Todd Los Angeles in 1982, is scheduled to be commissioned on March 12, 1983, at which time she will officially join the Fleet.

Todd Shipyards Corporation, the nation's largest independent shipbuilding company, operates other yards in or near Seattle, San Francisco, Houston, Galveston, New Orleans and Brooklyn.

## Triple A. Machine Awarded \$22-Million Contract For Repairs To USS Enterprise

Triple A. Machine Shop, Hunters Point, San Francisco, Calif., has been awarded a \$22,051,130 cost-plus-fixed-fee contract to repair and modernize the USS Enterprise (CVN 65) with an option for the repair and modernization of the USS Carl Vinson (CVN 70). The work will be performed at the Naval Air Station, Alameda, Calif. The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-83-C-8527).



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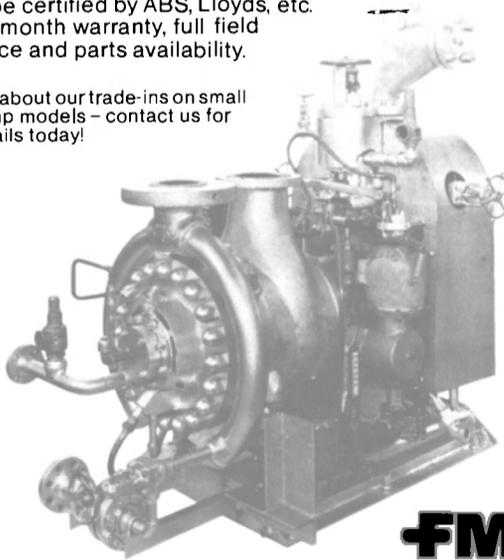
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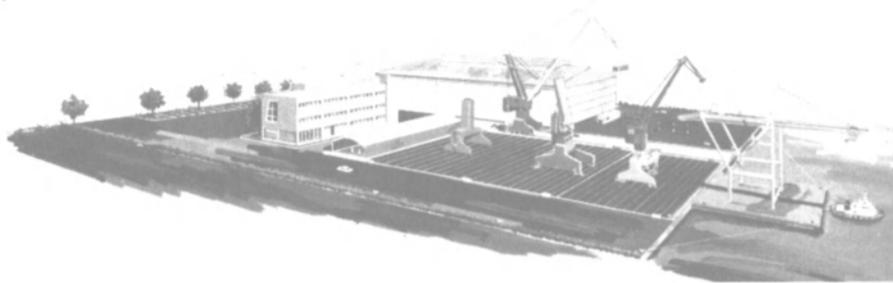
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Artist's rendering of the Kone FELS plant to be built in Singapore.

## Kone And Far East-Levingston In Joint Venture For Crane Manufacturing In Singapore

Kone Corporation and Far East-Levingston Shipbuilding Ltd. (FELS) recently announced that they have entered into a joint venture agreement for the production, manufacturing, assembly, and sale of harbor and shipyard cranes and bulk material handling systems in Singapore, as well as in marketing, distribution, delivery, and after-sales services in the Asian region. The new company will be named Kone FELS Cranes Pte. Ltd. (KFC).

Kone Corporation of Finland is one of the leading manufacturers of materials handling equipment in the world.

The new joint-venture company will be Kone's fifth operation in Singapore, the others being Kone Regional office for the Far East; Kone Elevator Pte. Ltd.; Kone Products & Engineering (S) Pte. Ltd., and Navire Cargo Gear Southeast Pte. Ltd.

The market for different materials handling equipment in the Far East countries looks very promising for the next 10 years.

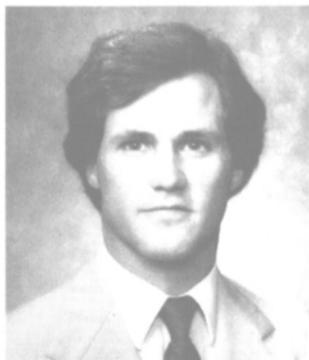
This is the main reason, Kone reported, for establishing a production facility in Southeast Asia.

KFC will market its products in the Far East as part of its worldwide marketing and production network. With the establishment of KFC, Kone will now have two crane plants to meet worldwide demand. The other plant is in Finland.

The joint-venture was conceived with the close cooperation of Singapore's Economic Development Board (EDB) and the Jurong Town Corporation (JTC). The project has been granted, in principle, pioneer status by EDB and a 2.2 hectare piece of land was made available to KFC by JTC for the joint venture. The construction of the plant will commence this year.

The joint venture is also in line with the diversification plan mapped out by FELS. KFC is FELS's third separate enterprise in the area, with the other two being wholly owned subsidiaries: FELS Consultancy Pte. Ltd. and Brightway Property Pte. Ltd.

### Leevac Corporation Names Terry Hardouin Planning Manager



Terry Hardouin

Jerry Bostic, president and chief executive officer of the LEEVAC Corporation, Morgan

City, La., announces the promotion of **Terry P. Hardouin** from controller to planning manager for the corporation. Mr. **Hardouin** replaces **Alcide S. Mann** who was named marketing manager for LEEVAC Marine Transportation, one of three operating divisions of LEEVAC. As planning manager, Mr. **Hardouin** will be responsible for administering the corporation's strategic planning and insures that the divisions address the critical elements in their respective business plans.

Mr. **Hardouin**, a native of New Orleans, received his B.S. Degree in accounting from LSUNO. He joined LEEVAC Corporation in October 1981.

According to Mr. **Bostic**, LEEVAC's three operating divisions

### CSSRA Urges Adoption Of Canadian Building Policy

The Canadian Shipbuilding and Ship Repairing Association (CSSRA) recently held its semi-annual general meeting in Ottawa. The CSSRA represents 25 shipbuilding and ship repair firms and 72 allied industries from coast to coast. Meetings of the board of directors and allied members were also held.

The board of directors noted that Canada's new shipbuilding policy is now two years and five months overdue. During the same period over \$1.1 billion (Canadian) worth of domestic shipbuilding work has gone to foreign shipyards. With a sensible shipbuilding policy in place during that period, the CSSRA noted, most of that lost work would have stayed in Canada and instead of adding to the unemployment rolls, shipbuilding would now be helping to solve the problem.

The CSSRA urged the government to delay no longer on a positive shipbuilding policy, otherwise it is likely that further orders will go abroad to seriously damage the viability of the industry to respond to the exciting possibilities for shipbuilding in the longer term, e.g. Beaufort and East Coast offshore developments, the Polar 8 icebreaker, and the Canadian patrol frigate program.

The association believes that Canada should receive a greater measure of industrial benefits as a result of the export of natural resources now being shipped almost exclusively in foreign bottoms. There is great potential for shipbuilding and allied industries in filling the need for the

carriers of these resources whether they be wheat, coal, liquefied natural gas, and other renewable or non-renewable resources. The CSSRA recommended that the government, as well as private sector exporters, examine the potential for shipbuilding sales and industrial benefit offsets, when negotiating export sales of Canadian natural resources.

The association discussed a report regarding Minister of Fisheries and Oceans **Pierre DeBane**, in which he is quoted as reviewing the issuance of new fishing licenses on the East Coast. To the astonishment of CSSRA members, it was reported in the press that he is considering the opening of the door for Nova Scotia and other Atlantic Canadian fisheries interests to acquire some used fishing trawlers now available in Europe at knock-down prices.

The CSSRA stated it trusts that this report is inaccurate because the association deplores the dumping of foreign vessels into Canada and its seeming support by a Minister of the Crown. The Canadian shipbuilding and allied industries need work now, the CSSRA noted, adding "There has been enough exportation of jobs in shipbuilding over the last 2 1/2 years without more negative policy initiatives such as bringing in used fishing trawlers."

The CSSRA also reported that the Canadian Department of Fisheries and Oceans is considering the purchase of a Japanese-built fishing freezer trawler, the M.V. Callistratus, for conversion as a fisheries research vessel. The Association asked the government that it honor its commitment and policy to build in Canada for Canadian Government ship requirements.

provide a comprehensive and integrated system of products and service including bunkering, lightering and transportation of petroleum products through LEEVAC Marine Transportation, distribution of diesel fuel and lubricants for rigs and vessels through LEEVAC Petroleum, and design and construction of boats, barges, and crews quarters through LEEVAC Shipyards.

### Navy Awards FMC \$48-Million Increase For Amphibious Assault Vehicles

FMC Corporation, Ordnance Division, San Jose, Calif., has been awarded a \$48,000,000 face-value-increase to a previously awarded fixed-price-incentive contract for

long lead time material for LVT-7A1 amphibious assault vehicles. The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-82-C-2185).

### Navy Awards \$7.4-Million Contract Increase For FFG-7's Main Reduction Gears

Bath Iron Works Corporation, Bath, Maine, is being awarded a \$7,402,473 face-value-increase to a previously awarded cost-plus-fixed-fee contract to provide main reduction gears in FY-83 for FFG-7 class ships. The Supervisor of Shipbuilding, Conversion and Repair, Bath, Maine is the contracting activity (N00024-82-C-2023).

### Sneckenberger Named Director Of Marketing For Duramax, Inc.



Robert C. Sneckenberger

Robert C. Sneckenberger has been named to the position of director of marketing of Duramax, Inc., parent company of The Johnson Rubber Co., Middlefield, Ohio. Prior to his appointment he served as the firm's district sales manager in the Detroit area.

Johnson Rubber is a multi-product, multi-division company manufacturing a variety of rubber and plastic products for the marine, automotive, appliance, and commercial building industries.

### \$3-Million Navy Contract Awarded Lockheed For Trident Support Work

The Lockheed Missiles and Space Company Incorporated, Sunnyvale, Calif., has been awarded a \$3,144,367 cost-plus-fixed-fee contract for engineering services in support of the Fleet Ballistic Missile/Trident Program. The Navy Strategic Systems Project Office, Washington, D.C., is the contracting activity (N00030-83-C-0053).

### Tidewater Marine Buys 11 Vessels From Halter Marine For \$33 Million

Tidewater Inc.'s marine subsidiary, Tidewater Marine Service, Inc., will purchase 11 offshore oil field support vessels from Halter Marine, Inc. at a price of approximately \$33 million.

Announcement of the acquisition was revealed by Sam S. Allgood, an executive vice president of Tidewater Inc. and president of Tidewater Marine Service, Inc., and Harold P. Halter, chairman of Halter Marine.

Mr. Allgood said that eight of the vessels are available for immediate delivery and the balance will be completed during the first quarter of 1983.

The new equipment will enable Tidewater to increase its equipment inventory and expand its fleet at an attractive price during a period of depressed conditions in the domestic offshore marine industry. "Tidewater's primary commitment to its vessel charterers is to offer the most

modern and versatile fleet serving the offshore oil and gas industry," Mr. Allgood said.

Four of the new vessels will be 192-foot-long towing-supply vessels that develop 4,600 continuous horsepower in twin engines and a speed of 13 knots. The remaining units are 180-foot-long supply vessels with 2,250 continuous horsepower in twin engines and a speed of 12 knots. All 11 vessels will have a minimum of 4,000 cubic feet of bulk

capacity and each vessel also has liquid mud capacity.

The new vessels will make a total of 375 vessels in worldwide service for Tidewater Marine.

Mr. Allgood added that the company currently has 18 other vessels under construction at a cost of about \$82 million. Ten of these vessels will be delivered during the company's fiscal year which ends March 31, 1983, and the balance in fiscal year 1984.

An additional 15 replacement vessels also are currently planned for delivery in fiscal years 1985, 1986 and 1987, he said.

In addition to its marine fleet, Tidewater is active in the air and natural gas compression business, including the construction and operation of compressor stations and natural gas plants, and also in oil and gas exploration and production. The company also maintains interests in the real estate and insurance businesses.

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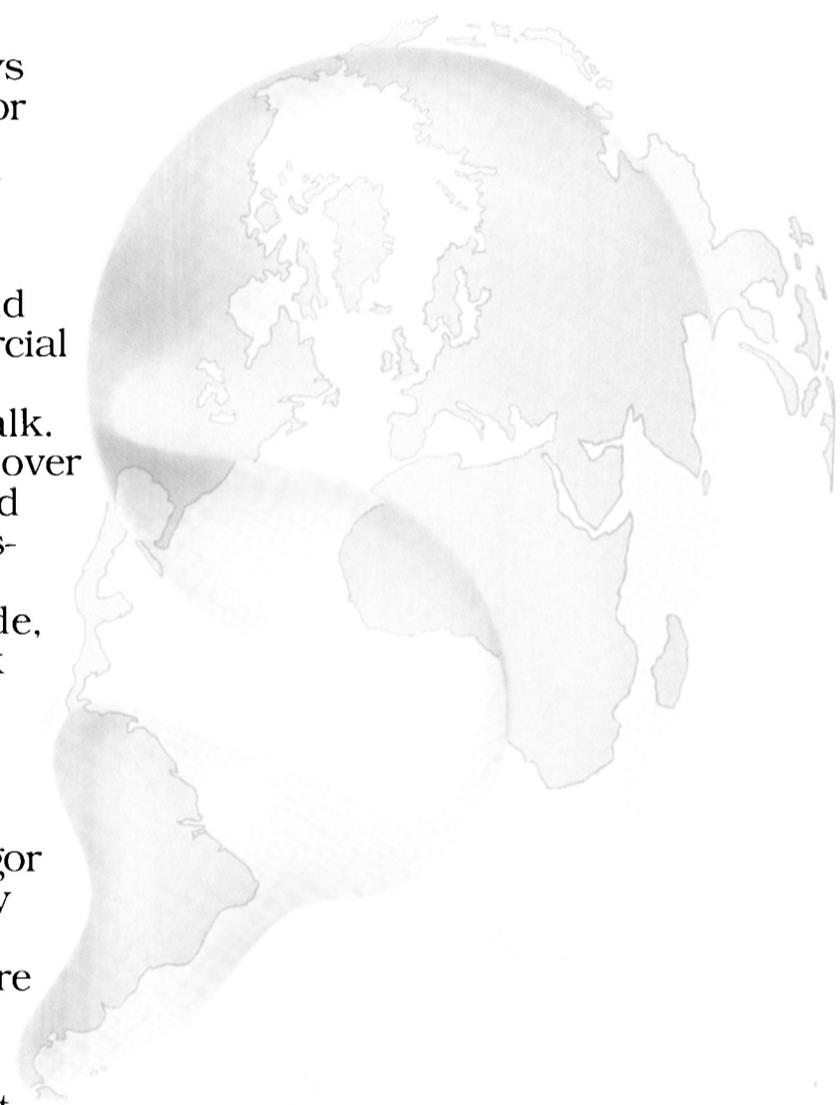
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## **West Coast Combat Systems Meeting**



The Long Beach-Greater Los Angeles and the San Diego Sections of the American Society of Naval Engineers (ASNE), in conjunction with the Commander Naval Surface Forces Pacific and the Naval Ship Weapon Systems Engineering Station, is sponsoring a combat systems meeting to be held Friday, February 18, 1983, at Port Hueneme, Calif.

It is the first ASNE meeting

of this type to be held on the West Coast. The top-flight program, entitled "Putting Fire Power to Sea," is part of ASNE's continuing series of meetings, the purpose of which is to achieve stronger professional identification with combat system engineering — a cardinal element of naval engineering.

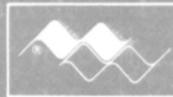
Since 1978 ASNE has organized a series of meetings, seminars,

and conferences on topics relating to combat systems which have provided a thoroughly professional forum for leaders and managers from the government and private industry to share concepts and ideas on matters of mutual concern.

The West Coast meeting, under the chairmanship of Rear Adm. Edward J. Oth (USN-ret.)

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# TOWMASTER RUDDER SYSTEM

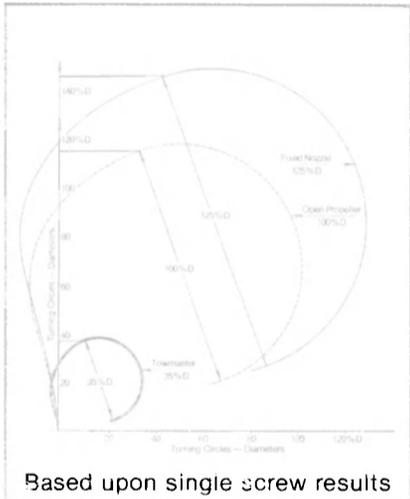


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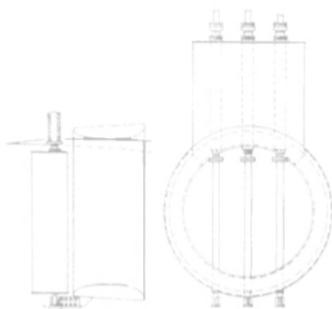
Virtually any vessel operating with a ducted propeller system can realize impressive gains in overall turning efficiency and maneuvering with a Michigan Wheel Towmaster Rudder System.

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that when a Towmaster System is compared with fixed nozzle and open propeller systems, turning diameters are routinely reduced by 90% and 65%, respectively.

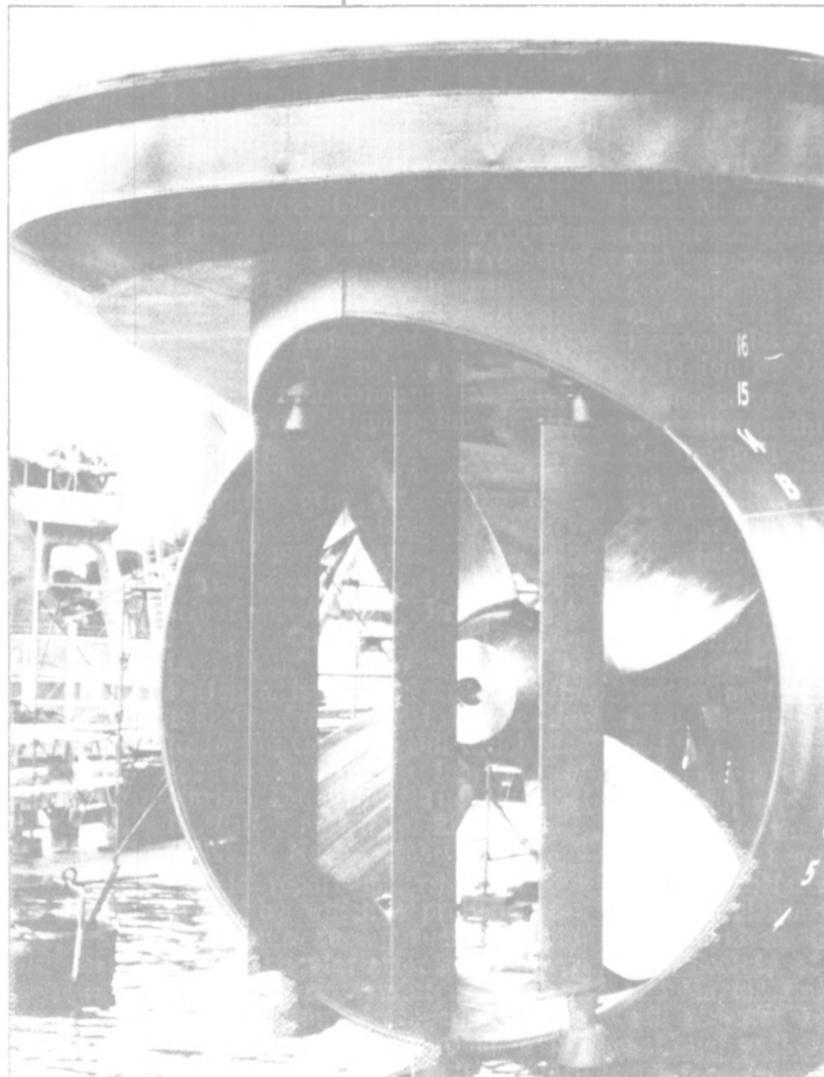
When increased maneuverability and station keeping capability can lower operational costs and increase vessel profitability and safety, the logic of installing a Michigan Wheel Towmaster Rudder System becomes clear.



The original Towmaster System was introduced in 1967 by the respected marine design firm Burness, Corlett & Partners, Ltd. (BCP). Now that Michigan Wheel Corp. (an industry innovator

for over 75 years) possesses the exclusive domestic sales and design rights to the Towmaster System, North American ship operators can take advantage of the combined technological expertise of Michigan Wheel and BCP.

To discover how over one hundred Towmaster Rudder Systems have weathered the severe tests of time with virtually trouble-free performance, and how Towmaster technology could improve the maneuverability of your vessel, contact: Michigan Wheel, 1501 Buchanan Ave. S.W., Grand Rapids, Michigan 49507. Telephone: 1 616 452-6941. Telex: 22-6444.



**ASNE  
WEST COAST COMBAT  
SYSTEMS MEETING  
February 18, 1983**

**Program**

**Morning**

- 7:30 Check in for Registered Participants.
- 9:00 Welcome / Remarks, Rear Adm. E.J. Otth, USN (ret.), chairman, West Coast Meeting.
- 9:05 President's remarks, R.C. Fay, president, ASNE.
- 9:10 Introduction, Rear Adm. E.J. Otth, USN (ret.).
- 9:25 Keynote Address, "Current Views on Surface Warfare Combat Systems," Vice Adm. R.L. Walters, USN, Deputy Chief of Naval Operations (Surface Warfare).
- 9:45 Morning Session Kickoff, R.E. Hawes Jr. (session moderator), vice president and general manager, General Dynamics, Pomona Division.
- 9:50 TAS MK-23 Development/Evaluation—An Historical Perspective," L.A. Andrews, TAS MK-23 Program Manager, Hughes Aircraft.
- 10:15 "United States Coast Guard 270-Foot Medium Endurance Cutter (WMEC); Command Display and Control Systems (COMDAC)," Comdr. R.P. Oswitt, USCG, Chief, Shipboard Systems Branch, U.S. Coast Guard Headquarters.
- 10:40 "Advanced Combat Direction System Architecture," Dr. R.C. Kolb, Head, Tactical Command & Control Division, Naval Ocean Systems Center.
- 11:05 Panel Discussion.
- 11:30 Break For Lunch.

**Afternoon**

- 1:30 Afternoon Session Rear Adm. C.J. Rorie, USN (session moderator), Commander, Naval Surface Group, MIDPAC.
- 1:35 "Fighting Ship Design—Perspectives for the Future," Commodore Myron V. Ricketts, USN, Deputy Commander for Design and Engineering, Naval Sea Systems Command.
- 2:00 "The Shipyard's Role in Putting Fire Power to Sea," Len M. Thorell, vice president and general manager, Todd Pacific Shipyards.
- 2:25 "Keeping Fire Power at Sea," Capt. J.P. Harrison, USN, Director of Engineering, Naval Ship Weapon Systems Engineering Station.
- 2:50 "Combat Systems Performance—Recent Experiences in the Pacific and Indian Oceans," Capt. D.R. Anderson, USN, Commanding Officer, USS Fox (CG-33).
- 3:15 Panel Discussion.
- 3:45 Break.
- 4:00 "Fire Power — A Systems Engineering Perspective," Rear Adm. W.E. Meyer, USN Project Manager, AEGIS Shipbuilding Project.
- 5:00 Closing Remarks, Rear Adm. E.J. Otth, USN (ret.).
- 6:30 Reception, Casa Sirena Marina Hotel, Santa Rosa Room.

**ASNE West Coast  
Combat Systems Meeting**

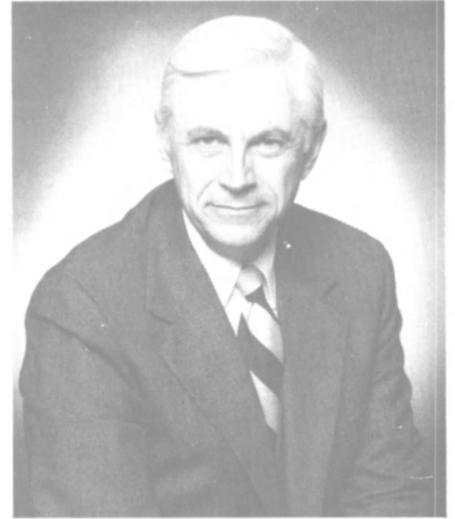
(continued from page 12)

of Hughes Aircraft Company, Field Service and Support Division, features technical presentations and panel discussions by eminent persons from the U.S. Navy, U.S. Coast Guard, and from the private marine sector. The meeting will be held at the Needham Theatre located at the U.S. Naval Construction Battalion Center in Port Hueneme.

The formal proceedings will begin at 9 a.m. with an introduction and welcoming remarks by both chairman Otth and Richard C. Fay, president of ASNE.

The keynote address, entitled "Current Views on Surface Warfare Combat Systems," will be given by Vice Adm. Robert L. Walters, USN, deputy chief of naval operations (surface warfare).

Moderators for the morning and afternoon sessions, respectively, are Ralph E. Hawes Jr., vice president and general manager of General Dynamics' Pomona Division, and Rear Adm.



Rear Adm. Edward J. Otth (USN-ret.), chairman, West Coast Combat Systems Meeting.

C.J. Rorie, USN, Commander, Naval Surface Group MIDPAC.

The presentors for the full-day meeting include: L.A. Andrews, TAS MK-23 program manager, Hughes Aircraft; Comdr. Richard P. Oswitt, USCG, Chief Shipboard Systems Branch, Coast Guard Headquarters; Dr. R.C. Kolb, Head, Tactical Command and Coastal Divisions, Naval Ocean Systems Center; and Commodore Myran V. Ricketts, USN, Deputy Commander for Design

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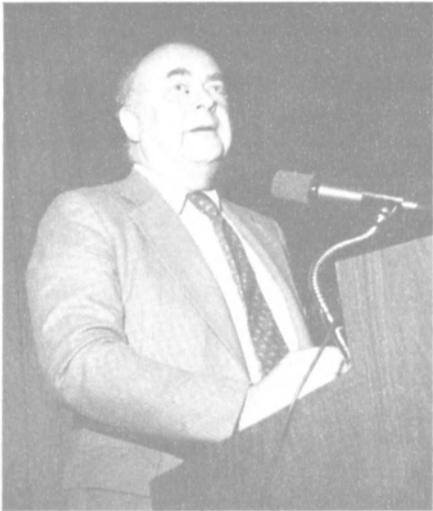
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**Richard C. Fay**, president, American Society of Naval Engineers, 1981-83.

and Engineering, Naval Sea Systems Command. **Len M. Thorell**, vice president and general manager, Todd Pacific Shipyards; **Capt. J.P. Harrison**, USN, Director of Engineering, Naval Ship Weapon Systems Engineering Station; and **Capt. D.R. Anderson**, USN, Commanding Officer, USS Fox (CG-33).

The program will conclude with an address by Rear Adm. **Wayne E. Meyer**, USN, Project Manager, AEGIS Shipbuilding Project, and closing remarks by Admiral **Othth**.

A reception will be held, starting at 6:30 p.m. in the Santa Rosa Room of the Casa Sirena Marina Hotel, following the technical sessions.

The ASNE Sections in southern California also have arranged for a bus trip to Solvang, a Danish community, and to a winery for guests of those attending the ASNE meeting. The bus will pick up participants at the Casa Sirena Marina Hotel and at the Oxnard Hilton Inn for the day tour. The charge for the tour, which will return in ample time for the reception, is \$12 per person. Rooms have been reserved for conference registrants at the two hotels.

The technical sessions are classified "Confidential," and the necessary clearance must be secured prior to attendance.

Cost of the meeting is \$40 for ASNE members and \$65 for non-members.

Additional details and registration, hotel, and security clearance forms may be secured by writing ASNE, West Coast Combat Systems Meeting, 1012 14th Street, N.W., Suite 807, Washington, D.C. 20005. Tel. (202) 737-0757.



### Elliott Awarded Additional Contract For Thruster Unit

Elliott Company's Springfield, Ohio operation, a subsidiary of United Technologies Corporation, has been awarded a contract to supply a thruster to Woods Hole Oceanographic Institute, Woods Hole, Mass.

The unit, which is the fourth Elliott White Gill Thruster contracted by Woods Hole Oceanographic Institute within the past several years, will be retrofitted into the research vessel R.V. Atlantis II to replace a tunnel thruster. The vessel will act as a mother-ship to a small submersible. During such operations, propellers cannot be operated due to the danger of cutting life support lines.

The Elliott White Gill Thruster is a low head, high axial pump capable of delivering thrusts of up to 38,000 pounds (17,000 kg). It has no external propeller, but provides 360 degrees of thrust without extending beyond the hull lines of the vessel. The main engines of the Atlantis can be shut down, and the Gill unit will be used to provide thrust in precisely the amount and the direction required to maintain a steady position or to maneuver with ease to extend the range of the sub.

The Oceanographic Institute's other three Elliott Gill Thrusters are also used on vessels requiring precise dynamic positioning. Sea trials for the R.V. Atlantis II are scheduled for March 1983.

### Roger Ffooks Appointed European Representative For J.J. Henry Firm

J.J. Henry Co., Inc. of New York City, one of the leading naval architects in the U.S., recently announced the appointment of **Roger C. Ffooks** of London as the company's European representative.

J.J. Henry Co. has engaged for many years in the design of ships and systems for the transport of liquefied gases, including LNG, LPG, anhydrous ammonia, and other similar cargoes. The company's early work in the 1950s led directly to the building of Methane Princess and Methane Progress in 1962-64 and to the development of the design philosophy and regulatory rules governing liquefied gas transport. J.J. Henry's position in this specialized engineering discipline has remained strong to the present day.

**Mr. Ffooks**, a naval architect, has long occupied a position of importance in the liquefied gas transport industry, commencing in the middle 1950s. During his long association with Conch Methane Services Ltd. and, later as an independent consultant, he has contributed significantly

to the development of all aspects of liquefied gas technology relating to hull design, cargo containment, and cargo handling. He has also written authoritative histories of the marine liquefied gas industry.

### BWA To Design Artificial Island For Sohio's Drilling Program In Beaufort Sea

Houston-based consultant, Brian Watt Associates, Inc. (BWA), has been retained by Sohio Construction Company to design an artificial island for its Mukluk prospect in the Beaufort Sea, off Alaska's north coast and west of Prudhoe Bay.

The island will be constructed in 48 feet of water at the junctions between Tracts 191, 192, 205, and 206 which were jointly leased by Sohio, Shell, and Texaco, during the October 1982 federal outer continental shelf lease sale. Island construction will take place in 1983 and spudding of the

first exploratory well is planned before year's end. Mukluk will be the largest exploratory island constructed to date in the Beaufort Sea. Representing Sohio on the project is **Norman Ingram** and the BWA project engineer is **John Wang**.

Sohio Construction Company of San Francisco is a wholly owned subsidiary of the Standard Oil Company (Ohio) with headquarters in Cleveland, Ohio.

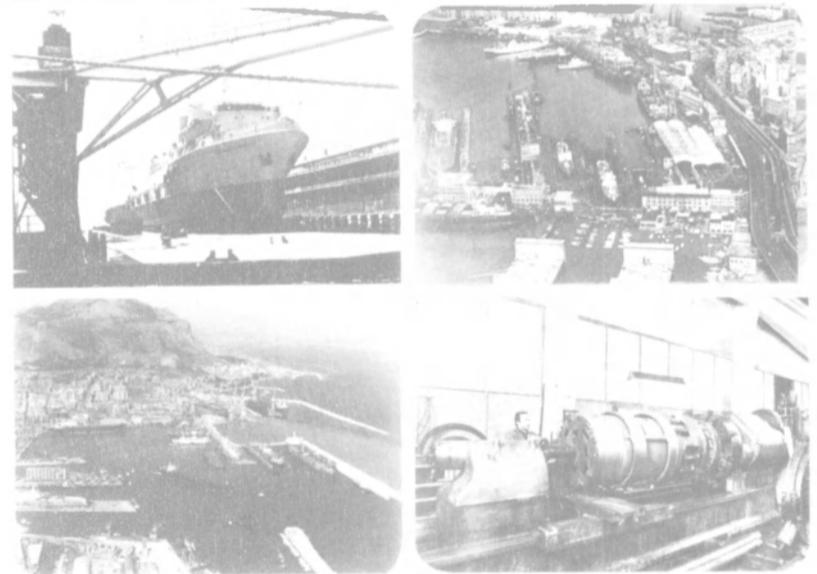
### \$520-Million Contract Awarded Electric Boat For Two Nuclear Subs

General Dynamics Corporation, Electric Boat Division, Groton, Conn., has been awarded a \$560,211,100 fixed-price-incentive contract for construction of two FY-83 SSN 688-class submarines (SSN 751 and 752). The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-82-C-2039).



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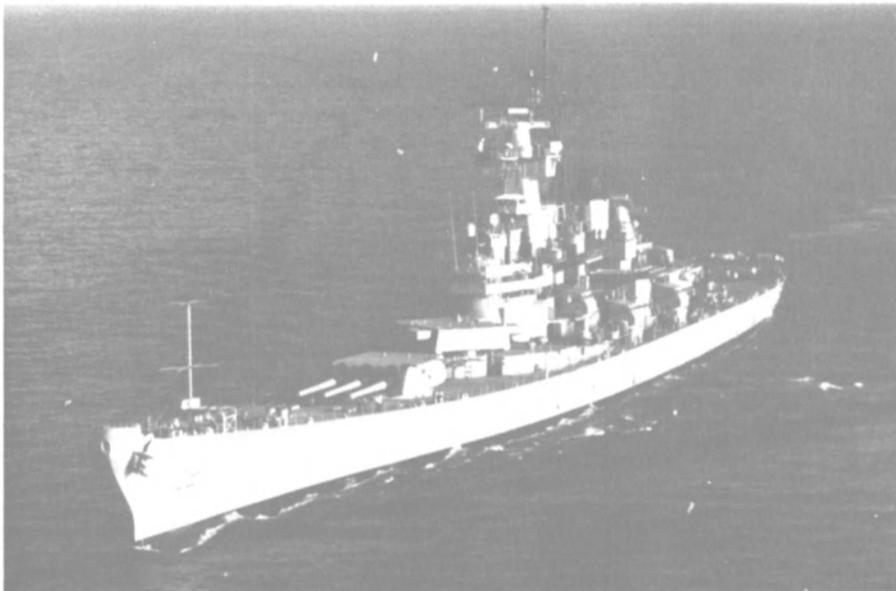


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# ON THE COVER



## Battleship New Jersey Is Recommissioned

The battleship New Jersey (BB-62) was recommissioned recently at the Long Beach Naval Shipyard, Long Beach, Calif. President **Ronald Reagan** was the commissioning speaker.

The New Jersey's recommissioning marks the fourth time the ship has become part of the active fleet. Originally commissioned May 23, 1943, it earned nine battle stars in World War II. It was recommissioned November 21, 1950, and earned four more battle stars for action in Korea. The battleship was last recommissioned April 6, 1968, at the Philadelphia Naval Shipyard for service during the Vietnam conflict. The New Jersey received two more battle stars and one Navy Unit Commendation for Vietnam service.

The New Jersey's nine 16-inch and twelve 5-inch guns complement its newly added offensive armament of eight armored box launchers for Tomahawk cruise missiles; four quad launchers for Harpoon cruise missiles; and Vulcan-Phalanx close-in-weapons systems for self-defense against aircraft and missiles.

Other modernization changes to the New Jersey include modern electronic countermeasures systems; a cruiser-style communication system; aviation facilities and operating stations for SH-60B helicopters; updated air and surface search radars; and conversion of the fuel plant to



President Reagan shown on a tour of the USS New Jersey with Captain William M. Fogarty.

burn Navy distillate fuel. Modernization of the New Jersey began in 1981.

The New Jersey is 887 feet long and has a beam of 108 feet. It has a displacement of 57,355 tons and a draft of 36 feet. The ship has a crew of 67 officers and 1,460 enlisted personnel.

Capt. **William M. Fogarty**, a native of Des Moines, Iowa, will command the New Jersey.

The U.S. Navy plans to modernize and bring four battleships back into service. These include the USS New Jersey, the USS Iowa, the USS Missouri, and the USS Wisconsin. The first modernization, the USS New Jersey, is now completed at a cost of approximately \$326-million.

Modernization of the second ship, the USS Iowa, is being con-

ducted by Ingalls Shipbuilding of Pascagoula, Miss., and Avondale Shipyards, New Orleans, La. It is estimated the project will take 27 months. The total cost of the Iowa refurbishing project has been put at approximately \$400-million. Approximately \$200-million of this figure is for shipyard work, the balance will be for new weapons.

The other two ships, the Missouri and the Wisconsin, remain in the reserve fleet at the present time.

(See MARITIME REPORTER/Engineering News, April 15, 1982, August 15, 1982, November 1, 1982 and November 15, 1982 issues.)

## Navy Awards \$5-Million Personnel Contract

Atlantic Personnel Services Incorporated, Baltimore, Md., has been awarded a \$5,119,807 cost-plus-fixed-fee contract to furnish firewatch, topwatch, and "bag and drag" services in support of the USS Forrestal overhaul. These services include people who stand watch for fires while workers are welding and people who clean up after job completion. Work will be performed at Philadelphia Naval Shipyard, Philadelphia, Pa. The Naval Regional Contracting Center, Philadelphia, is the contracting activity (N00-140-83-C-1047).

## Norshipco's Floating Drydock 'Titan' Aids In Tunnel Construction Project

Norfolk Shipbuilding & Drydock Corp. (Norshipco) of Norfolk, Va., recently used its 950-foot floating drydock "Titan" in a unique operation to help in the construction of a new tunnel under the Elizabeth River — in addition to the drydock's normal ship repair function. The Titan has a lifting capacity of 58,000 tons.

The tunnel, to be used by vehicular traffic between Norfolk and Portsmouth, Va., is being built in eight sections by the Chicago Bridge and Iron Co., in Corpus Christi, Texas. The 300-foot-long by 40-foot-wide sections are hauled to Norfolk by barge, two at a time at a total weight of 5,500 tons.

In the past, tunnel sections have been launched, similar to new ships, and towed to a construction site under their own buoyancy, but the proximity of the Titan permitted a barge to be used to tow the tunnel sections to the Elizabeth River site.

This was the first time tunnel sections have been transported by barge and the first time a drydock had been used to float the sections.

The two tunnel sections are huge: 300 feet by 40 feet by 40

feet together weighing some 5,500 tons. This was no problem for the Titan, which has a lifting capacity of 58,000 tons.

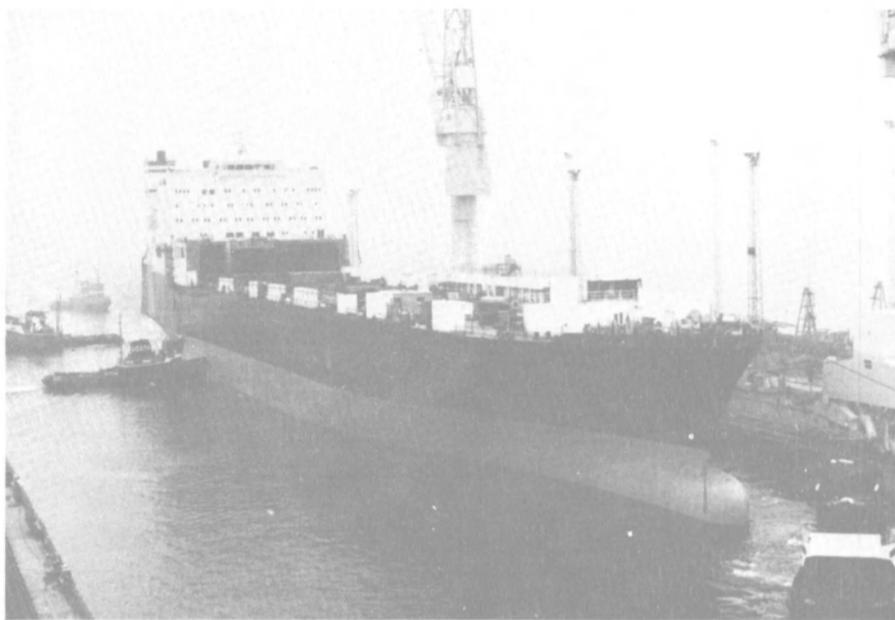
The barge with the two tunnel sections aboard was floated into the drydock. The drydock was then raised, lifting the barge with the tunnel sections out of the water. The barge was then filled with water, and, when the drydock was re-submerged, the barge sank with it allowing the sealed tunnel sections to float free.

Consideration had been given to sinking the barge directly into the river. But because the sections were side by side on the barge and were of unequal weight, the barge would have rolled as it sank. By sinking the barge in the drydock, the barge's motion was controlled and the tunnel sections were floated without a problem.

With the tunnel sections delivered, the barge was refloated and towed back to Corpus Christi for the next delivery. Each succeeding delivery will be handled in the same way. The first section is scheduled to be sunk into a special trough in February. The tunnel is scheduled for completion in 1988.



Tunnel sections entering 950-foot drydock Titan.



The ro/ro Saudi Abha under construction at Kockums AB, Sweden.

## Two Ro/Ro's For Saudi Arabia Dedicated At Kockums, Four-Ship Order Valued At \$250 Million

The National Shipping Company of Saudi Arabia (NSCSA) recently dedicated the Saudi Abha and the Saudi Diriyah—reportedly the largest ro/ro's in the world—during christening ceremonies held in Malmo, Sweden. The ro/ro's are the first two of a \$250 million, four-ship order awarded to the Swedish shipyard Kockums AB.

Although both vessels were christened at the same time, the Saudi Abha was delivered ahead of schedule. The remaining vessels including the Saudi Diriyah, will be delivered in 1983.

Each of the 38,500-dwt vessels has a capacity in excess of 2,000 TEUs—20-foot equivalent units. With an overall length of 251 meters (823 feet 6 inches) and a width of 32.26 meters (105 feet 10¼ inches), the vessels have the equivalent of 6 kilometers of roads onboard. Designed with a service speed of 19.5 knots, there are thrusters fore and aft to facilitate maneuvering.

The stern ramp has a 400-ton loading capacity, enabling vehicles to load and discharge simultaneously. The hoistable car decks of either vessel could accommodate 450 American-size cars. Much of the cargo being imported by Saudi Arabia includes such vehicles, buses, cranes, and earth-moving equipment.

The ro/ro's will join the Saudi Riyadh and Saudi Makkah in the established NSCSA trade route after undergoing sea trials, Dr. Abdulaziz Al-Turki, the line's managing director, said.

In addition to the increased cargo capacity provided by the new vessels, the expanded fleet will allow NSCSA to increase the

frequency of its calls at the ports, shortening the time between sailings from 30 days to approximately 15 days.

The new ships also enable NSCSA to realize its goal of expanding its trade route to include the Far East.

"The Saudi Abha will be operated on one integrated service, connecting our country with the two most important trading na-

tions for Saudi Arabia—the Far East and the U.S. East Coast," Dr. Al-Turki said.

Sheikh Mohammad Al-Sugair, chairman of the NSCSA board of stockholders, dedicated the vessels in a ceremony that adhered to traditional Islamic custom, using water from the sacred spring Zam-Zam inside the grand Mosque at Mecca. Joining Sheikh Al-Sugair and Dr. Al-Turki from NSCSA was Mohammad Al-Issa and Jamail Abdul Razaq. Saudi Ambassador to Sweden Muhammad Muhammad Khogair also attended the ceremony, accompanied by the Swedish Minister of Industry Roine Carlsson and Nore Sundberg, permanent Under Secretary for the Swedish Department of Industry.

## Title XI Sought For \$60-Million Jackup To Be Built By Levingston

Maritime and Offshore Equipment Leasing Co., a subsidiary of Paden, Inc., Orange, Texas, has applied for a Title XI guarantee to aid in financing the construction of a 225 by 234-foot jackup offshore drilling vessel.

The vessel, which is proposed to operate in the offshore exploration industry, will be built by Levingston Shipbuilding Co., also in Orange, and delivered in June 1984.

If approved, the Title XI guarantee would cover \$45 million or 75 percent of the estimated actual cost of \$60 million.

## Aeroquip Names Manager, Contract Administration, For Marine/Military Products

Roderick K. Bowen has been promoted to manager, contract administration for Aeroquip Corporation's Industrial Division marine and military product lines. He will be based at division headquarters in Van Wert, Ohio.

Mr. Bowen assumes responsibility for contractual obligations with the Industrial Division's government and prime contractor accounts. In addition, he will also supervise the marine/military product customer service group.

A native of Willshire, Ohio, Mr. Bowen joined Aeroquip in 1958, and has served in production, engineering and customer relations capacities. Most recently, he was supervisor of customer service for special product categories.

Aeroquip Corporation of Jackson, Mich., is a subsidiary of Libbey-Owens-Ford Company (LOF). A worldwide leading manufacturer of fluid power and fluid system components, Aeroquip's diversified product lines include flexible hose, fittings and assemblies; quick-disconnect, V-band and mechanical pipe couplings and accessories; hydraulic and pneumatic cylinders; ball, rotary and swivel joints; custom engineered rubber products; spring brakes; cargo control equipment; refrigeration / air-conditioning components; railroad products and aerospace components.



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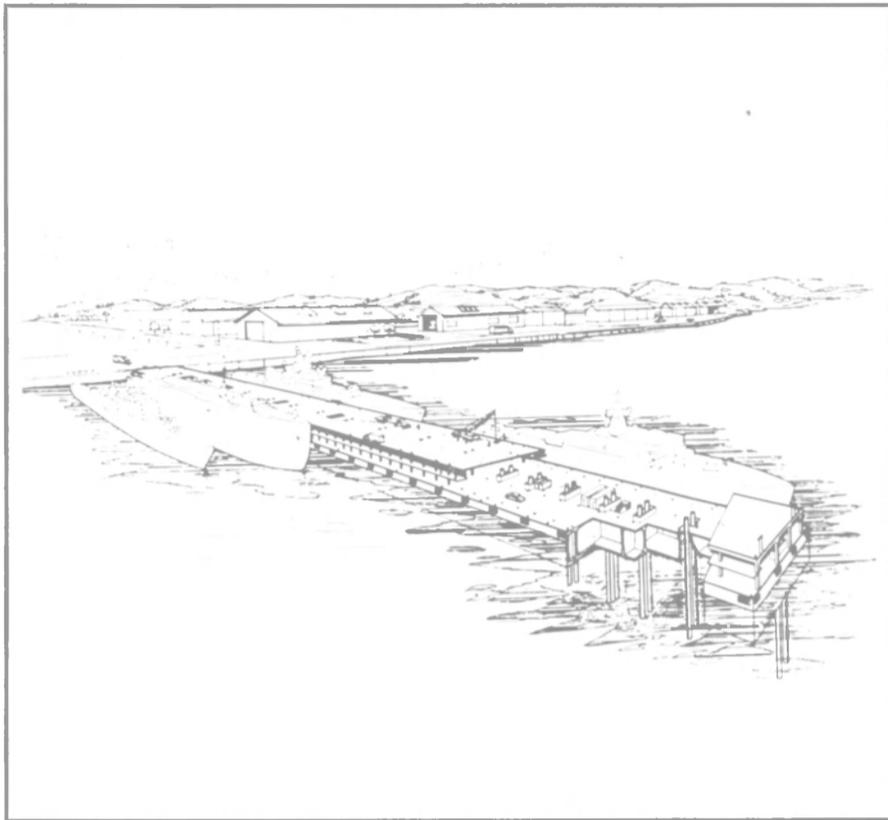
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Artist's drawing of the floating pier design developed by the Naval Civil Engineering Laboratory, Port Hueneme, Calif. The double-deck concept features a 20-foot (above waterline) top deck, at an elevation closer to the quarter deck of a modern ship. The concrete structure, by rising with the tide, maintains a constant elevation with the berthed vessel. This capability reduces the need to tend mooring and utility lines between the pier and the ship. Note the use of vertical steel pilings for mooring the pier and the modern resilient fendering that replaces present timber pilings that require frequent replacement and/or maintenance.

## Navy Civil Engineering Lab Completes Studies On Future Pier Designs

The Naval Civil Engineering Laboratory (NCEL), Port Hueneme, Calif., a leading investigator of innovative pier designs for surface combatant ships such as frigates, destroyers, and cruisers, has completed two comprehensive studies to generate new design ideas and to influence future pier construction. One concept—a floating pier—was developed under contract with T. Y. Lin International, San Francisco. The other new design—a function-formed pier—was developed under contract with Sidney M. Johnson & Associated, Union, N.J.

The laboratory's effort to improve pier designs and thereby improve shore support is sponsored by the Naval Facilities Engineering Command (NAVFAC). The task is part of the Naval Facilities Systems Project, guided by a Navy decision "to acquire, operate and maintain piers which are cost effective and responsive to changing user (new ships') requirements."

Duane Davis, NCEL project engineer, said the first steps taken were to identify ship requirements; to analyze current deficiencies and problem areas; and to develop design criteria.

Both NCEL pier proposals incorporate the shore services that

will meet the requirements of Navy ships through the 1990s. The laboratory favors the floating pier concept—it is judged to have many advantages over any pile-supported concept.

NCEL's conceptual design calls for a double-deck floating pier, 1,200 feet long and 75 feet wide. It can be constructed of two 600-foot modules at an offsite construction yard, and then floated into place. The main, upper deck stands 20 feet above the water line. It contains cargo stairwells, electrical service outlets, and trash wells, and also provides the clear deck required by the Navy. The lower deck has space for electrical substations, waste holding tanks, vehicle traffic, storage, and solid waste containers.

The NCEL concept also includes the pier's structural system, fender system, anchoring system, and construction methods.

Mr. Davis cited the following advantages of a floating pier:

- On-site construction time is reduced because only 58 anchoring piles are driven, while a conventional pile-supported pier requires hundreds of piles. As the pier modules are constructed off-site and floated into place, significant time is saved. Replacing a fixed pier with another fixed

pier requires at least 18 months, but out-of-service time could be decreased by 12 months if a floating pier were installed.

- Since the pier rises and falls with the tide, its elevation remains constant. Restraining lines do not require constant tending and utility lines can be shorter.

- A modern fender system contacts the ship at the waterline and remains constantly in position because the pier and the ship move together with the tide. Fender piles and camels—floating fenders—are eliminated, greatly reducing pier maintenance costs.

- A floating pier is an ideal concept for two-deck configuration. Two decks provide more flexibility and responsive service than does a wider, conventional single-deck pier. Also, pier functions can be separated efficiently.

- The design is adaptable to a wide range of site conditions. For typical sites, guide/restraining piles are located along the pier centerline. For sites with atypical conditions, other types of mooring/restraining systems can be used.

- The pier modules can be towed to a new site and reinstalled if the need justifies the expense. Prior to relocation, the guide piles are removed, the ramps and utility lines disconnected.

- The design offers significantly better protection from earthquakes than a fixed pier.

The laboratory's new pier concepts were influenced by recommendations emanating from a 1981 Navy workshop on "Pier Designs for Fleets of the 1990s and Beyond." The NAVFAC/NCEL study group reviewed and evaluated a cross-section of fleet requirements, problems, priorities, and proposals. The workshop structured definitive guidance for NCEL in its designs.

Mr. Davis said plans call for the laboratory to conduct cost-benefit studies of the floating pier concept to demonstrate its economic feasibility and operational advantages. A second workshop, scheduled for next summer, will review and critique pier designs generated by NCEL and NAVFAC field divisions.

### Navy Awards Bath \$5.5-Million Increase For Ship Service Generators

Bath Iron Works Corporation, Bath, Maine, has been awarded a \$5,549,618 face-value-increase to a previously awarded cost-plus-fixed-fee contract to provide ship service diesel generators for FY-83 FFG-7 class ships. The Supervisor of Shipbuilding, Conversion and Repair, Bath, Maine, is the contracting activity (N000-24-82-C-2023).

### American Flagships Seeks Title XI Guarantee For Two Passenger Vessels

American Flagships, Inc., New York, N.Y., has applied for a Title XI guarantee to aid in financing the construction of two 40,000-deadweight-ton passenger vessels that could readily be converted into hospital ships.

The diesel-powered vessels, 860 feet long and 106 feet abeam, are expected to operate on the East Coast of the United States and the nearby foreign trade.

No builder has been determined and delivery is expected by October 1985 and 1986. If approved, the Title XI guarantee will cover 75 percent of the estimated actual cost which is still being negotiated.

### New Marine Insurance Brochure Available From Skuld In Norway

A new 12-page full-color brochure has been made available by Skuld of Oslo, Norway, outlining the many insurance advantages offered by Skuld including their system based on the principal of mutuality. Through this association, liability is shared between many thousands of member vessels through reinsurance with other important P & I associations (The International Group of which Skuld is a member).

There are vessels belonging to almost every major fleet in the world which are members of the group.

Modern electronic data processing equipment handles all claims. All members of the association benefit from EDP. Because of the speed and efficiency with which all data is handled, a stable level of premiums has been achieved over the last few years.

The Skuld philosophy is a simple one. Skuld states the more vessels which share the liability, the less it is felt by each individual ship. Because of the large number of member vessels, Skuld reports it is among the largest P & I association in the world. Their portfolio consists of all types of ships throughout the world, and in total, covers about 10% of the total world tonnage.

For a free copy of the informative Skuld brochure and full details on new insurance conditions for 1983/1984,

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## Dravo Appoints Three Senior Officials In Its Marine Construction Organization



Niland B. Mortimer

C. van Mook

Larry A. Greene

Dravo Corporation of Pittsburgh, Pa., recently announced three senior management appointments in its recently established marine construction organization.

**Niland B. Mortimer** has been named vice president, manufacturing, for Dravo Marine Equipment Company. Previously vice president, sales, at Dravo's Neville Island facility, he will be responsible in his new position for all manufacturing operations and marine engineering functions. A registered professional engineer with more than 20 years of service with Dravo, Mr. Mortimer replaces Peter Kurlak, who retired.

**C. van Mook** has been appointed manager, design and production engineering. A registered professional engineer with Dravo for 18 years, he will be responsible for all design and production engineering activities carried out by the unit.

**Larry A. Greene** was named as manager, marine sales and marketing. Mr. Greene has served for the past five years as Dravo's manager, marine sales.

Dravo Marine Equipment Company is a consolidation of the marine equipment sales and manufacturing operations of Dravo's former Engineering Works Division.

### \$6-Million Parts Contract Awarded Kollmorgen

Kollmorgen Corporation's Electro-Optical Division, located in Northampton, Mass., recently announced the award of an approximate \$6-million contract from Thyssen Nordseewerks GmbH, West Germany. The contract covers spare parts and test equipment to maintain periscopes previously purchased by the Thyssen Emden yard.

### IMM Opens Office In Oxnard, California, To Serve Offshore Sector

International Moorings & Marine, Inc. (IMM), a wholly owned subsidiary of IMM Energy Services & Technology, Inc. headquartered in New Iberia, La., announced recently the opening of an area office in Oxnard, Calif., for the purpose of offering readily available anchor-handling and mooring services on the West Coast.

**Wayne Jeansonne**, vice president, stated that the increase in drilling activity in offshore California warrants keeping experienced crews and equipment in California for deployment on short notice. Previously the company dispatched crews to the West Coast from New Iberia. Mr. Jeansonne further stated that IMM's customers will realize a considerable cost savings by eliminating air fare and reducing crew travel expense.

**Kenneth Maggard** has been

named area manager for California. Mr. Maggard was previously anchor-handling and mooring operations manager in New Iberia.

### \$32.6-Million Title XI Sought For Purchase And Rebuilding Of RO/RO

Acadian Shipping Corp., a subsidiary of Apex Resources — an affiliate of the Berger Group, Lake Success, N.Y.—has applied for a Title XI guarantee to aid in financing the purchase and reconstruction of the 17,525-dwt RO/RO vessel Atlantic Bear.

MarAd has conditionally agreed to sell the roll-on/roll-off vessel to Aquila Partners Corp., another Berger Group affiliate. The vessel is owned by Pacific Far East Line, Inc., which went into receivership on August 2, 1978. MarAd holds a mortgage on the ship.

The agreement to purchase the vessel is conditioned upon Title XI financing for the project. The vessel was built by Sun Shipbuilding Corp., Chester, Pa., in 1970. It will be converted into a car carrier and will operate on the U.S. East Coast.

As provided in the conditional sale agreement, the Title XI guarantee, if approved, would cover 87½ percent of the depreciated actual cost of the vessel plus 87½ percent of the actual cost of the improvements to be made, for a total guarantee of \$32,687,000.

### SKF Couplings Described In Free 26-Page Full-Color Brochure

The OK coupling, manufactured by SKF Steel, Coupling Division, is described in detail with text and full-color photos in a 26-page ring-bound brochure now available free of charge.

Titled "No Screws. No Bolts. No Flanges. No Keys," this informative book includes a series of pages made of transparent acetate overlays. Each contains a full-color illustration of a section of the coupling. When each page is lifted, it reveals, section by section, the full internal construction of the OK coupling.

The book states there are three basic types of rigid couplings: the conventional flange coupling, the conventional muff coupling, and the unconventional OK coupling. The manufacturer states the unique design of the OK coupling eliminates many of the objections of conventional cou-

plings while providing advantages not available with any other design. These include simpler mounting and de-mounting, minimum space requirements, more secure and more powerful connection, greater torque transmission, and no keys or keyways which allows a reduction in the dimensions of both shaft and coupling.

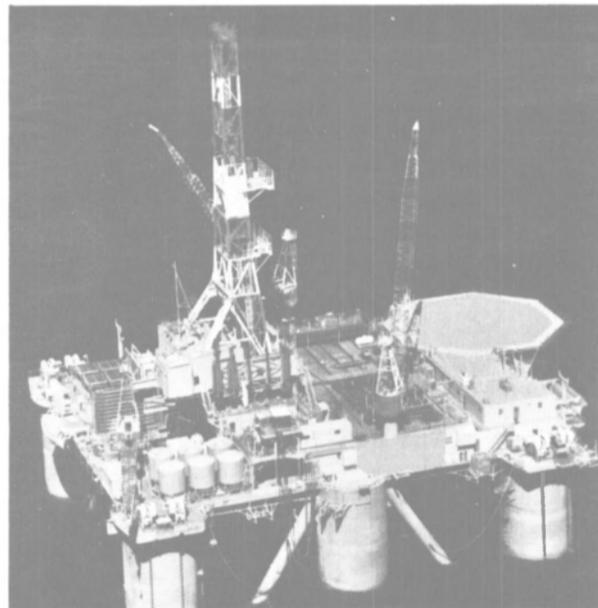
Other pages contain complete data, photos of coupling components, a comparison with conventional couplings, color illustrated directions for mounting and de-mounting, and a series of full-color photos of vessels of all types throughout the world currently equipped with OK couplings.

A list of sales and service locations throughout the world is included. In the United States, SKF OK coupling sales headquarters is located in Avon, Conn.

For a free copy of the 26-page OK coupling brochure,

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## Joseph Farrell Selected As New AWO President



Joseph A. Farrell III

Joseph A. Farrell III has been selected as the next president of The American Waterways Operators, Inc. (AWO), the national trade association for the U.S. barge and towing industry.

Mr. Farrell comes to AWO from Pullman Power Products Corporation, where he served as senior vice president. His experience also includes eight years as administrative assistant to Senator Charles H. Percy (Ill.), five years with the Peace Corps, and a 12-year career as an officer in the U.S. Navy.

"The breadth and quality of Joe Farrell's background will be assets to the association as it faces some crucial tests in 1983 and beyond," AWO chairman Thomas L. Gladders said. "His experience in management and Congressional affairs—combined with his dynamic nature—make him the right man for the job."

Mr. Gladders headed a search committee that undertook an extensive review of candidates for the position. The selection of Mr. Farrell was ratified by the AWO board of directors at its recent quarterly meeting in New Orleans.

Mr. Gladders said that the barge and towing industry "is battling for its economic life right now. We face not only the adverse consequences of poor economic conditions, but also the threat of increased user taxes, as proposed by the Reagan Administration. The association must have the best possible leadership during this period."

As senior vice president for Pullman Power Products Corporation for the last two years, Mr. Farrell was responsible for the development and implementation of long-range planning for the company, which is headquartered in Williamsport, Pa. From 1977 to 1980, he served as vice president-government affairs for Pullman, Inc., and handled its Washington operations, including review of Congressional and federal agency activities.

Mr. Farrell served as Senator Percy's administrative assistant from 1969 to 1977. His work with the Peace Corps, from 1964 to 1969, included one and one-half years as director of the program

in Honduras and, later, administrative positions with the agency in Washington, D.C.

As a naval officer from 1952 to 1964, Mr. Farrell served on six warships—a destroyer, a cruiser, and four submarines, three of which were nuclear powered. He served as chief engineer of the submarine "Seadragon" on the first Atlantic to Pacific polar transit.

Mr. Farrell is a graduate of the U.S. Naval Academy and also attended Brown University. He succeeds Anthony L. Kucera, who resigned last month. Mr. Farrell assumed his new position in early January.

## Navy Awards \$1.87-Million Crane Contract To Clyde

A \$1.87-million contract from the U.S. Navy for lease of two shipyard gantry cranes has been awarded to the Clyde Division of the Koehring Group of AMCA International Corporation, according to an announcement by Koehring.

The cranes, which are of a new design, designated by Clyde as the Model CBW-8800, will have a lifting capacity of 50,000 pounds at a 100-foot radius, and will be equipped with 120-foot booms plus 20-foot jibs, Clyde said. Scheduled for delivery to the Norfolk Shipyard in mid-1983, the cranes will be built at the Clyde plant in Duluth, Minn.

A leading manufacturer of revolving Whirley cranes and other specialized equipment for lifting and pulling extremely heavy loads, Clyde is one of the Koehring group of operating units of AMCA International. AMCA International is a worldwide producer of a broad range of industrial products, construction equipment, engineering and construction services, and machine tools.

## Sperry Awarded \$31-Million Contract Modification For Materials Handling System

Sperry Corporation, Sperry Systems Management Division, Great Neck, N.Y., has been awarded a \$31-million firm-fixed-price modification to a previously awarded letter contract for the installation of a Naval Integrated Storage Tracking and Retrieval System (NISTARS), a computerized, process-controlled, automated materials handling/warehouse system, at the Naval Supply Center, San Diego. Work will be performed at Great Neck (10 percent), and Naval Supply Center, San Diego, Calif. (20 percent), and the balance at 50 various contractor locations. The Naval Supply Systems Command, Washington, D.C., is the contracting activity (N00228-80-C-UQ06).

## Sonat Offshore Drilling Sets World Record

A new world's record for deep-water drilling has been set by the drillship Discoverer Seven Seas, part of the Sonat Offshore Drilling fleet. The well, in the Mediterranean off the southern coast of France, is being drilled in 5,624 feet of water.

The Discoverer Seven Seas held the previous drilling record set in 1979 in 4,876 feet of water off the coast of Canada. The exploratory well GLP-1, is being drilled in French waters for the French energy firms Total, Elf Acquitane, and Esso's French affiliate. The deepwater well is part of an exploration program to inventory France's oil and gas resources in the western Mediterranean.

Sonat Offshore Drilling reports that the record well is located about 70 miles south-southwest of Marseilles. Another well is scheduled to be drilled nearby for the same parties in a water depth of 4,500 feet.

## En-Mar Resources Opens Headquarters In Houston —Brochure Available

En-Mar Resources, Inc., a newly formed energy and marine transportation consulting firm,

has opened its headquarters in Houston, Texas.

Randolph L. Kelley, En-Mar's president, recently announced the firm was formed to provide professional, technical, and nontechnical services to companies operating the oil, gas, and marine transportation industries.

Mr. Kelley, who was formerly with the El Paso LNG companies for the past 16 years, reported that the firm will specialize in assisting firms concerned with the purchase, marine transportation, and sale of energy. A brochure is available describing En-Mar's range of services.

For a free copy,

Write 46 on Reader Service Card

## Todd Pacific Receives \$8-Million Contract Increase For PSA Work

Todd Pacific Shipyards Corporation, Los Angeles Division, San Pedro, Calif., has been awarded a \$8,261,583 face-value-increase to a previously awarded cost-plus-fixed-fee contract for industrial work to be accomplished during post shakedown availability (PSA) for FFG-19. The Supervisor of Shipbuilding, Conversion, and Repair, Naval Station, Long Beach, Calif., is the contracting activity (N00024-80-G-2145).

## Ship Model Basin Dedicated At N.Y. State Maritime College

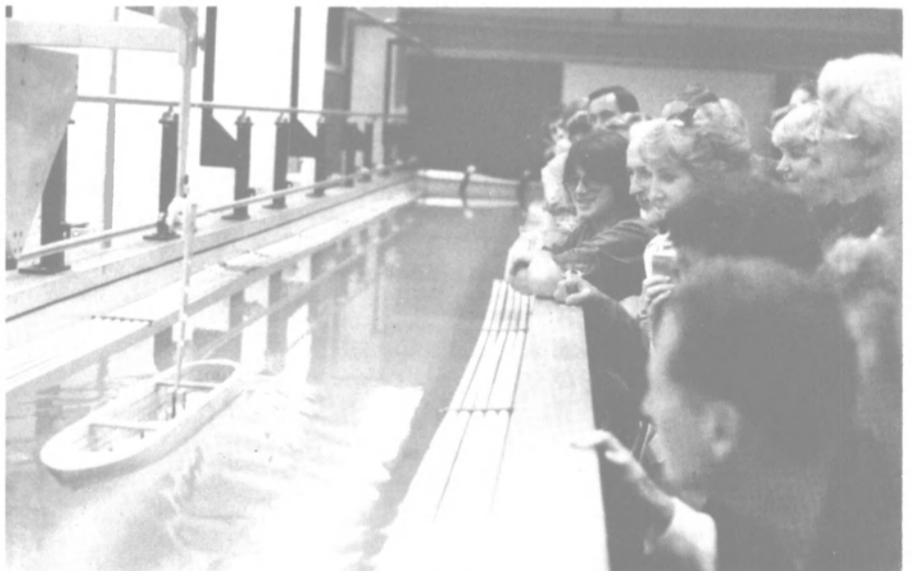
The Engineering Department of the State University of New York Maritime College, Fort Schuyler, Bronx, N.Y., recently held the dedication of its newly constructed ship model basin.

Prof. Jose Femenia, chairman of the college's engineering department, announced that its availability adds another dimension to the college's highly-ranked naval architecture and ocean engineering curricula. The tank allows students and faculty to become more closely involved in

hydrodynamic experimentation related to ships and offshore drilling rigs.

The ship model basin was designed and constructed by the staff of the SUNY Maritime College's engineering department.

The basin and ancillary equipment were purchased with non-state funds, mainly from the Alumni Association college support drive, from the Maritime College at Fort Schuyler Foundation, and from the National Science Foundation.



Visitors at dedication view the first official demonstration of the new model test basin at Fort Schuyler.

## New Ferry Contract For Over \$1-Million Awarded To Offshore Shipbuilding

The North Carolina Department of Transportation has awarded a contract "in excess of a million dollars" to Offshore Shipbuilding of Palatka, Fla., for the construction of a 250-passenger/vehicle ferry.

The contract is the second for a ferry awarded to Offshore Shipbuilding since October 1982, when the firm launched construction on a \$4.5 million, 1,200-passenger "cruise ship" ferry for service in the State of New York.

**Anthony M. Tenore**, vice president and general manager of Offshore Shipbuilding, said his yard was low bidder among "25 major shipyards" that wanted the North Carolina ferry job.

The vessel will be of standard design by the North Carolina Department of Transportation, Ferry Division, with detail work by Bold Craft Engineering of Jacksonville, Fla. The design calls for an open vehicle deck extending the length of the ferry with two 40-foot passenger cabins located amidships on both sides. An overhead deck spanning the two cabins will accommodate the pilothouse.

Overall length will be 129.6 feet, with a beam of 40 feet, and a 9-foot depth to make the ferry serviceable in various rivers and sounds in North Carolina. Loading and offloading will be possible at both ends but unlike standard double-ender ferries, the vessel will have propulsion at only one end in the form of twin Caterpillar 3412 diesels.

Mr. Tenore said construction will begin early in January with delivery scheduled for April of 1984.

## Lykes Ship Sends Data By Satellite-Phone Hookup

Lykes Bros. Steamship Co., Inc., New Orleans, La., recently demonstrated a reliable, inexpensive method of transmitting data at medium speed from ship to shore via satellite and regular telephone lines.

Lykes made repeated transmissions between one of its ships, the *Cygnus*, and shore on a recent voyage as part of a Maritime Administration-sponsored program. Lykes is the first company to participate in such a satellite-telephone ship data transmission for which technical results are being published.

The ship-shore data communication can be used to transmit cargo and payroll information and vessel performance information.

Two Lykes ships, the *Cygnus* and the *Lyra*, are participating in the Advanced Maritime Com-

munications Technology Joint Research and Development Project. The project is sponsored by the Council of American-Flag Ship Operators (CASO) as part of the Maritime Administration's fleet management technology program. ARINC Research Corp. of Annapolis, Md., is a subcontractor to CASO on the project.

One of the project's objectives has been to establish a reliable, inexpensive, medium-speed data connection between ships and their home offices using INMARSAT's satellites, ships equipped with satellite antennae, and public switched telephone lines.

## Oceans '83 Conference Issues Call For Papers

The Marine Technology Society (MTS) and the Institute of Electrical and Electronic Engineers (IEEE) Council on Oceanic Engineering (COE) have invited papers from all interested authors for the Oceans '83 Conference and Exposition.

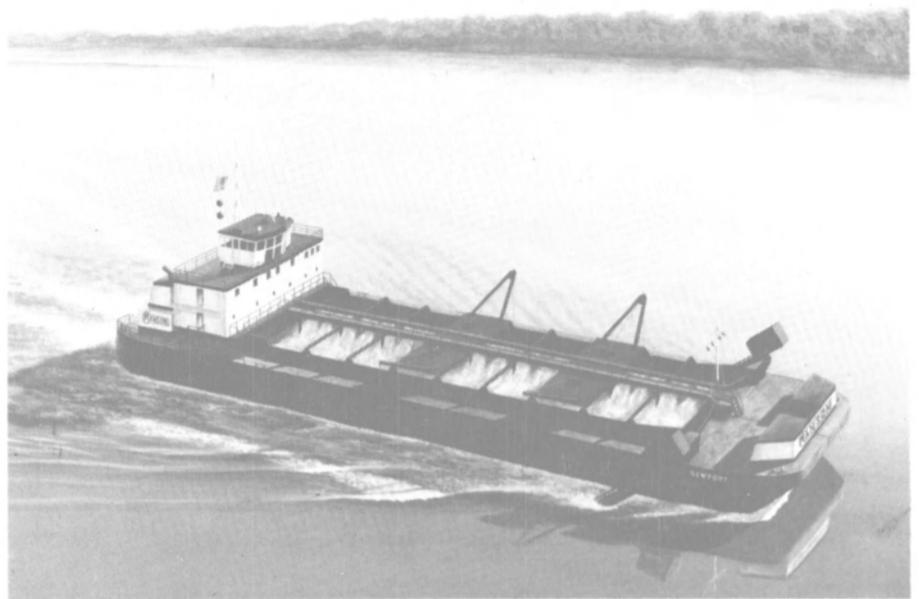
Each accepted paper will be presented at the conference in San Francisco, Calif., which will be held at the Hilton Hotel, August 29-September 1, 1983. All accepted papers will be published in the Proceedings and mailed to the participants at the conclusion of the conference. Deadline for the receipt of abstracts of the papers is Feb. 11, 1983.

The theme of Oceans '83, "Effective Use of the Sea — An Update," underscores the objectives of marine science and technology to explore, conquer, develop, and utilize ocean resources for the benefit of mankind. The goal of the conference will be to identify current and future technology, knowledge, and programs needed to achieve these objectives by the year 2000.

Papers are requested which highlight technological advances in the understanding, use, and recovery of marine resources, and identify and/or suggest other technologies that could be used to advance marine science and engineering.

Oceans '83 will be international in scope and will focus on the science and technology required for the utilization of five major ocean resource areas: mineral resources and energy; non-mineral resources; transportation; ocean science; and military ocean engineering. The emphasis in each of these areas will be on technologies, technology assessment, application, and programs. Papers that address other important developments applicable to marine science and technology will also receive consideration.

For a copy of a detailed Call for Papers, contact Oceans '83, Technical Program Chairman, P.O. Box 71030, Sunnyvale, Calif. 94086.



Two GM Detroit Diesel engines will supply the main propulsion for the new dredge and another two Detroit Diesels will power the drag arms. Maritime Industries Ltd. of Canada supplied two Z-drive steerable propellers and a new thruster.

## Nichols Brothers Yard Starts Work On 265-Foot Split-Hull Hopper Dredge

Work commenced at Nichols Brothers Boat Builders, Inc. Whidbey Island yard, Freeland, Wash., recently on the initial phase of a 265-foot by 54-foot by 22-foot self-propelled trailing suction split-hull hopper dredge. Manson Construction & Engineering Company of Seattle, Wash., is the customer for this unusual work vessel.

The hull is made up of two longitudinal half sections hinged together at the deck. This split-hull concept was conceived before the year 1900 and has been used primarily in dump barges. Manson's new dredge, provisionally named *Newport*, being self-propelled, will be a new departure from their traditionally tug-assisted barges.

Through this design, **Robert W. Long**, Seattle-based naval architect, has provided Manson

with a vessel capable of dredging mud and sand to a depth of 65 feet. Hopper capacity is 4,000 cubic yards. The drag arms are operated by two Detroit Diesel 16V149 diesel engines and two additional Detroit 16V149s will propel the dredge at a speed of 10 knots with a light load and 8 knots when loaded.

The propulsion system, featuring two "Z" drive steerable propellers and a bow thruster, is from Maritime Industries Ltd., Vancouver, B.C. The 18-man crew will be comfortably housed in a centrally heated and air-conditioned deckhouse.

When the first phase has been completed in March 1983, then construction of the superstructure, wheelhouse, and living quarters will follow, with total completion due in May 1983.

## Ehrenfried Of Metritape Presents Paper At SNAME New England Meeting

The recent meeting of The Society of Naval Architects and Marine Engineers, New England section, held at the New England Aquarium, Central Wharf, Boston, Mass., featured the presentation of a technical paper entitled "Marine Installation and Operating Requirements for Continuous Electric Liquid-Level Gauging Equipment."

The paper was delivered by **Albert D. Ehrenfried**, founder and president of Meritape, Inc. of Concord, Mass. The author first presented an overview of the liquid-level gauging requirement for a wide range of marine float-

ing structures, including tankers, drydocks, drill rigs, and military vessels. Applications he described included the accurate determination of cargo, ballast, and fuel oil levels; the measurement of ship's draft, trim/list, hog/sag; and the quantification of compartment flooding for naval damage control.

The principles and performance characteristics of electric distributed-resistance level gauging equipment developed by the author were then set forth, along with current practices for integrating such gauging into the hull structure. Human factors relating to the equipment, including training for familiarization, calibrating procedures, and trouble-shooting, were also discussed.



## MAN-B&W Diesel Holds Symposium For West Coast Marine Industry Leaders

A diesel engine symposium conducted recently in San Francisco by MAN-B&W Diesel was very well attended by a wide cross section of important West Coast shipowners, operators, and naval architects.

A brief introduction by the president of American MAN Corp., K. Peter Koch, was followed by a presentation by the president of B&W Diesel, Inc., Claus Windelev, describing the combined MAN-B&W Diesel U.S. sales and service organization.

The balance of the symposium

was devoted to the latest technology and the economic considerations associated with low-speed as well as medium-speed diesel engines. MAN-B&W Diesel has one of the largest combined diesel engine programs in the world.

MAN-B&W reported that the strong interest in the subject shown by those attending the symposium is further evidence of the increasing importance of diesel engine technology among U.S. marine industry decision makers.

## Bruce D. Smith Elected President Of COMSAT Technology Products

Comsat of Washington, D.C., announced that **Bruce D. Smith** has been elected president of Comsat Technology Products, Inc. In this newly created position, Mr. Smith is responsible for the management of the corporation's telecommunications equipment manufacturing and marketing activities. His election furthers the implementation of a corporate reorganization announced in September of last year.

Comsat Technology Products, including two wholly owned subsidiaries, Amplica and TeleSystems and several internal technology ventures, produces and markets digital and microwave telecommunications equipment. Amplica, based in Newbury Park, Calif., manufactures a wide range of standard, low-noise, medium-power and general purpose microwave equipment for defense and commercial markets. TeleSystems, located in Fairfax, Va., primarily manufactures digital electronics products, including echo cancelers and time-division multiple-access equipment, as well as maritime communications satellite shipboard terminals.

Commenting on Mr. Smith's election, **Irving Goldstein**, executive vice president of Comsat, noted: "Bruce Smith brings to this position both extensive en-

trepreneurial and management experience. His talents and vision will enhance the development of our equipment manufacturing activities that are now growing into a major area of the corporation's businesses."

Mr. Smith most recently served as Comsat's vice president, corporate development, in which he was responsible for the development and implementation of the corporation's strategic business plans. From 1980 to 1981 he was vice president for planning and new ventures of Comsat General Corporation, in which position he was primarily responsible for Comsat's 1982 acquisition of Amplica.

Before joining Comsat General, Mr. Smith was chief executive officer of several advanced technology manufacturing companies, and a partner of Crisman, Fossum, and Smith, a San Francisco-based management consulting firm.

## \$50-Million Oceanographic Systems Contract Awarded To Western Electric

Western Electric Company, Greensboro, N.C., has been awarded a \$50,117,903 cost-plus-fixed-fee contract for oceanographic systems. The Naval Electronic Systems Command, Washington, D.C., is the contracting activity (N00039-83-C-0100).

## Contromatics Appoints MacAfee Vice President Of Engineering

The appointment of **Jerry D. MacAfee** as vice president, engineering of Contromatics Division, Litton Industrial Products, Inc., East Hartford, Conn., was announced recently by company president **John P. Kempton**.

In this new management position, Mr. MacAfee assumes overall responsibility for product engineering, research, development, and quality assurance.

Beginning his career with General Electric, Turbine Mechanical Design, for the last 15 years he has been with Jamesbury as senior engineer, actuators, and projects, and since 1974, chief engineer, butterfly valves.

Contromatics is a major manufacturer of high performance butterfly valves, ball valves, and pneumatic actuators for the chemical, petrochemical, pulp and paper, power, and marine industries.

## SKF Couplings Establishes U.S. Sales Office

### —Literature Available

Sales of SKF Steel's OK Shaft Couplings will be handled in the U.S. from the Coupling Division's newly established U.S. Sales Office in Avon, Conn. The announcement was made by the manager of the division in Hofors, Sweden.

The SKF OK Coupling provides a simple, safe, fast and efficient method of connecting shafting without the need for nuts, bolts, flanges or keyways, and is manufactured in sizes ranging from 25 millimeters to 1,000 millimeters.

A demonstration of mounting and dismounting an OK Coupling will be offered to visitors to the Work Boat Show '83 in the Superdome, New Orleans, February 3, 4, 5 and 6 at the SKF Coupling Division's Stand No. 1071/1072.

For further information and a copy of the OK Coupling brochure, Write 45 on Reader Service Card

## MacGregor To Equip 30 Barges, 3 Ships Building In Japan For Paraguay

MacGregor Far East (MGFE), the Tokyo-based member of the MacGregor International organization, has received orders to supply cargo access equipment for 33 vessels to be built for Paraguay. Thirty are dry cargo barges to be delivered by Mitsui Engineering & Shipbuilding in knocked down form for assembly in Paraguay. The remaining three are general cargo ships to be built in Japan by subsidiary/affiliate companies of IHI and Mitsui.

Land-locked Paraguay is de-

pendent on barge traffic for its commerce. Access to the sea is near Buenos Aires, Argentina, via the Parana and Uruguay Rivers on which the new barges will carry grain, soya bean, cement, and other bulk cargoes.

All the vessels — barges and cargo ships — are part of a package negotiated by Japanese trading houses for Paraguay's state-owned Flotta Mercante del Estado of Asuncion. Deliveries of the barge components will start soon, while delivery of the cargo ships is due in 1983.

The barges are of two capacities — twenty 360 dwt, and ten 800 dwt. Both are of similar design. The hatch covers to be supplied by MGFE for each design are, apart from size, identical. They are of the telescopic type each one comprising two, three-element sets, the cross joint of each set meeting at the center of the division between the two holds.

The coaming extends beyond the fore and aft ends of each hatch, a feature which in stowage, enables the sets to be telescoped clear of the end coamings, providing a 100 percent clear opening of each hatch.

One 6,000-dwt general cargo ship, to be built at Ishikawajima Ship & Chemical Plant, is geared 'tweendecker with three holds sized to carry containers both within and on top of the hatches.

MGFE will supply double-skinned single pull covers for the weatherdeck hatches and lift off flush-with-deck pontoon covers for the 'tweendecks. Actuation of the weatherdeck covers is by chain drive from a hydraulic motor. The pontoon covers will be handled by the ship's 15- and 25-ton derricks.

Two smaller general cargo ships are to be built at the Mitsui affiliate Kanrei Shipbuilding of Tokushima. They are geared, single-decked, two-hold vessels of 1,500 dwt. MGFE will supply wire operated single-pull hatch covers.

## \$948-Million Navy Order To British Shipbuilders For Falkland Replacements

British Shipbuilders Corp. recently received orders worth \$948-million for vessels to replace those lost in the Falklands.

The government announced that there will be orders for five new Type 22 super frigates to replace the four frigates lost in the campaign and replacement of the logistics landing ship Sir Galahad. Ship repair yards also will equip some existing warships with added defense systems.

The government said also that defense features will be incorporated in the ship built to replace the 15,000-ton Cunard container-ship Atlantic Conveyor.



## **BAYOU STEEL EMERGES AS A TOUGH SKINNED COMPETITOR.**

On the Bayou the alligator is the master of his environment. His tough hide and sharp teeth enable him to dominate and survive.

Bayou Steel emerges as a new breed of steel producer with high quality, modern, and efficient steel production to meet today's competitive markets.

Your business demands a supplier able to perform and survive. Bayou Steel can do both. Call us and let our alligator get his teeth into your steel requirements.

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## Blackinton To Manage Beth Marine Construction Operations And Facilities

Richard E. Blackinton has been appointed general manager of operations and facilities of Bethlehem Steel Corporation's marine construction department, it was announced recently by David H.

Klinges, vice president in charge of marine construction.

Mr. Blackinton, who is general manager of Bethlehem's shipyard in Hoboken, N.J., is succeeding Herbert I. Freinberg, whose retirement has been announced.

In his new position at corporate headquarters in Bethlehem, Pa., Mr. Blackinton will be re-

sponsible for all shipyard production matters in addition to capital planning and budgeting, overhead maintenance budgets, and maintenance practices of the marine construction department.

Mr. Blackinton joined Bethlehem Steel's management training program for college graduates in 1951 and was initially assigned to the Hoboken Yard.



Richard E. Blackinton

He was transferred to the corporation's former yard in Brooklyn in 1953 and two years later returned to Hoboken as a planner and then estimator. In 1957 he was assigned to shipbuilding headquarters, then located in New York City, as assistant to construction engineer and later as technical assistant to vice president. In 1966 he returned to the Hoboken Yard as a ship superintendent and became assistant project superintendent at the San Francisco Yard later that year.

Mr. Blackinton was promoted to general superintendent at Bethlehem Steel's shipyard in Beaumont, Texas, in 1969 and subsequently served there as plant engineer, methods engineer, and assistant to general manager. He returned to the Hoboken Yard as general superintendent in 1978 and the following year was named general manager.

### Free Color Brochure Offered On Comfort Mate Line Of Marine Furniture

Comfort Mate, Inc. of Miami, Fla., is offering a full color four-page brochure describing in text and in photographs its line of marine deck furniture.

The brochure includes specifications for deck chairs, single and double tube sitting chairs, bar stools, deck tables, deck umbrellas, and Ping-Pong tables.

Also included is information on custom fabrication, special services provided by Comfort Mate, and details of some of the construction features of the marine furniture.

For a free copy of the brochure, Write 49 on Reader Service Card

### \$7-Million Contract For Seven Navy Warping Tugs Awarded To Jeffboat

Jeffboat Incorporated, Jeffersonville, Ind., has been awarded a \$7,662,095 fixed-price contract for the construction of seven side-loadable warping tugs for delivery to the Naval Amphibious Base, Little Creek, Virginia Beach, Va. The tugs will be built in Jeffersonville and assembled in Norfolk. The Naval Facilities Engineering Command, Alexandria, Va., is the contracting activity (N62472-82-C-1661).

Write 396 on Reader Service Card

# The name for overall economy

# SULZER

The confirmed low fuel consumption of RTA Superlongstrokes is a bonus for shipowners that have already ordered them. But low consumption alone will not ensure economical operation. And ultralow fuel consumption and shaft speeds have their price. The answer: optimization of all the cost factors found in the overall economy of our R-type diesels; rugged, reliable design combining experience with future needs; short engines and length-saving power take-off concepts for economic auxiliary power generated by the main engine. Where engine room heights are limited, the Sulzer medium-speed Z/ZA 40 and AS/AT 25 engines offer equivalent overall economy on heavy fuel, too. And when it's time to part, the Sulzer engine will increase the selling price of your vessel.

Overall economy including low fuel consumption is no surprise.

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Send to Sulzer Brothers Limited, CH-8401 Winterthur, Switzerland  
Diesel Engine Division  
Telephone 052 811122, Telex 896165

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## PNSL And Stolt-Nielsen In Joint Venture

During a recent ceremony in Kuala Lumpur, Malaysia, **Tunku Dato Shariman**, chairman of Perbadanan Nasional Shipping Line Berhad (PNSL) and **Jacob Stolt-Nielsen Jr.**, chairman of Stolt Tankers and Terminals (Holdings) S.A., signed an agreement to establish the joint venture company, Parcel Tankers Malaysia Snd. Bhd.

The company will engage in parcel tanker operations, serving primarily the Malaysian palm oil trade. Two 6,000-dwt tankers have been taken on time-charter to serve the near sea area and the company plans to expand its fleet with purpose built ships to serve the trade on a worldwide basis as well.

The establishment of Parcel Tankers Malaysia expands the shipping activities of PNSL into the sophisticated chemical and vegetable oils parcel tanker trade and allows Stolt-Nielsen to expand into small tanker operation in Southeast Asia.

## Designers & Planners Names Conway Davis V.P.



Conway Davis

Conway Davis has joined Designers & Planners, Inc. as vice president and manager of the Field Offices Division. The announcement was made recently by **Ferd Serim**, president of the company. Designers & Planners, Inc. is a naval architecture and marine engineering firm with headquarters in Washington, D.C., and offices in Philadelphia and San Diego. Mr. Davis's association with D&P illustrates the company's determination to expand its services to the industry, especially in the areas of ship detail and support of construction, overhaul, and repair.

Mr. Davis will report to **Wolfgang Reuter**, D&P's executive vice president, and will direct all D&P field activities, including a new office scheduled to open soon in Jacksonville, Fla. Mr. Davis has over 20 years of experience in ship design and construction. Prior to joining D&P, he served Ingalls Shipbuilding-Litton Ship Systems, Inc. in several capacities including vice president, engineering, and most recently, director of advanced technology, responsible for leading the company's programs in research and development.

Write 721 on Reader Service Card ▶

## Ameron Names Coatings Licensee In Korea

The international Ameron Protective Coatings Division, Monterey Park, Calif., has granted a license to Sam Hwa Paint Industrial Company, Limited, of Seoul, Republic of Korea, to manufacture and market Ameron's proprietary high-performance protective coatings systems un-

der the trade names Dimetcote® and Amercoat®.

Among the five largest paint companies in South Korea, the Sam Hwa company markets its products through a network of 200 dealers and has been primarily engaged in the production of trade sales paints for architectural and light industry customers.

The addition of Ameron's inorganic and organic coatings systems for the protection of steel and concrete surfaces will permit the company to serve the country's large industrial, marine, and offshore markets. Sam Hwa is establishing a new division to handle the Ameron product line.

# Introducing SnapLight.™ It's a snap to maintain.

Now you can save time, money and labor with Russellstoll's® new drip-proof fluorescent lighting fixture for marine applications. The SnapLight fixture.

Our experience in lighting fixtures goes back 75 years to the development of our first whale oil lamp. And like all the products we've made since then, the SnapLight fixture was developed to solve a critical need of industry: an easier-to-maintain fluorescent lighting fixture.

The SnapLight fixture offers a number of innovative, labor-saving features. It's easy to maintain because the diffuser is hinged to the fixture housing—it swings down and away for easy relamping. The reflector is held in place with captive quarter-turn fasteners. This

feature eliminates loose hardware. When released, the reflector drops about four inches and is held in place by two detachable wire ropes. All electrical components are mounted on the reflector plate for quick and easy removal.

What's more, the SnapLight fixture is available in three types of housing materials: marine grade aluminum, glass filled polyester and steel. The interior module is compatible with all three types of housing so stocking is simplified. Exposed hardware—fasteners and latches—is made of non-magnetic stainless steel.

Our SnapLight fixtures meet

UL 595 and Coast Guard 293 requirements for drip-proof fixtures. It comes in both 20 and 40 watts (60 watt available upon request).

Russellstoll also makes a complete line of incandescent and HID fixtures for marine applications. So everything you need for industrial, shipboard or offshore lighting is available from a single reliable source: Russellstoll.

**Russellstoll.  
We deliver.**



Midland-Ross Corporation  
Russellstoll Division  
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Livingston, NJ 07039  
Phone: 201/992-8400  
Telex: 13-8403

**MIDLAND ROSS**

## Whitney Associates Named New Bow Thruster Agent For Elliott Company

Paul M. Cornez, White Gill Thrusters product manager for Elliott Company's Springfield, Ohio, operation—a subsidiary of United Technologies Corporation—has announced that Whitney Associates Inc. of San Diego, Calif., has been selected as the

agent to represent their new product line in California and Hawaii.

Rick Whitney, president, and his associates are well-known to the marine industry in this territory through their long standing affiliation with naval architects, shipbuilders, and ship operators.

The Elliott White Gill Thrusters provide 360 degrees of thrust which permits vessels to be ma-

neuvered in any direction, or to hold position in rough waters. These thrusters can also be used as auxiliary propulsion if needed. Since the Elliott White Gill Thruster does not extend beyond the vessel's hull lines, it stays free of underwater hazards, lines and divers, and is extremely useful on workboats. It also replaces the need for tugs on larger vessels. Models are available with up to 38,000 pounds of thrust.

As the local agent, Whitney Associates will provide product application assistance to ship designers and builders interested in improving maneuverability to dynamic positioning in their vessels.

## ABS Publishes Rules For Steel Vessels For Southeast Asia Service

The American Bureau of Shipping (ABS) has published *Rules for Building and Classing Steel Vessels for Service in Southeast Asia*. These rules, which have been approved by the ABS Southeast Asia Committee and the ABS Technical Committee, are applicable to self-propelled steel vessels under 61 meters (200 feet) in length intended for service in Southeast Asia. The cost of *Rules for Building and Classing Steel Vessels for Service in Southeast Asia* is \$20 and can be ordered through ABS offices in the U.S. and Southeast Asia.

## John Little Named Marketing Manager By Hagglund Products



John Little

John Little has been named marketing manager of Hagglund Products Division, ASEA, Inc., located in Houston, Texas. The announcement was made recently by Claes G. Spens, the division's general manager.

Mr. Little is responsible for marketing the company's high-torque low-speed hydraulic motors and hydraulic disc brakes for industry. These products are sold in North America to mining, marine, offshore petroleum, automotive, and manufacturing industries.

Before joining Hagglund, Mr. Little served with Sperry Vickers for 15 years, the last eight of them in the U.S. At Vickers he held a variety of management positions in sales, marketing planning, and product management, including assignments in Great Britain, continental Europe, and Latin America.

Previous to this, Mr. Little held various design engineering positions in Great Britain.

ASEA Inc. is a worldwide designer, manufacturer and marketer of hydraulic, electrical, electronic and robotic equipment.



USS Oliver Hazard Perry

## The John Crane MX9

# AT THE LEADING EDGE OF STERN TUBE SEALING TECHNOLOGY

The John Crane MX9 represents state-of-the-art stern tube sealing technology. This innovative design—incorporating a single convolution bellows and readily replaceable face wearing components—created a revolution in sealing design philosophy. And the MX9 represents a proven philosophy, successfully demonstrated at sea.

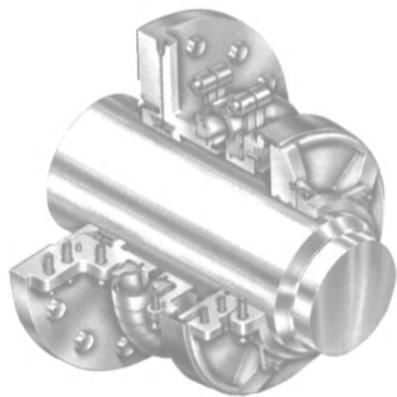
Maintaining the integrity of line shaft components, virtually eliminating corrosion problems with the line shaft bearing, providing maintenance-free operation for extended time periods and

offering an auxiliary packing provision enabling emergency shaft sealing are critical problems of fluid movement solved by the MX9 Stern Shaft Seal.

**Fact:** These are solutions that have led to U.S. Navy acceptance of the John Crane MX9 for Fourth-Flight new constructions and backfit under PSA and ROH on the FFG-7 Class.

Discover the diversity of experience in John Crane engineered sealing. That's proven performance aboard commercial and government vessels worldwide. John Crane means confidence and reliability. Put it to work for you.

For more information, contact a John Crane field engineer without obligation. Or request Bulletin M-100. John Crane, Marine and Government Division, 6400 Oakton Street, Morton Grove, IL 60053. 312/967-3873.



MX9 Stern Shaft Seal

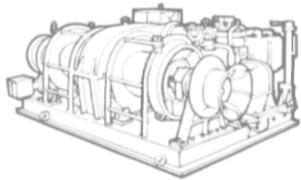
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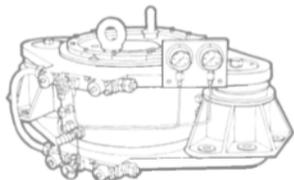
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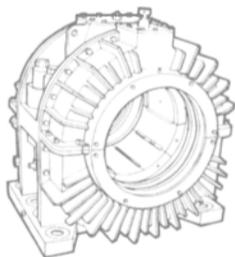
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**JERED BROWN BROTHERS INC:** Steering Gear - Deck Machinery - Aircraft, Personnel and Stores Elevators - Replacement Parts, Tooling, and Drawings Since the Turn of the Century.



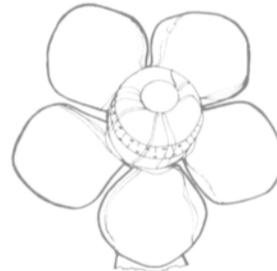
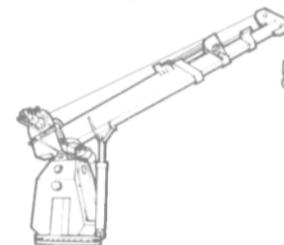
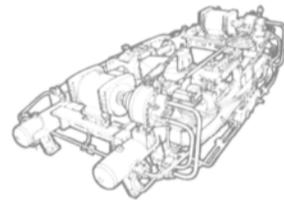
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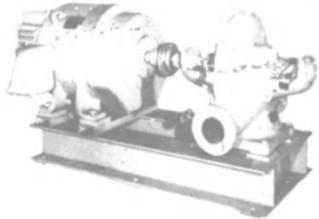
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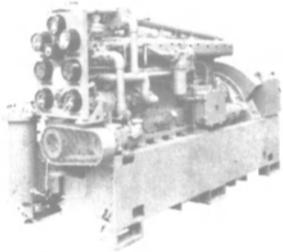
**FAIRBANKS-MORSE 750 GPM — 125 PSI  
STAINLESS STEEL CENTRIFUGAL SEA  
WATER FIRE & FLUSHING PUMP**

NEW  
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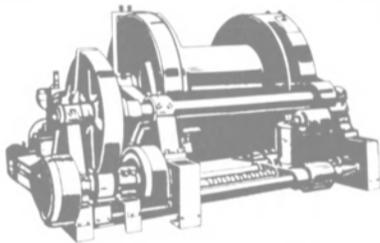
125 PSI (281 Ft.) total head. Suction lift none (flooded) 1750 RPM. With Falk #8F coupling—flexible, all metal, enclosed. MOTOR: Reliance type T—100 HP—1750 RPM—343 amps—230 volts DC—Frame 503AS. Pump has 5" suction—4" discharge. Pump & Motor mounted on base 37 1/4" wide X 6' 2 3/4" long X 3' 0 1/2" high. Total weight 3348 lbs.



**GBD-8 DIESEL GENERATORS  
100KW AT 120/240 VDC**

120/240 VDC—417 amps—stab shunt—1200 RPM—Delco generator—Self-excited. ENGINE: Superior GBD-8—8-cyl—5 1/2" X 7"—150 HP—30 volt electric starting. Reconditioned to ABS. Dry wt. 10,000 lbs—DAL 124"—65 1/8" high—42" wide. Hgt necessary to pull piston 68". Fuel consumption 0.620 lbs./hr. 6 LST take-outs in really good condition. Will run and demonstrate.

**LARGE STEAM  
TOWING ENGINE  
9 X 10 TWIN ENGINE DRIVE  
Air or Steam — 125/250 PSI**

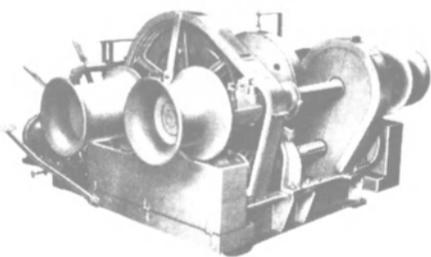


Heavy-duty Clyde with 36" diameter X 51" Face single drum. Flanges 68". CAPACITY: Up to 2800' of 2" wire rope. Normal line pull 40,000 lbs @ 50 FPM. Steam or air pressure required 125 to 250 PSI. Can be adapted to electric drive or increased steam or air pressure to a capacity of 82,000 lbs @ 20 FPM. Pawl holds 270,000 lb. pull from any layer. Equipped with level wind device. Approximate weight 30,000. DIMENSIONS: 12'6" wide—6'6" high. Write for details.

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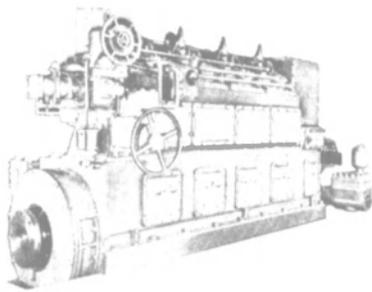
Large towing ring — 36" I.D.

**7x12 10,000 LB AH&D  
CARGO WINCHES**



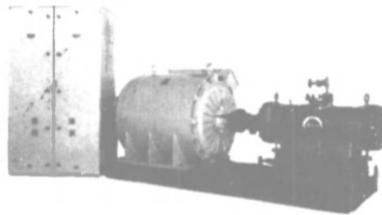
2-Speed — single drum — reverse throttle operation. LINE PULL: low gear 10,000 lbs — high gear 5,000. LINE SPEED: low gear 125 FPM based on 1st layer of 7/8" diam. rope — high gear 250 FPM based on 1st layer of 5/8" diam. rope. DRUM: 26" diam. — 20" long — 26" flange diam. Rope capacity of drum: 7/8" diam. rope in 6 layers — 650'; 5/8" diam. rope in 8 layers 1200'. Steam pressure at throttle 115 lbs. Operating weight 6450 lbs.

**NEW CLARK 500BHP DIESEL  
4-CYL. — AIR STARTING**



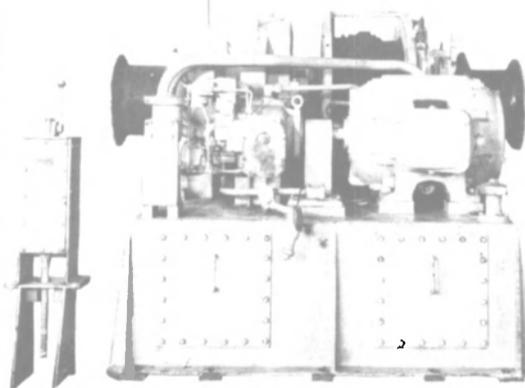
500 BHP @ 400 RPM. 4-Cylinder straight inline type — 12 1/2" X 16" — 2-stroke single acting — liquid cooled — direct reversible — CW rotation. With standard shaft-connected starting air compressor. 46,000 lbs., net weight—228" long—98" wide—132" high. Designed for heavy duty, rugged use, its extreme simplicity will result in lower operating and maintenance costs.

**700 GPM @ 150 PSI  
NEW — EX-USN  
MOTOR DRIVEN ROTARY  
HORIZONTAL PUMPS  
WITH 4-SPEED 440/3/60 MOTOR**



Inlet 8" — outlet 6". Powered by 4-speed 440/3/60 motor — 100/75/50/37.5 HP — 1200/900/600/350 RPM — with Cutler-Hammer control. Weight 10,000 lbs. Inquire for complete details.

**50 HP VARIABLE SPEED  
ELECTRO-HYDRAULIC  
SINGLE DRUM  
CARGO WINCH  
with deck controls  
SELF-CONTAINED WITH PUMP  
MOTOR & RESERVOIR IN BASE**



Made by Lakeshore. DUTY: 7400 lbs SLP — 220 FPM — drum size 24" diameter — 15" wide. Complete with ratchet & pawl. CAPACITY: 600 ft. of 3/4" wire. MOTOR: 50 HP — 440 volts — 66.3 amps — 3-phase 60 cycle — squirrel cage — 1200 RPM constant — Frame CC-445-N — 1 hour duty. Motor drives Waterbury size 5 "A" end — size 5K heavy duty remote servo control 1150 RPM — WP 1900# — test 3000#. "B" End motor — type 5K heavy duty — size 5 1150 RPM. Originally built for U.S. Navy refueling at sea. AVAILABILITY: Some with double gypsy; some with single gypsy; some with no gypsies. Ex-U.S.N.

PLANS ON REQUEST

**NEW HATCHES — IN**



**24" I.D. MAN-WAY  
3-DOG HATCHES**

18" Coaming. Available with T socket wrench or removable handwheel (can be welded in place) for top opening. Spring-loaded lid w/inside handwheel. Coaming 12mm thick, top 11mm. Bosmet drawing #67/56



**20" ROUND  
HATCH**

18" Coaming — 3 brass dog drop bolts. Coaming 12mm thick — top 11mm. Bosmet #68



**QUICK-ACTING  
4-DOG HATCHES**

Heavily constructed. Handwheel operated. Handwheels top & bottom. Size A: 27" x 21" w/12mm coaming & 11mm top. Size B: 31" x 31" w/12" coaming. For ocean-going barges, tugs, etc.

**GENERAL PURPOSE  
HATCH**



15" X 23" X 5"  
WITH  
4 BRASS OR  
STEEL DOGS



**TA  
EXPANS**

36" Diameter — 3 drop-bolts. Drawing



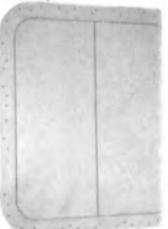
**CARGO**

69" x 75" x 12"  
72" x 74" x 12"

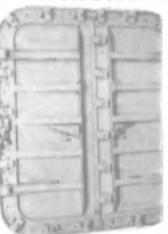


**QUICK-OPE**

Handwheel top & 24" with 5" coam

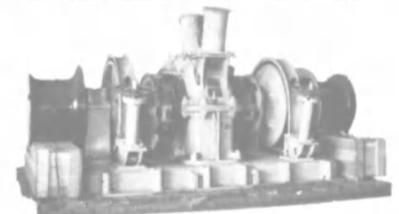


**FRONT**



**BACK**

**NEW — UNUSED  
LINK BELT WINDLASS**



Driven from motor, gearbox and shaft under deck. Handles 7000 lb anchors — 1 3/8" windlass — 56" centers — 50 HP — 230 VDC — with controls and spares.



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## IMMEDIATE DELIVERY



### ANKER ON TRUNK

6" coaming — 7-Dog  
#36/26



### 21" I.D. MAN-WAY 3-DOG HATCHES

10" Coaming. Available with T socket wrench or removable handwheel (can be welded in place) for top opening. Coaming 12mm thick, top 11mm. Bosmet #64/55



### HATCHES

48" x 48" x 9"  
72" x 72" x 12"



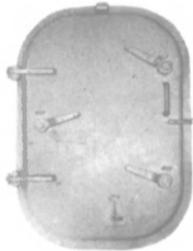
### FLUSH HATCHES

24" x 30" 30" x 30"  
4 Dogs bottom — T-key top opener. 4" Maximum coaming. Coaming 8mm thick — top 7mm.



### FLUSHING HATCH

Bottom. 4 Dogs. 16" dia.  
Drawing #60-40



### WATERTIGHT DOORS

24" x 36" — 3-DOG  
Right & Left Hand



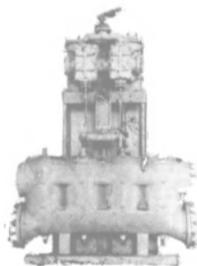
### NEW 18" & 24" HATCH COVERS

Flush mounting watertight hatch with machined steel mounting ring. T-Handle is recessed and hand tightens against a strongback across mounting ring. Approx. weights, including mounting ring: 18" 60 lbs — 24" 100 lbs.

### STORES LOADING PORT

Large side port double door and frame. Clear opening: 7'6" high X 6'0" wide. 24 Dog — fitted with bar strongback. Made of 3/8" steel. Carefully removed from Alcoa "Sea-probe."

### WORTHINGTON 16" X 14" X 18" VERTICAL DUPLEX STRIPPING PUMP

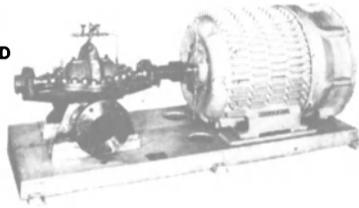


1400 GPM @ 110 PSI — suction lift 11.5 ft. — steam back pressure 15 lbs. 14" Suction — 10" discharge — 2 1/2" steam — 4" exhaust. Overall width 6'8" — overall height 9'1 1/2" — depth 3'9 1/2". Wt. approx. 10,000 lbs.

RECONDITIONED 1980  
ABS — READY TO GO

### NEW 5" ALL BRONZE BALDWIN-LIMA 1000 GPM 150 PSI TOTAL HEAD CENTRIFUGAL FIRE PUMP

NEW  
UNUSED

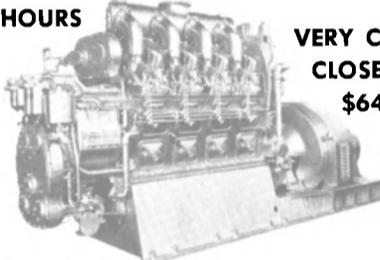


EX  
U.S.N.

Single stage double suction type with 6" side suction & 5" side discharge. 3600 RPM—test pressure 250 PSIG. MOTOR: Reliance 125 HP 440/3/60—totally enclosed—fan cooled—Frame D-5003-S—50°C.

### 3 GM 8-278 350KW 440/3/60 DIESEL GENERATOR SETS

LOW HOURS



VERY CLEAN  
CLOSE-OUT  
\$6450

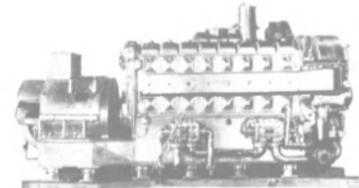
GM 8-cyl engine — 8 1/2 x 10 — 2-cycle — Vee type driving 350 KW GE generator — 440/3/60 — 600 RPM — 430 KW 2 hours. Used by U.S.N. for standby service.

### BRONZE HORIZONTAL 10HLV INGERSOLL-RAND CARGO PUMP



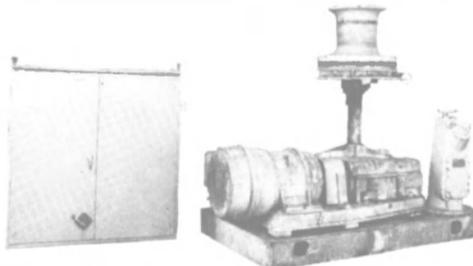
Ingersoll-Rand 10HLV — 14"x10". Bunker Fuel: 5150 GPM — 370' head — 1885 RPM. Sea Water: 6000 GPM — 352' head — 1885 RPM. Reduction Gears: G.E. type S-233 — Form AE — 700 HP — 6002/1685 RPM. TURBINE: G.E. D.P. 25 Class 4 — 700 HP — 6002 RPM — PSIG 775 lbs — 825 — inlet temp. 560° — 600° max. Exhaust pressure 179" Hg absolute.

### 300KW GM 8-268A 120/240 DC DIESEL GENERATOR SET



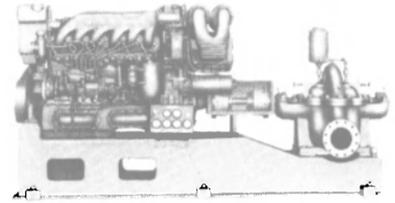
ENGINE: GM 8-268A — 6 1/2 x 7 — 1200 RPM. Heat exchanger cooled — equipped with heavy duty coolers. Just overhauled and can be seen running. Good condition.  
Length      Width      Height      Weight.  
IMMEDIATE DELIVERY

### 30 HP—440/3/60—2-SPEED A.C. MOTOR-DRIVEN CAPSTAN



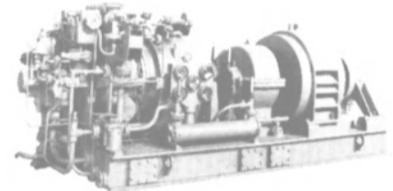
8500 lbs @ 90 FPM or 4250 lbs @ 180 FPM. Barrel size 15". Below-deck mounted motor — 31 HP — 440/3/60 — 42/38 amps — 820/1200 RPM. Squirrel cage — totally enclosed — watertight. Half hour duty 65°C. temp. rise. Base OAL 6'4". With magnetic brake, 2-speed control and master switch.

### SELF-PRIMING 1000 GPM ALLIS-CHALMERS BRONZE FIRE PUMP 280' HEAD — 1800 RPM



PUMP: Allis-Chalmers — 20' suction lift — 6" suction — 5" discharge. Complete with priming valve, Nash belt-driven priming pump and priming tank. DIESEL ENGINE: Hercules DWXDS — 4-stroke — 150 BHP — 6-cylinder — 4 3/4" x 4 3/4" — 1800 RPM. Complete with Roots supercharger — piston displacement 404 cubic inches. Heat exchanger cooled.

### LOW PRESSURE 450 KW A.C. TURBO GENERATORS suitable for waste heat turbo generators on motor ships



For motorship service. 175 PSIG — D&S — 27 1/2" vacuum. GENERATOR: Westinghouse 450 KW — 563 KVA — 450/3/60 — 1200 RPM. GEAR: 6097/1200 RPM. TURBINE: 175 lbs/D&S — 27 1/2" vacuum. Other pressures & temps: 250 lbs @ 40°C — 27 1/2" vacuum. Turbine serial #7801-7802. OAL 13' 1 1/2" — OAH 5' — OAW 5' 3/8". Total dry wt. 17,100 lbs. Plans on request.

### 12" X 10" BRONZE BALLAST PUMPS

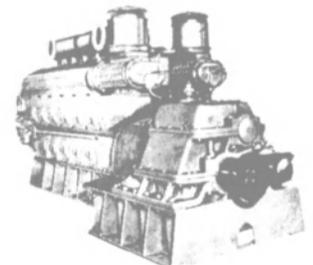


Allis-Chalmers Model 402-432-501—12"x10"—6000 GPM — 180' head—1225 RPM. Impeller diameter 19.75". TURBINE: GE Model 7DTPY125MR93 — 340 HP — 5000 RPM. Steam pressure 775# — 835# max. — temp. 530° TT—600° max.—exhaust 53 PSIG. REDUCTION GEAR: Type S-233 Form AR — 340 HP — 4997/1225 RPM. Also Worthington Model 8LN-18—12" x 8"—1775 RPM—280' head.

### WESTINGHOUSE 8LN BRONZE CARGO STRIPPING PUMPS OR USE AS FIRE PUMPS

4000 GPM @ 280 ft. head — 12" X 8" — 1775 RPM.  
Direct drive turbines available.

### GM 12-567A PORT DIESEL ENGINE 900 HP @ 744 RPM



Final output gear 280/300 RPM. Reverse ratio 2.52:1. Engine is 12 cylinder V-type — 8 1/2" X 10" — 2 cycle — equipped with reverse reduction gear — Airflex clutch. Ex-LST propulsion unit. Dry weight of engine and gears 45,200 lbs.

PLANS ON REQUEST

# ON METALS CO.

ST. • BALTIMORE, MD. 21202

9-1900 Marine Dept.: (301) 752-1077

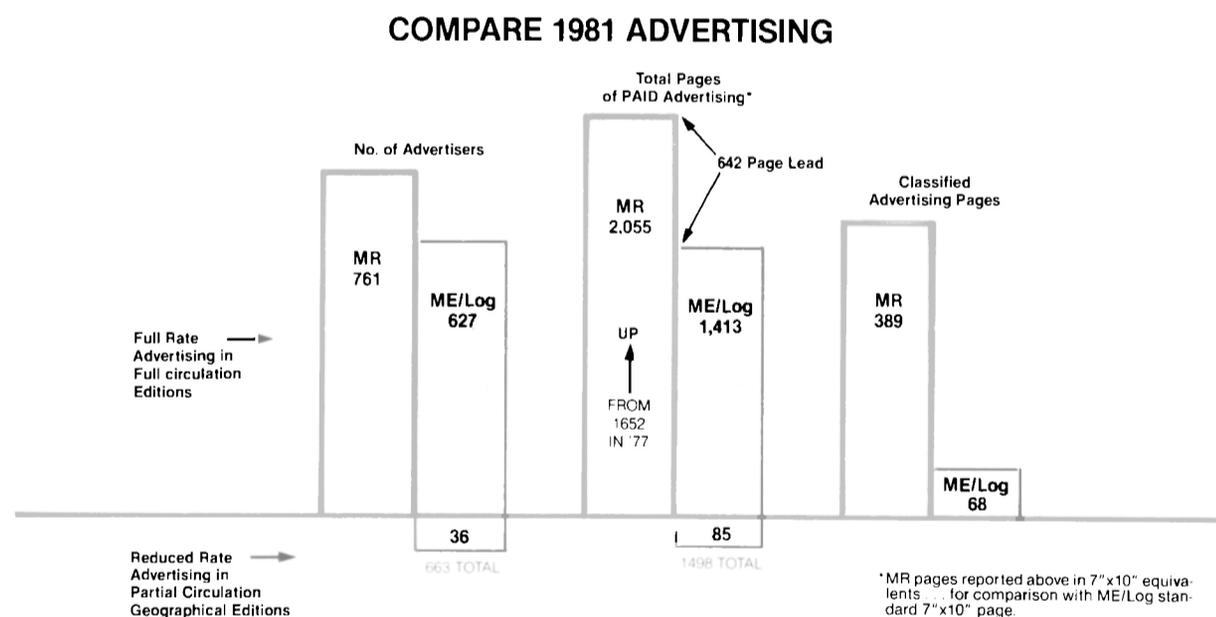
MD. U.S.A.

TWX 710-234-1637

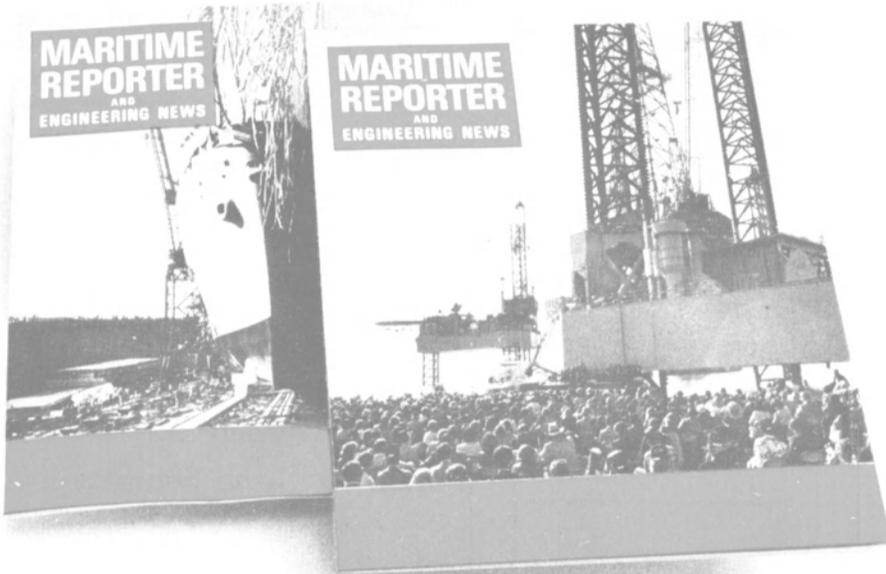
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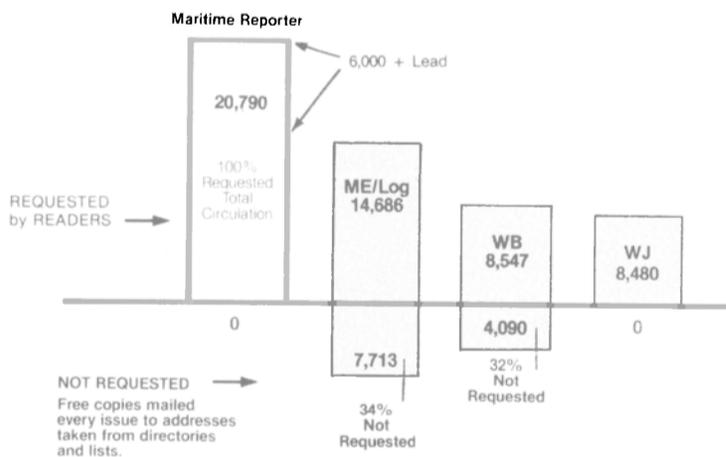
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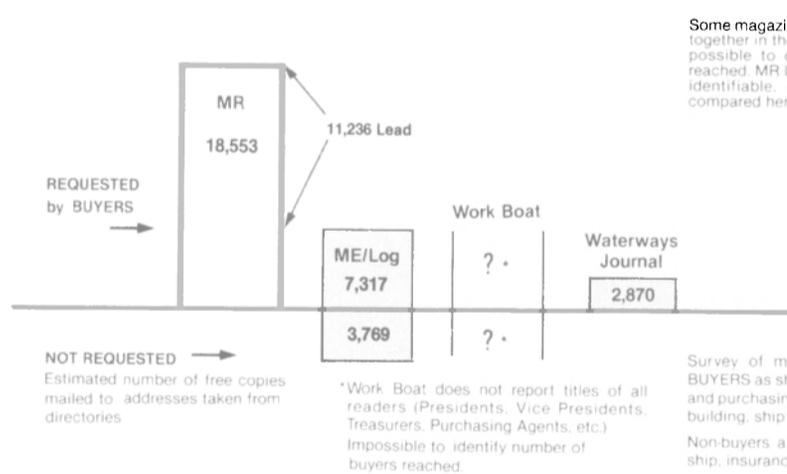
marine industry... the readers and the advertisers

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## SPECIAL EMPHASIS ISSUES IN THE NEAR FUTURE

### FEBRUARY 1

Advertising Closing Date  
January 12

- ★ OFFSHORE GOTEBOG '83 —  
Goteborg, Sweden  
March 1-4

- ★ BRAZILIAN SHIPBUILDING

A full report on current and future activity in Brazil's leading shipbuilding and repair companies

### FEBRUARY 15

Advertising Closing Date  
January 26

- ★ 1983 OIL SPILL CONFERENCE  
— San Antonio, Texas  
(Sponsored by the American Petroleum Institute,  
Environmental Protection Agency and the U.S.  
Coast Guard) February 28-March 1

- ★ AWO ANNUAL MEETING —  
(American Waterways Operators, Inc.)  
Washington, D.C. March 3-4

### MARCH 1

Advertising Closing Date  
February 8

- ★ NATIONAL MARITIME SHOW —  
Baltimore, Maryland  
March 29-31

- ★ LAW OF THE SEA & COASTAL  
ZONE RESOURCE  
DEVELOPMENT — Singapore  
March 17-19

### MARCH 15

Advertising Closing Date  
February 23

- ★ SNAME SPRING MEETING/STAR  
SYMPOSIUM — Washington,  
D.C. April 5-8

- ★ R.T.C.M.S. ANNUAL MEETING —  
Savannah, Georgia  
(Radio Technical Commission for Maritime  
Services), April 17-20 (Navigation and  
Communications)

### APRIL 1

Advertising Closing Date  
March 11

- ★ OTC — '83  
Annual Offshore Technology Conference Preview  
— Houston, Texas, May 2-5

### APRIL 15

Advertising Closing Date  
March 25

- ★ ASNE DAY — American Society  
of Naval Engineers Annual  
Meeting — Washington, D.C.  
May 5-6

### MAY 1

Advertising Closing Date  
April 11

- ★ LNG 7 — Jakarta, Indonesia  
May 14-19

- ★ RO-RO '83 — Goteborg, Sweden  
May 17-19

### MAY 15

Advertising Closing Date  
April 25

- ★ NOR-SHIPING '83 — Oslo,  
Norway  
June 6-11

- ★ WORLD FISHING '83 —  
Copenhagen, Denmark  
June 18-22

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## \$6.5-Million Contract Awarded Rockwell For Navigation Measuring Units

Rockwell International Corporation, Anaheim, Calif., has been issued a \$6,500,000 unpriced delivery order under a basic ordering agreement to furnish 13 inertial measurement units in support of AN/WSN-11(v)2 dual miniature inertial navigation systems (DMINS). The Navy Ships Parts Control Center, Mechanicsburg, Pa., is the contracting activity (N00104-80-G-0004).

## Hyundai Commissions First Of Nine-Vessel Order For Arab Emirates

Hyundai Heavy Industries Co. recently commissioned one of nine containerships for the United Arab Shipping Company.

The 35,400-dwt vessel was named M.V. Dubai by Rashid Sultan Al Makhaim, Deputy Minister of Communications of the United Arab Emirates. The M.V. Dubai is the first of a series of nine ships currently on order for the UASC.

The ships will expand the company's container services to the Arabian Gulf. The remaining vessels will be delivered by the end of September 1983. The containerships are similar, each having 1,846-TEU capacity, and will more than replace five containerships presently on long term charter for UASC.

The vessel Dubai is part of a major contract valued at US \$400 million which also includes the fabrication of 14,000 containers.

## 14th Crandall Dockmaster Seminar Successful— Information Available

The 14th dockmaster training seminar sponsored by Crandall Dry Dock Engineers, Inc., Dedham, Mass., was held recently in Galveston, Texas. Naval and civilian personnel from the U.S., Canada, and the United Kingdom took part in an exchange of common drydocking problems encountered with railways, floating docks, basins, synchrolifts, and transfer systems.

The sessions were conducted by Paul S. Crandall, president of Crandall Dry Dock Engineers, Inc., who regards these seminars as essential to maintaining communication between drydocking professionals.

The exact dates for the 15th dockmaster training seminar has not as yet been scheduled but will take place within the next two years.

For further information,  
Write 41 on Reader Service Card

## Barber President Named Commissioner Of Pilots



Robert H. Pouch

Robert H. Pouch, president and chief executive officer of Barber Steamship Lines, Inc., has been elected by the New York Chamber of Commerce and Industry as Commissioner of Pilots of the State of New York, it was announced by James P. McAllister, Commission chairman.

The six-member board of commissioners is responsible for the administration of the state's navigation laws relating to pilotage services and the licensing of pilots on all state waters including New York Harbor, the Hudson River and Long Island Sound.

Mr. Pouch has been involved with the maritime industry since earning his B.S., USCG Third Mate's License from Maine Maritime Academy, and U.S. Naval Reserve Commission in 1962. He served as a deck officer with American Export Lines, and subsequently held management positions with Pouch Terminal, Inc., Medalist Industries, United States Navigation / Hapag Lloyd and Barber Steamship Lines.

## Solus Ocean Systems Awarded Nine-Rig Support Contract In Abu Dhabi

Solus Ocean Systems, Inc., Houston, Texas, has recently announced that it has been awarded a one-year contract by Zakum Development Company to provide diving services in support of nine jackup rigs and to provide general inspection diving services in the upper Zakum Field, offshore Abu Dhabi, United Arab Emirates.

## Bates To Retire As ACL Chairman At End Of '83, —Koch Named Successor

Atlantic Container Line (ACL) announced recently that Philip Bates will retire as chairman and chief executive of Atlantic Container Line Services, Limited, Southampton, U.K., on December 31, 1983. Bengt Koch will succeed Mr. Bates.

"The orders for ACL's five new third generation ships have been placed for delivery during the first half of 1984, and they will hold the start of a new phase for ACL," said Mr. Bates. "The end of 1983, therefore, seems a very appropriate time for me to hand over my responsibilities after 15 years with ACL."

He will continue as a director of ACL Ltd. and will act as a consultant to the ACL board.

Mr. Bates joined Thos. and JNO Brocklebank Ltd., a subsidiary of the Cunard Steam-Ship Co. Ltd. in 1946 and became deputy chairman in 1962. In 1956 he was appointed managing director of Cunard Line Ltd., and three years later, a director of ACL Ltd. to represent Cunard's interest in ACL. In 1968 he became deputy chairman of the Cunard

Steam-Ship Co. Ltd., and was appointed to ACL Services as part-time chairman. A year later he resigned from Cunard and accepted the full-time appointment of chairman and chief executive of ACL Services.

Mr. Koch joined ACL Services in 1972 as commercial director. In 1976 he was appointed commercial and operations director and became managing director in 1980. He entered the transportation industry in 1967 as manag-

ing director of the British and Northern Shipping Agency Ltd. in London—then a subsidiary of Swedish Lloyd Shipping Co.

ACL is owned by six major European lines: Compagnie Generale Maritime (France); The Cunard Steam-Ship Co. PLC (U.K.); Intercontinental Transport (ICT) BV (Netherlands); Swedish American Line (Sweden); The Transatlantic Steamship Co. (Sweden), and Wallenius Lines (Sweden).

## Introducing QES™ Quick Erect Scaffold

### Major cost reduction in scaffold erection and dismantling.

The new Patent QES is a modular quick erecting scaffold that's highly labor-efficient yet nearly as flexible as tube and coupler scaffolding.

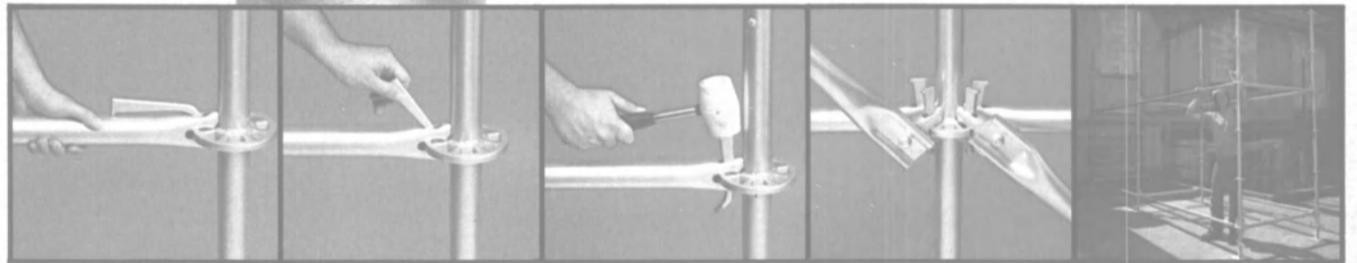
Designed by the creator of Gold Medal® TubeLox™ scaffolding, the QES utilizes fast-acting and secure wedge attachments. The posts, horizontals and diagonals can be erected to adapt to almost any structure—internally or externally—in just a few quick and easy steps. All you do is:

- Position horizontals on rings
- Drop captive wedges in place
- Tap wedges to secure

Forged rings are welded to posts at regular intervals. They have eight openings that enable the horizontals to be connected at various angles. Like our Gold Medal TubeLox scaffolding, all QES components are hot-dipped galvanized for longer service life.

Find out how economical our new QES system is. Contact us for a demonstration at your location or for literature. With more than 30 direct company Branches, there's a Patent team of proven products and experienced people near your site.

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Patent Pending

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**\$5.4-Million Navy Contract Awarded Tracor For SSBN Sonar Systems Services**

Tracor, Inc. of Rockville, Md., has received a \$5.4-million contract from Naval Sea Systems Command to provide technical integration and evaluation services for sonar systems aboard U.S. Navy ballistic missile submarines.

William C. Moyer, group vice president for Tracor Applied Sciences, said Tracor will provide integration engineering at the overall program level of the Navy's SSBN unique sonars program. Approximately 60 scientists, engineers, and engineering managers located primarily in the Washington, D.C., area and in Austin, Texas, are involved in the program.

"Tracor efforts include provid-

ing engineering review, evaluation, and integration of SSBN unique sonar equipment design, production, installation, and operational support to ensure uniform and effective application of established Navy policies," Dr. Moyer said.

Headquarters for the 24-month contract work is Tracor's facility in Rockville, Md., under the general management of William M. Pugh, division vice president and

director of the Systems Technology Division. Reporting to Mr. Pugh on the program is Neil L. Ellis Jr., director of strategic systems and program manager for the SSBN Unique Sonars Program.

**Newport News Awarded \$7.8-Million Engineering Contract For SSN-688 Subs**

Newport News Shipbuilding, Newport News, Va., has been awarded a \$7,800,000 cost-plus-fixed-fee contract for detailed engineering/design and planning yard support for SSN-688 class submarines. The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-83-C-2005).

**Omega Marine Announces Appointment Of Executives**

Omega Marine Services, Inc., a Houston-based firm engaged in engineering and project management of offshore platforms and oil and gas production facilities, recently announced that Bill Washington and Lee Danner have joined the company as marketing manager and senior project engineer, respectively.

**Romanelli Joins Fairhaven Marine As Vice President**



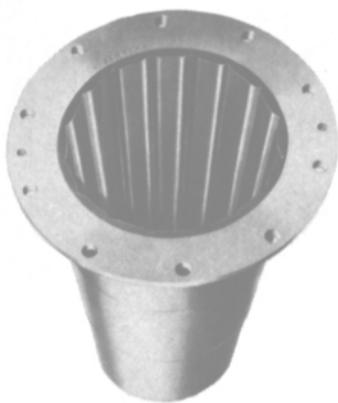
John Romanelli

William H. Potter, president of Fairhaven Marine, Inc., has announced the appointment of John Romanelli to the position of vice president-yard manager at the Fairhaven, Mass., facility. Mr. Romanelli will be responsible for directing all operations of the full service repair yard and marina and for planning intended expansion of the present facility.

Mr. Romanelli comes to Fairhaven Marine from Newport Shipyard, Inc., where he was chief superintendent. His prior experience in the Navy included machinery repair, hull work, and various supervisory positions.

Fairhaven Marine is one of the largest shipyards in southeastern New England, offering complete facilities for large yachts, fishing, and commercial vessels. The company also has a marine construction division, which is involved in building bulkheads, docks, marinas, etc., and vessel salvage work.

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## Kelly Named Vice President Of Lykes Pacific Division



Randolph L. Kelley

Thomas M. Kelly has been named vice president, Pacific Division for Lykes Bros. Steamship Co., Inc. He replaces William L. Burch who has served as acting director of that division since January 1982.

Mr. Kelly joined Lykes in 1972 and held various positions in the company's New Orleans traffic group. In 1973 he was named traffic manager of Lykes's Galveston, Texas, office, and in 1974 district manager of the St. Louis, Mo., office.

In 1975 Mr. Kelly returned to Lykes's New Orleans headquarters as manager of pricing, at that time a newly created department. In 1977, he was named assistant vice president of that department and in 1979, vice president, pricing and marketing division, the position he held until the present. Before joining Lykes he served as an officer in the U.S. Army Transportation Corps.

## MarAd Offers Report On Shipboard Fuel Handling And Conditioning

The Maritime Administration has released a 172-page report entitled "Shipboard Fuel Handling and Treatment-Guidelines for Onboard Conditioning," which provides guidelines and recommendations for the shipboard treatment and conditioning of fuel oils.

Four propulsion systems — steam turbine with 6000 SR1 fuels, slow-speed diesel with 3500 SR1 and 1500 SR1 fuels, medium-speed diesel with 3500 SR1, 1500 SR1 and 800 SR1 fuels, and high-speed diesel with 400 SR1 and marine diesel oil—are considered in the report prepared under contract by Seaworthy Engine Systems, Inc.

The quality of fuels considered is that which is expected to be used in the late 1980s and through the 1990s. The characteristics of these fuels and the benefits of each are discussed in the study.

The report is available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161. The order number is PB83-132720; the price is \$17.50.

## New 15-100 H.P. Barge Spotters Described In Free Literature

Scott Equipment Company of Dayton, Ohio, has announced the availability of their new Model 50 and 55 packaged Barge Spotters (movers) which provide customers with: increased wire rope life; smooth starts and stops; infinitely adjustable speed control;

and faster barge loading/unloading, at a lower cost than DC drives or other barge movers. Scott Equipment Company has been designing, building and servicing hydraulic equipment for over 20 years. In the mid-West they are called "The House of Fluid Power."

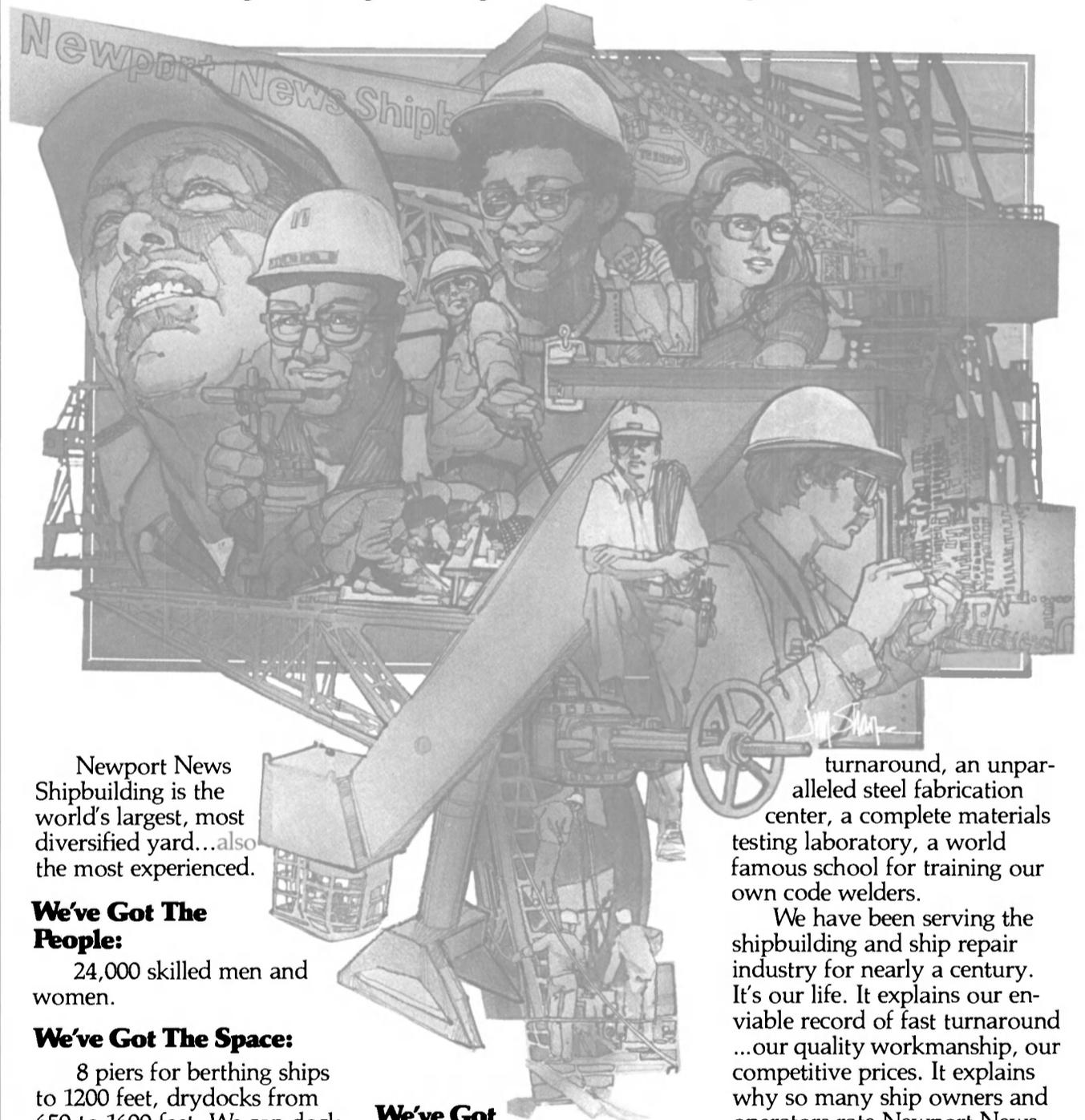
Literature is available describing the Scott Barge Spotter, including a selection chart and model coding system. Although many pre-engineered Scott Barge Spot-

ters are available (15-100 H.P.), the model coding system allows the customer to customize the standard Scott Barge Spotter to meet his unique needs by offering numerous options, including: construction type; drum and cable size; control location; 3 speed controls; various enclosures; selection of either electric or diesel power; and many others.

For a free copy of the literature,

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## Lockheed To Build Prototype Vehicles To Destroy Naval Mines

Lockheed of Sunnyvale, Calif., announced recently that it will build and test six prototype, low-cost underwater vehicles that can be launched from helicopters to destroy enemy naval mines.

The battery-powered, wire-guided vehicle, dubbed the Low-

cost Expendable Neutralization System (LENS), will be built under contract to the Naval Air Systems Command. Program manager Rollin Swanson of Lockheed Missiles & Space Co., Sunnyvale, Calif., said the vehicle will be 5 feet long and 8 inches in diameter.

The LENS will be used in conjunction with existing fleet mine-hunter sonar systems and will be capable of neutralizing both

moored mines and those laying on the ocean floor, Mr. Swanson said. Subcontractor is EDO Western Corp., Salt Lake City, Utah, which will supply the sonar and terminal guidance systems.

For Lockheed, LENS is the latest in a series of small, highly accurate, remotely-controlled tactical and research systems. Others include a device to render useless airfield runways and to destroy bunkers; a small un-

manned airplane for reconnaissance and target designation; and a 1/12th-scale submarine for dynamic study of submarine control surfaces and systems underwater.

## Louisiana Dock Offers Free Product Literature On Composite Bearings

Louisiana Dock Company of Jeffersonville, Ind., is offering new product literature on its line of Thordon composite bearings.

The literature describes in photographs and text the main advantages of the bearings such as no bonding failures, light weight, acceptance of a wide range of tolerances, and no corrosion. The literature states Thordon composite bearings provide up to twice the life of conventional bearings.

For a free copy of the literature,

Write 52 on Reader Service Card

## Smith Joins Farrell Lines As Account Executive

Peter V. Smith has joined Farrell Lines as an account executive, it was announced recently by Andrew W. D'Alessandro, general manager of New York sales.

Mr. Smith has five years' experience in the shipping industry in operations and sales and will represent Farrell Lines' Australian/New Zealand, Mediterranean, and West African services in New York City.

## Mitsui Delivers Panamax Tanker To U.K. Owner



A Mitsui-B&W diesel powers the London Victory.

Mitsui Engineering & Shipbuilding Co., Ltd. recently delivered from its Chiba yard the 62,153-dwt London Victory to London & Overseas Freighters Plc. of England. The ship, an improved Panamax-class tanker, is the second of two identical vessels ordered by the same owner.

Driven by a turbocharged Mitsui-B&W 7L67GA diesel engine developing a maximum continuous output of 15,200 bhp at 123 rpm, the London Victory recorded a maximum trial speed of 16.5 knots. The vessel's principal dimensions are: 281.50 meters in length o.a., 32.20 meters in molded breadth, and 12.81 meters full load draft.

The London Victory is equipped with a Mitsui integrated duct propeller for improved propulsion efficiency.

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Kubota, Ltd., Dusseldorf Office: 4000 Dusseldorf, Geogr.-Glock-Strasse 14, Federal Republic of Germany Phone: 0211-43 41 54

## Staninger Named Vice President, General Manager Of Sales At Ships Supply

Robert R. Staninger has been named vice president and general manager of sales for Ships Supply Inc., by Michael C. Kenney, president of the Jacksonville, Fla., company.



Robert R. Staninger

Mr. Staninger was a research technician at Inland Steel Research Laboratory before joining Ships Supply in 1974. Ships Supply Inc., a leading supplier of provisions and vessel equipment, maintains offices and warehouses in Jacksonville and Tampa. The company also serves the ports of Savannah and Brunswick, Ga., Charleston, S.C., Cape Canaveral, Port Everglades, and Miami; Aruba; Bahamas; and Curacao, as well as shipyards, marine, and industrial concerns.

## Coast Guard Publishes Revised Navigation Rules

The revised edition of the U.S. Coast Guard publication "Navigation Rules, International-Inland" is now available through the Government Printing Office.

Federal law requires that after January 1, 1983, a copy of the new Inland Navigation Rules must be kept for reference on-board all boats of 12 meters (39.4 feet) or more in length operating on inland waters. All boat operators, regardless of the size of their vessel, are expected to know and comply with the Inland Navigation Rules which became effective on December 24, 1981, on all inland waters except for the Great Lakes. They will become effective on the Great Lakes on March 1, 1983.

The International Rules which govern the operation of vessels outside U.S. waters have been revised by 55 amendments effective June 1, 1983. The Coast Guard book contains all of these changes. The USCG stresses that familiarity with the navigation rules is one of the surest ways to make vessel operations safer and more enjoyable for all concerned.

Price of the book is \$6.50. It may be ordered by name, "Navigation Rules, International-Inland," and stock number, 050-012-00192-8, from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

## State Boat Begins International Operations

The initial step in the enactment of State Boat Corporation's expansion plans into selected international markets occurred recently when the M/V State Spirit departed Morgan City, La., en route to Singapore, where the vessel will commence operations on term charter with a Malaysian oil company.

The State Spirit, a 192-foot supply boat, was delivered in mid-1982 and was employed in the Gulf of Mexico prior to her redeployment. State Boat will be accepting delivery of additional supply and tug/supply vessels, before March 1983, which are designed for worldwide operations.

State Boat of Houston, Texas, was formed in 1956, and at present operates a fleet of over 30 supply and tug/supply vessels.

## India Places 8 Tanker Order With Hyundai

South Korea's Hyundai Corporation has been awarded a contract to construct eight 62,500-dwt class crude oil tankers for the Shipping Corporation of India.

According to a Hyundai spokesman, the oil tankers are to be built at its Ulsan shipyard, for delivery starting in the first quarter of 1984 at one month intervals. Meanwhile, Hyundai is building four 37,900-dwt class bulk carriers which were ordered by South Indian Shipping Company of India in December 1981.

## Johnson & Towers Named Alco Diesel Distributor —Literature Offered

Johnson & Towers, Inc., diesel engine specialist headquartered in Mount Laurel, N.J., has been appointed a distributor for the Alco Power Boss line of large diesels ranging from 675 to 4,500 bhp, according to Peter M. Johnson, J & T executive vice president.

These four-cycle engines, including an in-line six and V-8, V-12, V-16, and V-18 models, are manufactured by Alco Power Inc., Auburn, N.Y., part of the diesel engine group of General Electric Company, Ltd., of England. Since the early 1930s, Alco has designed and produced turbochargers for its own engines.

Johnson & Towers will concentrate on developing markets for the Alco diesels for marine propulsion and auxiliary power and for base load and standby electrical power generation. It will focus on an area including Maryland, Delaware, Pennsylvania, New Jersey, New York, and Massachusetts, as well as overseas, stocking Alco parts and providing service for these engines.

"Our 56-year-old company, long noted for its diesel expertise, is honored to become affiliated with Alco, which was established in 1848 as a locomotive manufacturer and has been a leader in the large diesel business for some 70 years," Mr. Johnson said.

"The Alco engines will greatly

expand our diesel product lines at the upper end of the power range with the fine quality products for which Johnson & Towers is so well known," he explained.

In marine applications, Alco Power Boss diesels are used for main propulsion and auxiliary power aboard oceangoing tugs, workboats, dredges, commercial fishing, Navy, and Coast Guard vessels. They meet the specifications set by the American Bureau of Shipping (ABS), Lloyd's Register of Shipping, Det norske Veritas, and other leading marine classification societies, as well as the U.S. military standards.

Founded in 1926, Johnson & Towers has been involved with diesel power since its earliest days and is currently a distributor for Detroit Diesel Allison and Isuzu. Earlier this year it received the U.S. President's "E" Award for excellence in export markets.

For more information on the Alco engines,

Write 44 on Reader Service Card

## Umpqua Marine Awarded Contract For Two Float Camp Barges

Umpqua Marine Ways, Inc. of Reedsport, Oregon, has been awarded a \$732,628 contract for the design and construction of two totally self-contained floating field camps for the U.S.D.A. Forest Service, Alaska. The 85-foot by 32-foot barges will accommodate 15 persons each for service in the Tongass National Forest, Alaska.

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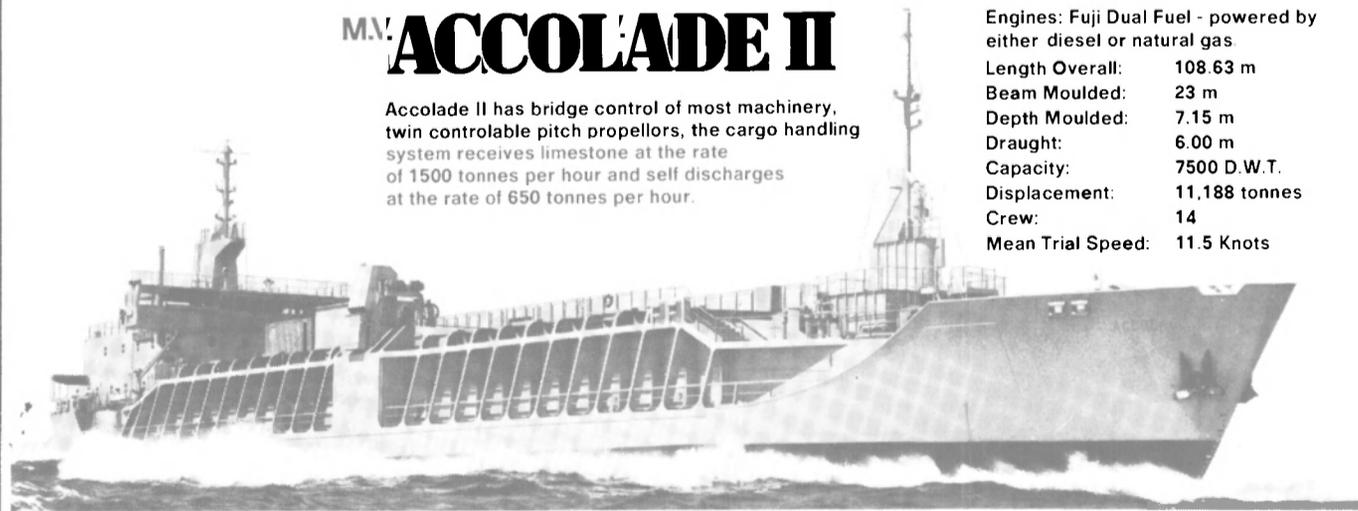
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Accolade II has bridge control of most machinery, twin controllable pitch propellers, the cargo handling system receives limestone at the rate of 1500 tonnes per hour and self discharges at the rate of 650 tonnes per hour.

Engines: Fuji Dual Fuel - powered by either diesel or natural gas.

Length Overall:	108.63 m
Beam Moulded:	23 m
Depth Moulded:	7.15 m
Draught:	6.00 m
Capacity:	7500 D.W.T.
Displacement:	11,188 tonnes
Crew:	14
Mean Trial Speed:	11.5 Knots



# U.S. SHIP CONSTRUCTION CONTRACTS

## 1 — MERCHANT VESSELS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — DECEMBER 1, 1982

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	2	Container	2330-31	40,500	30,300	D-43,200	220.0
	Exxon Company U.S.A.	3	Products	2335-37	26,000	43,000	D-17,000	300.0
Bath Iron Works	Falcon I Sea Transport	2	Tanker	404-5	24,000	33,900	D-14,720	142.0
Bethlehem-Sparrows Point	First-Fifth Tug/Barge	4	Tug/Barge	4654-7	32,000	47,000	D-18,200	212.8
General Dynamics-Quincy	Coastwise Shipping	3	Tank Barge	74-75, 82	14,125	27,000	—	42.7
	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	1	Bulk	753	23,500	36,000	D-14,800	40.0
Marinette Marine	Shell	1	Research	8264	—	4,880	DE-7200	NA
	American Tankships	1	Products	420	24,500	37,500	D-11,400	40.0
National Steel & SB	American Trading Trans.	2	Products	425-6	28,800	44,090	D-11,400	101.9
	Union Carbide	1	Product	1075	—	35,000	—	80.0
Newport News Shipbuilding	Waterman Steamship	2	RO/RO-Cont.	679-80	18,500	23,500	T-32,000	137.5
Pennsylvania Shipbuilding	Waterman Steamship	2	RO/RO-Cont.	679-80	18,500	23,500	T-32,000	137.5
Tacoma Boat	Apollo Co.	2	Incinerator	433-4	7,317	10,797	D-2250	63.0
Upper Peninsula SB	State of Michigan	1/4	Tug(1)/ Barge(4)	001-5	5,400	10,000	D-8,000	35.5

\* Subcontracted from Sun Ship.

## 2 — OFFSHORE DRILLING RIGS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — DECEMBER 1, 1982

Builder	Owner	Name	Type	Est. Contract Delivery
Alabama Maritime Mobile, Ala.	Diamond M	Diamond M. Falcon	Semisub	1/83
Bethlehem Steel Beaumont, Texas	Griffin-Alexander	Griffin-Alexander VIII	Jackup	3/83
	Houtech Energy	Houtech IV	"	9/83
	Alfa Drilling	(unnamed)	"	1/83
Chicago Bridge & Iron Pascagoula, Miss	Dixilyn-Field	DF-77	Submersible	3/83
	Blocker Drilling	(unnamed)	"	12/82
Gonzales Shipyard Pascagoula, Miss.	Dolphin Titan	Rig 105	Jackup	12/82
	"	Rig 106	"	12/82
Ingalls Shipbuilding Pascagoula, Miss.	Bonito Offshore	Bonito II	Jackup	2/83
	Huthnance Drilling	Vanguard II	"	10/82
Marathon LeTourneau Brownsville, Texas	Global Marine	Glocmar Adriatic V	Jackup	8/84
	"	Glocmar Adriatic VI	"	10/84
	"	Glocmar Adriatic VII	"	1/85
Marathon LeTourneau Vicksburg, Miss.	Penrod Drilling	Penrod 91	Jackup	3/83
	Rowan Drilling	(ur named)	Jackup	12/83
	"	(ur named)	"	11/84
	"	(ur named)	"	3/85
Vemar Shipyard Channelview, Texas	Penrod Drilling	Penrod 203	Submersible	1/83
	Goldrus Marine	Go drus V	Submersible	7/83

## 3 — MAJOR U.S. NAVAL VESSELS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — DECEMBER 1, 1982

Builder	Type	Navy Nos.	No.	Est. Contract Value, \$Mil.
Avondale Shipyards	Fleet Oiler	AO-180, 186, TAO	3	270.1
Bath Iron Works	Guided-Missile Frigate	FFG-36, 39, 42	3	209.9
		FFG-45, 47, 49	3	195.4
		FFG-50, 53, 55	3	247.0
		FFG-56, 58	2	169.0
		FFG	1	89.3
	Guided-Missile Cruiser	CG-51	1	—
Bell-Halter	AC Landing Craft	LCAC	3	—
	Surface Effect Ships	WSES 2-4	3	14.0
Derektor Shipyard	Med. End. Cutter*	WMEC 905-13	9	350.0

## 3 — MAJOR U.S. NAVAL VESSELS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — DECEMBER 1, 1982 (Cont.)

Builder	Type	Navy Nos.	No.	Est. Contract Value, \$Mil.	
GD-Electric Boat	Attack Submarine	SSN-705, 707-10	5	2,171.3	
		SSN-719-20, 724	3	274.0	
		SSN-751-52	2	560.2	
		Trident Submarine	SSBN-728-9	2	466.3
		"	SSBN-730	1	354.5
		"	SSBN-731-2	2	699.0
Ingalls Shipbuilding	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	Dock Landing Ship	CG-52, 53	2	664.1	
		LSD-41-42	2	685.0	
Marinette Marine	Personnel Modules	YRBM(L)	4	28.0	
National Steel & SB	Destroyer Tender	AD-44	1	183.5	
	Cable Repair Ship	T-ARC-7	1	107.0	
Newport News SB	Attack Carrier	CVN-71	1	1,400.0	
	Attack Submarine	SSN-714-15	2	166.0	
	"	SSN-716-18	3	380.8	
	"	SSN-721-3	3	675.0	
	"	SSN-750	1	—	
Peterson Builders	Patrol Gunboats **	F-PGG-6-9	4	35.0	
	Salvage Ship	ARS-51-53	3	105.0	
	Minesweeper	MCM1	1	64.4	
	Yard Patrol	YP	1	4.9	
Tacoma Boatbuilding	Missile Patrol Chaser **	F-PCG-2-4	3	39.3	
	Med. End. Cutter*	WMEC902-4	3	72.3	
	Ocean Surv. Ship	T-AGO	12	151.5	
Todd-San Pedro	Guided Missile Frigate	FFG-30, 33	2	98.0	
		FFG-38, 41, 43	3	214.8	
		FFG-46	1	67.7	
		FFG-51, 54	2	184.0	
		FFG-57	1	88.0	
		FFG-60	1	89.3	
Todd-Seattle	Guided-Missile Frigate	FFG-35	1	49.0	
		FFG-37, 40	2	143.2	
		FFG-44, 48	2	135.3	
		FFG-52	1	92.0	

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

**Gulf Fleet Marine Names Banos To Sales Post With International Staff**



George D. Banos

Gulf Fleet Marine Corporation, New Orleans, La., has named **George D. Banos** a sales representative in its international marketing staff. He will be based in Gulf Fleet's corporate headquarters in New Orleans. For the past six years Mr. Banos has been actively involved in international marketing in the oil and gas industry.

Gulf Fleet Marine, a subsidiary of Houston Natural Gas Corporation, provides a wide range of marine transportation services to the offshore petroleum and construction industry.

**Seacoast Offers Free 170-Page Electrical Equipment Catalog**

Seacoast Electric Supply Corporation, Passaic, N.J., recently released a new 170-page illustrated catalog of Navy and commercial cable and accessories for 1983.

The newly expanded catalog includes a total marine electrical equipment section with all Navy symbols. In addition, there is a completely updated and revised IEEE-45/1982 section. The catalog includes Seacoast's expanded line of marine electrical fittings, Navy symbols, Navy circuit breakers, plus military and commercial grade marine equipment. For a free copy,

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**ASNE Southern New England Discusses Sub Combat Systems**

Earle Messere, the technical director of the Naval Underwater Systems Center, was the guest speaker at a recent meeting of the Southern New England Section, American Society of Naval Engineers. Mr. Messere likened the Underwater Systems Center to a \$500-million industrial research and development center, providing a full spectrum of services from warfare studies, which predict future needs, to system development and introduction into fleet units of those

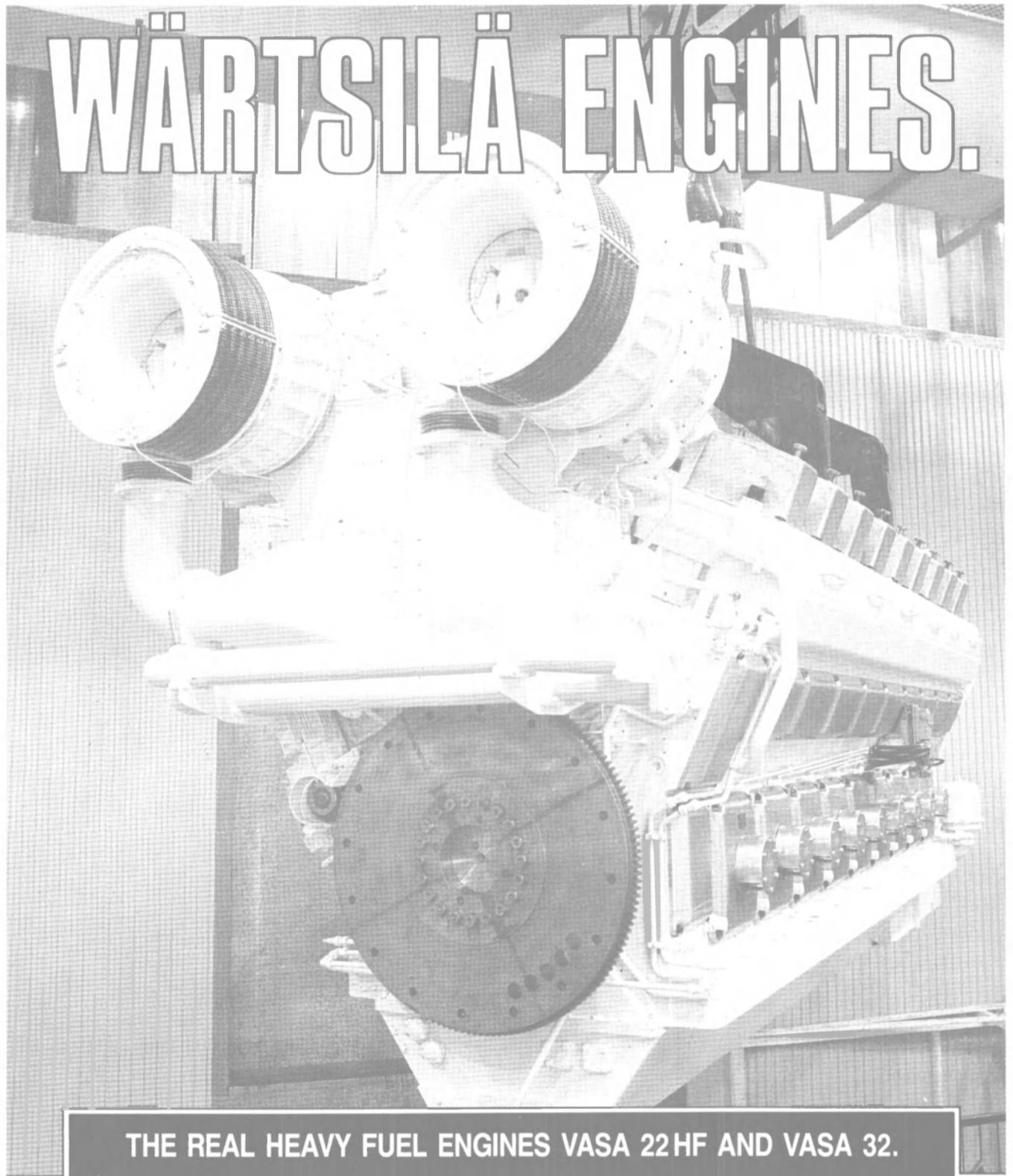
systems following up with solutions to current problems within a short time-frame.

Mr. Messere described combat systems on submarines, for which the center is responsible, beginning with a past history of the development of combat systems. He pointed out the importance of the acquisition process, due to the 20 or more years required to introduce new systems to the fleet. This time-frame requires

an excellent analysis of the mission requirements for the future, as well as a firm understanding of technological trends and their effect on long-range problem situations.

In a discussion of current systems, Mr. Messere highlighted the differences between the Soviet and U.S. naval forces. These differences require each unit to be as capable as possible, he noted, a requirement which ne-

cessitates large data management systems with many independent processing units to speed computations with better display management. Feeding these information management systems will be better broad band arrays and other sensors. Such systems will cause changes, and Mr. Messere foresees the future submarine as an underwater cruiser with much longer-range weapons and remote targeting capabilities.



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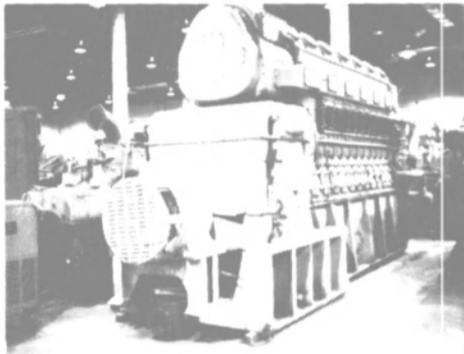
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8 1/2" x 10" Air start 2 cycle, 10 cylinder

### WESTINGHOUSE GENERATOR

1250 KVA 100KW 720 RPM  
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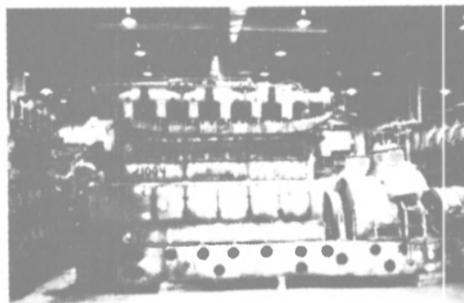


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## MarAd Approves Crowley Acquisition Of Delta Steamship Stock For \$96 Million

The Maritime Subsidy Board and the Maritime Administrator recently approved applications under which Crowley Maritime International, Inc., a subsidiary of Crowley Maritime Corp., will acquire all stock in Delta Steamship Lines, Inc., from Holiday Inns, Inc., for \$96 million.

Approval of the sale/purchase agreement, along with certain approval requested by Crowley under section 805(a) of the Merchant Marine Act of 1936, as amended, are subject to review by the Secretary of Transportation.

The actions of the board and the administrator (dated Dec. 21, 1982) also require that Crowley and Delta unqualifiedly accept 11 conditions outlined in a board/administrator order dated December 13, which, among other things, terminated from consideration Crowley's application for certain section 805(a) written permission in the event Crowley acquires all outstanding stock of Delta and Delta continues under its two present operating-differential subsidy contracts.

Section 805(a) prohibits subsidized operators and their affiliates from participating in domestic shipping activities without written permission from MarAd. Crowley operates vessels in the domestic trades.

In granting section 805(a) written permission, the administrator noted that, because of the overall scope of Crowley's present operations, there is considerable shifting of its vessels to accommodate changing trade requirements, and operating flexibility is needed. For that reason, he said, efforts had been made to strike a balance among all interests concerned. Pursuant to section 805(a), the administrator granted Delta written permission for Crowley, its subsidiaries and affiliated or associated companies to own, operate, or charter:

- up to a total of 160 tugs in the domestic trade.
- no more than the number of its existing tug/supply vessels or crewboats in the domestic trade so long as they are operated in oil exploration or drilling industry.
- fifteen passenger vessels in the California domestic service so long as the vessels do not exceed a capacity of 5,400 passengers.
- up to a total of 175 barges in the transport of cargoes within and between the following U.S. coastal areas with free interchange of vessels among those areas, and with the maximum number and capacity of vessels employed in the areas at any one time to be:

	No. of Vessels	Capacity
Columbia River barges	28	74,000 S/T
US Pacific-Hawaii dry barges	6	60,100 S/T
US Atlantic-US Gulf-Puerto Rico dry barges	11	41,500 S/T
tank barges	6	666,000 bbls
Ro/Ro barges	18	4,050 trailers
US Pacific-Alaska rail car barges	8	396 rail cars
dry barges	81	525,050 S/T
tank barges	7	340,300 bbls
US Pacific dry barges	12	8,800 S/T
tank barges	8	545,000 bbls

Under the 805(a) permission, Crowley, et al, may operate any of its U.S.-flag vessels which are no larger than any of its existing vessels in the transport of cargoes

within and between any U.S. coastal area not indicated above on 10 voyages annually.

It also permits officers, directors, and executives of Crowley to be officers, directors, and executives of Delta and directly or indirectly own a pecuniary interest in Crowley, its subsidiaries and affiliated or associated companies. MarAd also noted that Crowley will dispose of its interest in Naviera Central and transfer a Panamanian-flag barge to the U.S.-flag.

The conditions to which Crowley and Delta had agreed as outlined in the board/administrator order of December 13 included the following:

1. Crowley does not request written permission under section 805(a) for any vessel owned by Delta to operate in any domestic trade whether exclusively in a domestic trade or part of a foreign trade voyage, whether owned by Delta or transferred by charter or otherwise to any other Crowley affiliate.

2. The domestic trade covenants set forth in Crowley's proposed Agreement Terminating Operating-Differential Subsidy Agreements by letter of November 8, 1982, shall remain in effect for five years from the closing.

3. Crowley agrees to be bound by all of the provisions of Delta's subsidy agreements and of the 1936 act applicable thereto and the rules and regulations prescribed pursuant to the act.

4. Crowley shall keep the Capital Construction Funds (CCFs) of Delta and Crowley separate and shall not use any such Delta funds for any purpose related to the domestic trade.

5. Crowley is not now applying to increase Delta subsidized service, and in the future will not increase any subsidized service without applying for approval for same under section 605(c) of the 1936 act.

6. Crowley will dispose of its foreign-flag interest in Naviera Central prior to acquiring all the outstanding stock of Delta, but in any event no later than February 1, 1983.

7. Crowley will comply with all current collective bargaining agreements to which Delta is a party.

8. Crowley will continue current union representation of Delta employees during the term of existing ODS agreements.

9. Crowley will maintain all pension and fringe benefits to Delta employees at levels required under existing collective bargaining agreements.

10. Crowley will not transfer equipment from Delta to another subsidiary or affiliate of Crowley for the purpose or with the effect of taking any action directly or indirectly to disrupt existing collective bargaining arrangements with Delta employees, lessen the level of employment of American-citizen seagoing personnel, or to reduce the level of pension contributions or fringe benefits to such personnel.

11. Neither Crowley nor Delta shall sell, scrap, assign, or otherwise directly or indirectly, transfer outside of Crowley, or permanently or for a substantial time period discontinue operation of any Delta subsidized vessel without the prior written approval of the administrator and board; notice shall be published of any such application and interested persons shall be afforded a reasonable time period to comment on such application.

In conjunction with the December 21 action approving the stock transfer, the board and the administrator denied petitions by two maritime unions to reopen the Crowley/Delta proceedings.

**LTI Introduces New System  
For Moving Ship Sections  
—Literature Available**



Ship modules can be moved by LTI's newly introduced semi-trailers that are hauled by forklifts.

LTI America Corp. of Riverdale, N.J., recently introduced a unique range of forklift truck-hauled semi-trailers.

These hydraulically operated, easily towed, self-loading and unloading trailers with capacities from 10 to 300 tons stretch the load-moving capacity of standard forklift trucks up to 10 times their normal design limits. A brochure illustrating a variety of applications has been published by LTI.

The trailer — easily hooked up to the forklift — is backed in under the load. The trailer platform is then raised hydraulically using the forklift's hydraulic system. At the maximum height, the lifting cylinders are completely relieved through a system of linkage arms, and the forklift is ready to transport the load to the desired location.

The brochure shows how the movement of heavy loads, typical in the steel fabricating, steel warehousing, heavy metals, offshore oil, and shipbuilding industries, can easily and economically be accomplished by existing personnel and equipment without assistance of expensive mobile cranes and lowloaders.

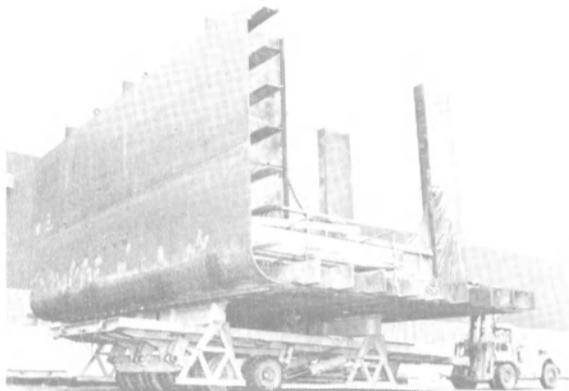
For a free copy of the brochure,  
Write 54 on Reader Service Card



**QUINTINO LAUNCHED** — The 24,000-dwt chemical product carrier Quintino, being built for Petroleo Brasileiro S.A., "Petrobras," was launched recently at Chantiers de France—Dunkerque, France. The 170.90-meter-long ship was christened by Mrs. Vivi Sanches De Mendonca, the wife of Brazil's vice president. The Quintino is the sister-ship of the Quinca launched at the yard in October 1982.

January 15, 1983

**Hitachi Zosen Delivers Panamax  
Bulk Carrier To Metroship**



The Mount Taygetos is powered by a Hitachi B&W main engine.

The Mount Taygetos, a 60,470-dwt bulk carrier, was delivered recently to the Metroship Corp. of Greece by Hitachi Zosen's Hiroshima shipyard, Innoshima.

The Mount Taygetos is one of Hitachi Zosen's economical Panamax standardized bulk carriers — the largest capable of sailing through the Panama Canal. It is designed to carry various kinds of bulk cargo including grain, ore, and coal. The ship's upper wing tanks may take on grain, thus increasing its carrying capacity.

The main propulsion is then provided by a Hitachi B&W 7L67GA-type diesel engine with a derating control of engine output. The bulk carrier is fitted with an HZ nozzle for improved propulsion efficiency.

The vessel measures 224.50 meters long overall, with a breadth of 32.20 meters, and a designed full-load draft of 12.40 meters.

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Principals at the SNAME-Philadelphia Section meeting were, from left, standing: C. Lofft, vice chairman, Newport News Technical Services, Inc.; R. McFadden, discussor, J.J. Henry Co.; D. Champlin, chairman, Selby Battersby & Co.; seated, J. Murray Wilson, author, Philadelphia Resins Corp.; F. Beltz Jr., coordinator, Transamerica Delaval Company.

## SNAME-Philadelphia Section Hears Paper On Marine Epoxy Resin Chocks

The recent meeting of the Philadelphia Section of the Society of Naval Architects and Marine Engineers featured the presentation of a paper entitled "Marine Epoxy Resin Chocks." It was presented by **J. Murray Wilson**, manager of Philadelphia Resins Corporation. Meeting coordinator, **Fred W. Beltz Jr.** of Transamerica Delaval Company, introduced the author and discussors that included **R. McFadden** of J.J. Henry Co., **G. Mowers** of Transamerica Delaval Company, and **P. Mason** of Lloyd's Register of Shipping.

The paper discussed the concept of epoxy chocking of which

the variety and extent of the applications is not yet generally realized. The author detailed the advantages that could be gained by the shipowner and the shipbuilder. With the help of slides, the author described typical main diesel engine and auxiliary machinery applications. Other elements such as stern tubes, rudder bearing, crane rails, and thruster units were also addressed.

A copy of the paper can be secured from Mr. Wilson at the Philadelphia Resins Corporation, 20 Commerce Drive, Montgomeryville, Pa. 18936.

## \$4.5-Million Order Awarded Rockwell For Shipboard Navigation System Parts

Rockwell International Corporation, Anaheim, Calif., has been awarded a \$4,506,500 unpriced delivery order under a basic ordering agreement to furnish various quantities of line items in support of a Dual Miniature Inertial Navigation System (DMINS) (AN/WSN-1(v)2) for use on-board ships. The Navy Ships Parts Control Center, Mechanicsburg, Pa., is the contracting activity (N000104-80-G-0004).

## Newport News Receives \$106-Million Modification To Navy Overhaul Contract

Newport News Shipbuilding, Newport News, Va., has been awarded a \$106,050,800 modification which converts a previously awarded cost-plus-fixed-fee contract to a cost-plus-incentive-fee contract to accomplish the overhaul, refueling, repair and alteration of USS Francis Scott Key (SSBN 657). The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-81-C-2063).



Attending the Trelclean briefing are (left to right): Salvador R. Salas of Chemical Industries, Inc. of the Philippines; H.H. Masuda of Trelclean International of Honolulu, Hawaii; Raynor T. Tsuneyoshi of Dillingham Maritime Corporation (PacTow) of Long Beach, Calif.; and H.E. van der Linde of Trelclean International.

## Trelclean Conducts Technical Briefing And Hull-Cleaning Demonstration

Trelclean International, Limited, manufacturers and worldwide operators of the Trelclean underwater hull cleaning service, held a two-day in-depth technical briefing and a live demonstration of their three types of barnacle-removing machines recently in Long Beach, Calif.

The meeting was attended by Trelclean-associated companies from 10 separate geographical areas of the world. Other guests included **Arild Rinvoll**, Senior Research Engineer of The Ship Research Institute of Norway; **Joseph Pastore** and **Harold Siagel**, president and treasurer of National Industrial Service Group; **E.B. Zetterlund**, senior technical service representative of the 3M Company; and **John D. Koss**, Underwater Operations Company; and also representatives of several paint companies.

Additionally, representatives of U.S. and foreign shipping companies and the U.S. Navy observed the operation of the Trelclean machine as it cleaned the side of a large barge. This demonstration was carried out at the Dillingham base in Long Beach Harbor.

**Edward Stettinius**, vice president of Trelclean, conducted the meeting, **Arild Rinvoll** of The Ship Research Institute of Norway lectured on the economic advantages of underwater hull cleaning in general and the ad-

vantages of the Trelclean system in particular.

**Malte Bystrom**, general operating manager of Trelclean, lectured on the specific mechanical advantages of the Trelclean machines.

**Mr. Stettinius** explained to the meeting that Trelclean International manufactures its own machines, holds patents or patents applied for in 18 maritime countries and is continuing to effect improvements through its research and development.

He also stated that in order to maintain one high cleaning standard on a worldwide basis, Trelclean sells no machines. The only users of the equipment are members of the worldwide Trelclean organization which enables the company to control the use and maintenance of the very sophisticated machines.

Dillingham Maritime Company, Long Beach, Calif., is responsible for Trelclean operations on the entire West Coast of the United States, Hawaii and Guam. **Raynor T. Tsuneyoshi**, vice-president, is in direct charge.

Early next year, Trelclean will hold similar meetings in Europe and the Middle East.

Information relative to Trelclean worldwide operations is available from Transportation Concepts and Techniques of Charlottesville, Va.

For copies of literature, Write 56 on Reader Service Card



The barge Energy Ammonia was built by Modec Shipyard and outfitted by Chicago Bridge & Iron Company.

## Deep-Notch Tug And Barge Delivered To Energy Transportation

Energy Transportation Corporation of New York City has taken delivery of a tug and 420-foot notched-stern barge for the transportation of liquefied ammonia in the Gulf Coast area.

The tug/barge will be operated by Energy Ammonia Transportation Corporation, a subsidiary, under long-term time charter to International Minerals & Chemical Corporation.

The barge Energy Ammonia was constructed in two phases. The steel structure and deck machinery were built at the Modec Louisiana Shipyard in LaRose, La., in 1981. It was then towed up the Mississippi to Memphis, Tenn., where the trunk deck was removed, cargo tanks constructed, insulated, and installed, and a cargo-handling system installed by Chicago Bridge & Iron Company.

The cargo system was tested following a tow down the Mississippi to the Baton Rouge area where the barge met the tug Energy Altair and loaded its first cargo of ammonia for delivery to the International Minerals & Chemical Corporation terminal in Tampa, Fla. It is unmanned and the cargo liquefaction system is designed for fully automatic operation.

The Energy Ammonia is 420 feet long, with a beam of 78 feet, and a depth to the main deck of 28 feet. The notch is 48 feet long.

The tug Energy Altair was built by Bollinger Machine Shop and Shipyard, Lockport, La. Its principal characteristics are: length, 120 feet; beam, 37 feet; and depth, 18 feet. The tug is equipped to push when set in the deep notch of the barge or tow on a hawser.

Accommodations are provided for 11 people and the vessel is equipped with an upper and lower pilothouse. The upper pilothouse is used when in the notch and the barge is light to attain proper visibility. The lower pilothouse is used when in the notch and the loaded barge's draft allows proper visibility or when towing on a hawser.

Both pilothouses are equipped with a gyrocompass, radar, Loran C, VHF radio, depth sounders, searchlights, and in addition the lower pilothouse has a satellite navigation unit and a single-sideband radio.

Two 12-cylinder ALCO diesel engines coupled to Reintjes 5 to 1 reverse reduction gears provide propulsion power. They drive 108-inch-diameter propellers with

### ENERGY ALTAIR Major Suppliers

Main propulsion (2)	ALCO
Reduction gears	Reintjes
Propellers	Coolidge
Nozzles	Michigan Wheel
Shafts	Bollinger
Generators	Delco
Generator engines	Detroit Diesel
Panels	Bollinger
Engine controls	Bollinger
Steering	Sperry
Centrifuge	Alfa-Laval
Pumps	Barnes
Air compressors	Quincy
Sanitation system	Houston Systems
Watermaker	Allied Water/Sweetwater
Radars	Furuno
SSB	Harris R-F Communications
VHF	Cybernet
Loran C	Texas Instruments
Depth indicator	Impulse
Gyrocompass	Sperry
Sat-Nav	Decca
Winch	Intercon
Windlass	McElroy
Coatings	Imperial

fixed Kort nozzles. Twin rudders, fitted behind each propeller, are powered by hydraulic steering gear to improve steering and permit shaft withdrawal without removing the rudders. Total propulsion brake horsepower is 4,860 maximum.

There are two 99-kw, 230-V, 3-phase generators driven by 8V-71 Detroit Diesel engines. Each unit is capable of supplying all power requirements for the auxiliary equipment and house electrical loads.

Deck equipment consists of a 160,000-pound line pull towing winch driven by a 6V-71 Detroit Diesel equipped with 2,400 feet of 2-inch wire rope and an auxiliary drum; a 1,000-pound stockless anchor and anchor windlass; and a deck capstan on the aft deck for handling tow gear. The bilge/ballast and fire systems piping are all interconnected with a Barnes 25ICU-1 pump serv-

ing each system. Separate manifolds for the bilge system and ballast system are located in the engine room. Five fire stations are located two in the engine room; one main deck (port side); one fo'c'sle deck (stbd. side); and one upper deck (port side). Each fire station has 50 feet of hose and a combination stream/fog nozzle.

### ENERGY AMMONIA

#### Cargo System — Major Suppliers

Hydraulic pumps	Rexroth
Engines	Detroit Diesel
Generator	KATO
Keel coolers	Fernstrum
Rotary compressor	Howden
Control panel	Panel Alarm
Pumps	Framo
Windlass	Intercon
Capstans	Intercon
Skegs	Modec
Fire-fighting system	Kidde
Ballast tank coating	Magnus Maritec

## Uniflite Announces Three Executive Appointments



Alva M. Hill



Steve Harris



Timothy J. Chalfant

Alva M. (Al) Hill has been elected senior vice president of Uniflite, Inc., fiberglass boat manufacturer headquartered in Bellingham, Wash., with an Eastern plant at Swansboro, N.C., while Steve Harris has been promoted to national sales manager, and Timothy J. Chalfant appointed chief engineer, according to James J. Doud, chairman of the board and president.

Mr. Hill will have overall responsibility for marketing, engineering, quality assurance, Bellingham production, the Valiant sailboat division, and industrial relations. He joined Uniflite in 1971 as director of government operations and in 1972 was appointed director of international sales. In 1974 he became director of marketing and was elected vice president-marketing in 1977.

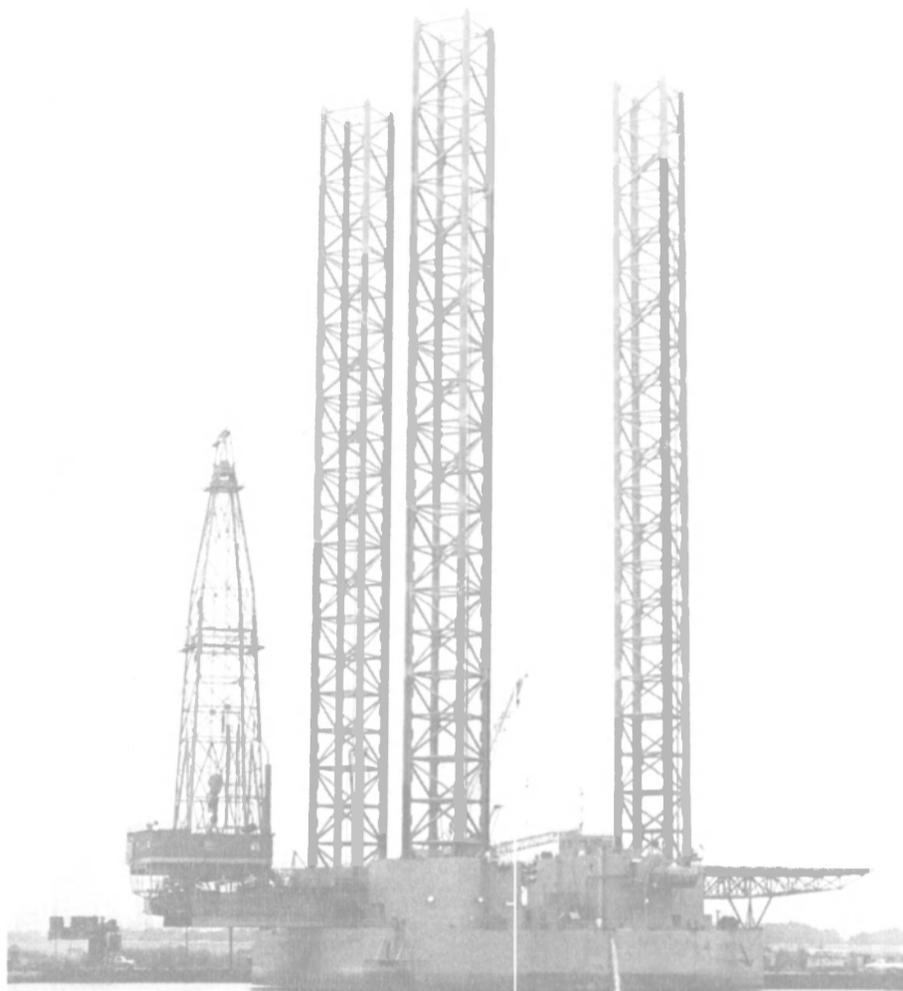
Prior to his affiliation with Uniflite, Mr. Hill was with Emerson Electric Company in St. Louis, Mo., and ITT Gilfillan of California, where he was vice president for marketing.

Mr. Harris, based in Swansboro, has been with Uniflite for 10 years, serving since 1974 as Southeast regional sales manager. He will continue his Southeast sales duties, but in addition will be in charge of the company's diversified sales program.

Mr. Harris was with Black and Decker and GTE Sylvania prior to joining Uniflite.

Mr. Chalfant came to Uniflite in 1977 as a project engineer and in 1979 was named new product engineer. Before that he was with Boeing for five years on the PHM patrol hydrofoil missile ship program.

Uniflite is one of the leading manufacturers of luxury power yachts, the Valiant offshore cruising sailboats, commercial fishing vessels to 66 feet, research and special purpose patrol vessels, and for two decades the largest supplier to the U.S. Navy of fiberglass combat and support boats up to 56 feet.



The Levingston-built jackup Sam Noble.

## Jackup Rig "Sam Noble" Is Christened At Levingston

The self-elevating offshore drilling unit Sam Noble, built by Levingston Shipbuilding Company of Orange, Texas, was christened recently in ceremonies held in Port Arthur, Texas.

The unit was built for the Noble Drilling Corporation, and was christened by Mrs. Mary

Jane Noble, wife of Sam Noble, chairman of the board of Noble Affiliates, Inc.

The Sam Noble is a Levingston Class 111-C rig capable of drilling to 25,000 feet in water depths of up to 300 feet. Sistership of the Ed Holt, which was christened by Levingston a year ago,

the Sam Noble is designed with capabilities for duty in international and remote locations.

The unit has crew quarters for 80, with twin galleys and mess halls for native and expatriate crews, a four-man treatment center, as well as recreational facilities. It features a significant increase in storage capacity — an added 21,000 cubic feet — from the conventional hull design. The added storage will enable the unit to carry a larger complement of spare parts such as motors to reduce downtime from equipment failure in remote areas.

Designed to operate in winds to 109 knots and seas to 50 feet, the Sam Noble is equipped with the following drilling equipment: Oilwell E-3000 drawworks powered by three G.E. 752 DC motors; three EMD 16-645 diesel engines, each driving an EMD A-20 generator; a power system of four Ross Hill model 1400 SCR; total horsepower of 5,850; two Oilwell A-1700 PT mud pumps with two DC motors each; traveling equipment rated at 500 tons; a Lee C. Moore "T" leg derrick rated at 1,250,000 pounds; an Oilwell B-491½ rotary with two-speed transmission and DC motor drive; and two 65-ton FMC link-belt deck cranes.

The rig's triangular-shaped hull measures 200 feet long by 186 feet wide, and 22 feet 11 inches deep. The unit's three legs each measure 414 feet 6½ inches long. The Sam Noble was built to ABS classification and U.S. Coast Guard certification.

The Sam Noble is one of a series of marine rigs recently put into service by Noble Drilling which features a standardized arrangement of drilling equipment.

Noble Drilling Corporation, one of the premier drilling contrac-

tors in the industry, with the addition of the Sam Noble has a fleet of 15 marine and 37 land rigs. The company recently received a unique honor when, for the first time in I.A.D.C. records, it swept the first place Class A safety awards for both land and offshore operations. It is a subsidiary of Noble Affiliates, Inc., which is listed on the New York Stock Exchange.

Levingston Shipbuilding Company is internationally known as one of the pioneers in the construction of offshore drilling rigs. Since World War II, Levingston has built 171 vessels for the offshore industry, ranging from dynamically positioned drillships, semisubmersibles and jackups to posted drilling barges, tenders, and other large offshore structures.

### SAM NOBLE Major Suppliers

Cranes	FMC Link-Belt
Main Engines	(3) EMD
Generators	EMD
Emergency Generators	Caterpillar
Sewage System	Red Fox
Jacking System	National
Drawworks	Oilwell
Drill Console	Martin Decker
Auxiliary Brake	Parmac
Mud Pumps	Oilwell
Centrifugal Mud Pumps	Mission Magnum
Rotary Table	Oilwell
Derrick	Lee C. Moore Standard
BOP	Cameron, Shaffer, Hydril
BOP Handling System	NL Control System
Drill Motors	GE
Crown Block	Oilwell
Hook	Dynaplex
Kelly	Drilco
Swivel	Oilwell
Winches	Beebe
Air Compressors	Airdyne
Pumps	Openco, Crane Deming, Gorman-Rupp, Brown & Sharp
Mooring Winches	Skagit



Mrs. Mary Jane Noble christens the jackup rig as Major Inman of Levingston Shipbuilding looks on.

### New USCG Pollution Prevention Requirements Effective October 2

The U.S. Coast Guard has announced that new requirements concerning prevention of pollution from ships will become effective on October 2, 1983.

For some U.S. shipowners and operators the new rules will mean changes in operating procedures and for others new equipment will be required. Also, a new International Oil Pollution Prevention Certificate will now be required for vessels trading in foreign ports.

Any U.S. seagoing ship of 400 gross tons or more will be required to install oily-water separating equipment or filtering systems for the treatment of engine room bilge water. Seagoing tankers 150 gross tons or more and other seagoing ships of 400 gross tons or more will be re-

quired to have a copy of the revised oil record book for recording time, location, method of discharges of oil or oily water.

Ships of less than 400 gross tons must retain oily water onboard for discharge to reception facilities, or they may fit oily-water separating equipment or filtering systems required of the larger ships.

The new requirements result from the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978. Most of the requirements pertaining to tankers have already been incorporated into Coast Guard regulations under authority of the Port and Tanker Safety Act of 1978.

Details concerning the new pollution prevention changes may be obtained by writing the Commandant (G-WER-2), U.S. Coast Guard Headquarters, Washington, D.C. 20593.



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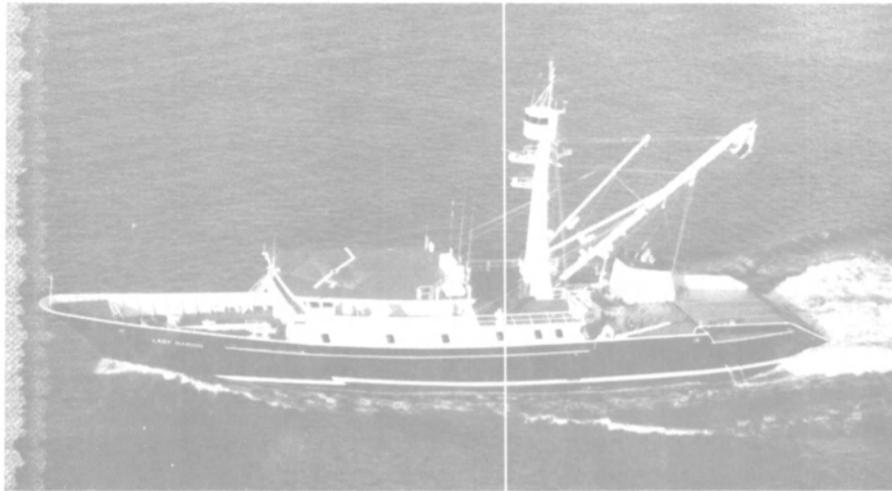
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The seiner Lady Marion is powered by a turbocharged EMD marine diesel engine.

## Burton Delivers 224-Foot Seiner, Sixth Of Seven For Van Camp

Burton Shipyard, Inc. of Port Arthur, Texas, recently delivered the 224-foot tuna vessel Lady Marion. The steel-hulled tuna purse seiner is the sixth of a seven-vessel contract awarded to Burton by Van Camp Sea Food Co., a division of Ralston Purina Co. The purse seiner will operate primarily with the Pacific fleet, docked in San Diego, Calif., and will fish for skipjack and yellow-fin tuna.

The Lady Marion measures 42 feet wide, with an 18-foot draft, and cruises at 16 knots. The vessel is designed to operate with a crew of 21, and is capable of carrying a 1,200-short-ton payload of frozen tuna.

The vessel will travel through the Panama Canal to San Diego, fishing the eastern Pacific waters after being introduced to the San Diego tuna fishing community.

The new tuna seiner is propelled by a turbocharged EMD marine diesel engine developing 3,600 shp at 900 rpm. The 20-cylinder engine drives a 132-inch-diameter, five-blade stainless-steel propeller, built by Avondale, through a Falk 5.033:1 reduction reversing gear. Shaft speed development is rated at 179 rpm.

Auxiliary power is provided by three Caterpillar D-353 TA diesels with 300-kw Kato brushless generators. The ship's bow thruster is a Bird-Johnson model 10/35 FP with direct Caterpillar drive.

A passive stabilizer has been incorporated into the hull structure and was engineered by John J. McMullen Associates. Fishing gear and hydraulic equipment are by Marco and include a model WS444 purse seine winch and the Puretic power block model B56-61990-185. A Whaley model B-102-H hydraulic ring stripper is also provided.

The ammonia systems utilize Vilter components which were subcontracted by Refrigeration Systems of New Orleans, La.

Navigational aid and communications equipment, provided and installed by Marine Electric of San Diego, consists of a Magnavox 1102 SatNav receiver, Furuno FRJ-100 and DRA-1064 radars, FE812 depth sounder, FDK-245 ADF and scanning sonar. Other nav com gear includes Sperry MK 37 gyrocompasses, gyropilot, Furuno weather recorder model FAX 143, and a broad assortment of radio communications equipment.

A helicopter rides on the pad located on the wheelhouse top. A private stateroom is provided for the pilot and his mechanic, who also have a workroom on the boat deck.

Five outboard chase boats are stored on both the boat deck and

### LADY MARION Major Suppliers

Main Propulsion	EMD
Reduction Gears	Falk
Propellers	Avondale
Shaft	Burton
Bearings	Waukesha
Generators	Kato
Generator Engines	Caterpillar
Engine Controls	Mathers
Steering	Sperry
Bow Thruster	Bird-Johnson
Thruster Engine	Caterpillar
Separators	Alfa-Laval
Pumps	Pacific
Air Compressors	Quincy
Sanitation System	Red Fox
Radars	Furuno
Radios	Raytheon
Depth Sounder	Furuno
SatNav	Magnavox
ADF	Furuno
Gyrocompass	Sperry
Gyropilot	Sperry
Weather Fax	Furuno
Scan Sonar	Furuno
Winch	Marco
Power Block	Puretic
Ring Stripper	Whaley
Windlass	Marco
Fishing gear	Marco
Coatings	Proline

the upper deck. The diesel-powered skiffs were purchased from Mauricio & Sons of San Diego.

The Lady Marion is also fitted with a Red Fox model 750M biological treatment sanitation system.

The vessel is equipped to stay

at sea for as long as three months before bringing her payload of tuna back to San Diego.

Burton expects delivery of the seventh tuna vessel, the Judith Carol, to be in early 1983. The purse seiner was designed by Rados International of San Pedro.

## Hagglund Products Division Opens New Texas Facility

The Hagglund Products Division of ASEA recently announced the completion of a new U.S. headquarters office and manufacturing facility located at 9425 Pinecroft Drive, P.O. Box 7949, The Woodlands, Texas 77380.

In addition to Hagglund, other ASEA divisions and subsidiary companies represented in the Woodland facility include ASEA Industrial Systems, Inc., Power Systems Division, Relay and Control Division, and the Control Equipment Division.

## Stone Manganese Offers Technical Reports On Fuel Economy And Propellers

A technical publication called "Paper No. 20," featuring two reports on the role of the propeller in economical ship operation, is being offered by Stone Manganese Marine Ltd.

One report, by L. Hawdon, technical director of Stone Manganese, and G. Patience, technical manager, is titled "Propeller Design for Economy." Presented before the Third International Marine Propulsion Conference, it examines important factors contributing to substantial reductions in fuel consumption. These include special propeller devices, reduce power operation, changes in propeller design, changes in reduction gear ratios, the number of propeller blades, and service and maintenance.

The second report, "The Contribution of the Propeller to Energy Conservation in Ship Operation," was written by G. Patience. It was presented to the 1982 Conference on Priorities for Reducing the Fuel Bill which was sponsored by The Institute of Marine Engineers, The Nautical Institute, and The Royal Institution of Naval Architects.

This report describes various means by which a propeller can assist in reducing fuel consumption. Particular attention is given to roughness, maintenance, and the servicing of propellers in operation. Different options available to shipowners with regard to conventional propellers as well as other propulsive devices are outlined and assessed from the energy conservation viewpoint.

For a free copy of "Paper No. 20,"

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## Pan-American Naval Engineers To Hold 1983 Meeting In D.C.

The Eighth Congress of the Pan-American Institute of Naval Engineering (IPEN) will be held in Washington, D.C., at the Hyatt Regency Hotel, Crystal City, Arlington, Va., September 11-17, 1983.

In announcing plans for the meeting, Rear Adm. James W. Lisanbv, U.S. president of the Western Hemisphere organization of naval architects and marine engineers, said several hundred government, university, and private industry representatives from maritime nations throughout the Americas are expected at the conference. Observers from a number of other world maritime nations will also attend. It will be the first time the Pan-American professional maritime group will hold its congress in the U.S.

IPEN is a nonprofit organization dedicated to the promotion of technical advancement in naval architecture, marine engineering, and water transportation. Members of the society are engineers, architects, technicians, and management personnel, both government and private industry, engaged in maritime activities. Headquarters of the organization is in Rio de Janeiro, Brazil.

The congress is structured to promote learning and resource exchange in the areas of shipbuilding and repair, ocean and inland water transportation, naval science and research, standardization, information processing, offshore construction, fishery management, and maritime education. The five-day business sessions will include the presentation of professional papers, technical discussions, exhibits, and displays.

Visits to the U.S. Naval Ship Research and Development Center and to the U.S. Naval Academy have been arranged. A variety of social activities for visitors are planned. The U.S. Navy's Ship Systems Command, and the U.S. Society of Naval Architects and Marine Engineers (SNAME) will serve as hosts for the international gathering.

Information concerning registration and hotel reservation may be obtained by writing to IPEN Registration Center, P.O. Box 17413, Dulles International Airport, Washington, D.C. 20041. Tel.: (703) 471-6180; Telex: 899133 WHITEXPO.

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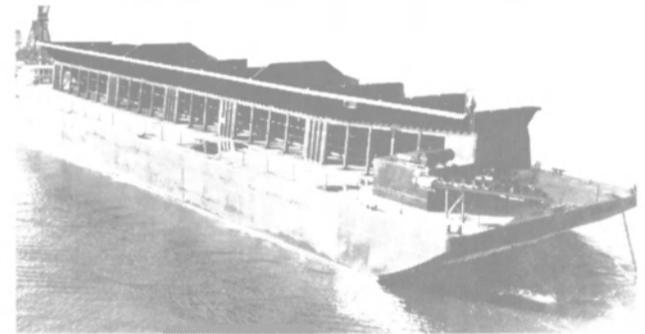
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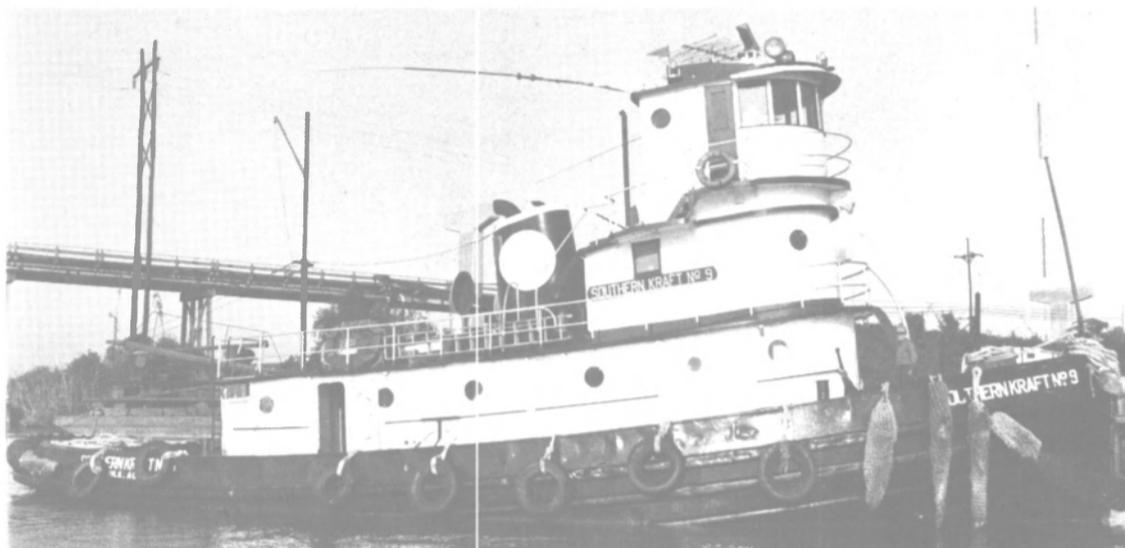
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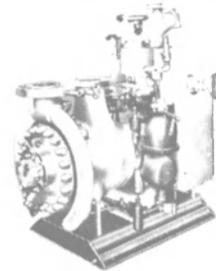


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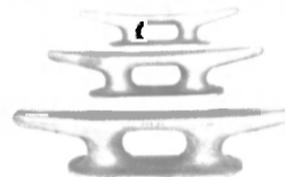
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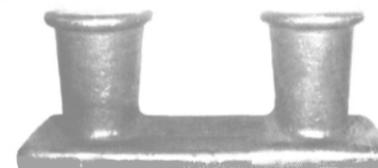


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Weight 525 lbs.



### 8" TOWING AND MOORING BITTS

Cast steel—deep pattern—wt. 240 lbs.



### D-RINGS

With pad—wt. 50 lbs.



### BARGE CHOCKS

36" — 90 lbs.  
48" — 235 lbs.



### SIZE 9 CLOSED CHOCKS

12" X 6" — 190 lbs.

### THE BOSTON METALS COMPANY

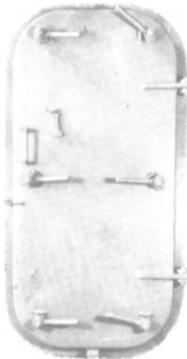
313 E. Baltimore St. Baltimore, Md. 21202  
Marine Warehouse (301) 752-1077  
TWX: 710-234-1637

**FOR SALE: Crane Components**

Dismantling a model 24 Clyde Portal crane and a R-15 Portal crane. Many parts available from both cranes, good to excellent condition. Booms, trucks, etc.

**SUNBELT MECHANICAL 713-449-4717**  
13917 Chrisman Houston, TX 77039

**FOR SALE  
NEW WATERTIGHT DOORS**



**Steel Dogs**

6-Dog right and left hand hinged doors with frames. Constructed of 1/4" steel plate and meet Coast Guard regulations for above deck as well as below deck use. All dogs are bronze bushed. Also available with 8" bronze portlights.

**SIZE**

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

**EACH DOOR**

**IMMEDIATE DELIVERY**



**NEW 7" RADIUS  
PANAMA CHOCKS**

(MEET PANAMA REGULATIONS)  
14" X 10" CLEAR OPENING

With extended legs for welding to deck. 14" Wide on base — length 28" — height 27 1/4". IMMEDIATE DELIVERY FROM STOCK.

**THE BOSTON METALS COMPANY**

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

**15 1/2", 16" POLISHED BRASS  
4-DOG MARINE PORTLIGHTS  
WITH GLASS**



**24" BRIDGE PORTLIGHTS  
ALL BRONZE — CLEAR GLASS**



**THE BOSTON METALS COMPANY**

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

**Paceco Delivers Railmounted  
Transtainer Crane To U.S. Army**



The 110-foot cantilevered Transtainer crane was recently delivered by Paceco to the U.S. Army Military Ocean Terminal — Sunny Point, located at Southport, N.C.

Paceco, Inc. of Gulfport, Miss., a subsidiary of the Fruehauf Corporation, recently delivered a railmounted Transtainer Crane of custom design to the U.S. Army Military Ocean Terminal — Sunny Point, located at Southport, N.C.

The cantilevered gantry-type container stacking yard crane spans 110 feet and has a rotating trolley equipped with a special anti-sway reeving system. Rated at 50 short tons, the crane will be used to load and unload ammunition containers from trucks and railcars.

This special purpose crane was engineered by Paceco and manufactured at its recently expanded headquarters facility, located near Gulfport. The crane was shipped by rail approximately 700 miles and is one of nearly 900 Paceco container-handling cranes operating in over 120 ports worldwide.

**Moore And Fleming Named  
Consafe Vice Presidents**



Michael M. Moore



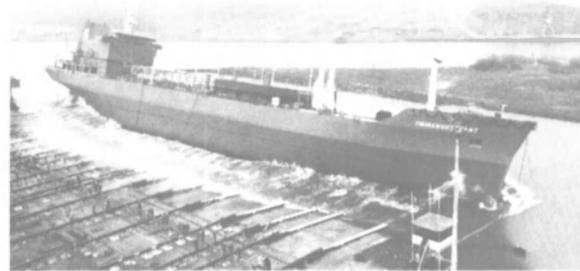
Jon P. Fleming

Michael M. Moore and Jon P. Fleming have been named vice presidents of Consafe, Inc., which has facilities in Houston, Texas, and in Lafayette, La.

Mr. Moore is the new vice president of marketing and Mr. Fleming is the new vice president of manufacturing.

Consafe, Inc., is one of the world's largest manufacturers of custom buildings for accommodations, engine / generator, switchgear, and utility packages. Consafe also owns and operates a worldwide fleet of semisubmersibles, jackups, and barges.

Mr. Moore is former president of Sea Turtle Co., an offshore accommodations manufacturer. Mr. Fleming joined Consafe in August 1981 as assistant to the president. Previously, he was vice president of Offshore Quarters International.



**FROM MEYER YARD** — The 15,500-dwt LPG carrier Immanuel Kant was launched recently at the Jos. L. Meyer shipyard, Papenburg-Ems, West Germany. The ship was christened by Mrs. Monica Wendelstadt, wife of the chairman of Colonia Versicherungs-Gesellschaft of Cologne. The 159-meter-long ship is the ninth vessel being built by the yard for the Bernard Schulte shipping company of Hamburg. The Immanuel Kant is powered by a license-built B&W two-stroke main engine, type 8L 45GFCA, having a maximum continuous rating of 5,800 kw (7,890 hp) at 175 rpm. The engine is designed to burn heavy fuel oil IF 380 (3,500 sec. Redwood I).

**WOOD/GRP STRUCTURAL  
DESIGN MANAGER**

Progressive upper Midwest shipyard has an immediate opening for a Wood/GRP Structural Design Manager. This is a new position created by an expansion of our engineering department to include wood and GRP capability. Person selected will have at least three (3) years of structural design experience in wood and/or GRP hull construction. An engineer-degree in naval architecture or structural engineering is highly desirable. Salary commensurate with ability and experience. We offer an outstanding benefit program along with a northern resort community atmosphere. Please send resume or call collect if interested.

**MARINETTE MARINE CORPORATION**  
ELY STREET  
MARINETTE, WI 54143  
ATTN: ROBERT SUNSTROM,  
EMPLOYEE RELATIONS MANAGER  
TELEPHONE: (715) 735-9341

*Equal Opportunity Employer M/F*



# BUYERS DIRECTORY

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

## AIR CONDITIONING AND REFRIGERATION—REPAIR & INSTALLATION

Adrick Cooling Corporation, 320 Cantor Ave., Linden, NJ 07036  
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231  
Nance Industries, P.O. Box 1547, Beaumont, TX 77704-1547  
York Division, Borg-Warner Corp., P.O. Box 1592, York, PA 17405

## ANCHORS AND CHAIN

Baldt Incorporated, P.O. Box 350, Chester, PA 19016  
William Pot B.V., Industriële Handel, Groothandelsgebouw, 45 Stationsplein, Rotterdam, 3004, Holland

## ANODES—Cathodic Protection

Engelhard Industries Division, 2655 U.S. Route 22, Union, N. 07083  
Wilson Walton International Inc., 66 Hudson Street, Hoboken, NJ 07030

## BASKET STRAINERS

North Star Marine & Industrial Products, Inc., 84 Wall Street, Farmingdale, NY 11735

## 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  
Thomson-Gordon Limited, 3225 Mainway, Burlington, Ontario, Canada L7M 1A6

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  
Complete Abrasive Blasting Systems, 18250 68th Avenue South, Kent, WA 98031

E.I. DuPont de Nemours & Co., Inc., Starblast Division, Room X39186, Wilmington, DE 19898

Schmidt Mfg. Inc., P.O. Box 45857, Houston, TX 77254

## BOILERS

Combustion Engineering, Inc., Windsor, Connecticut 06095  
Foster Wheeler Boiler Corp., 110 S. Orange Ave., Livingston, NJ 07039

## BROKERS

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

## BRONZES—COMMEMORATIVE

Duramax Metals, Inc., 2401 Wesley Street, Portsmouth, VA 23707

## 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 HANDLING EQUIPMENT

Dynamic Air, Inc., P.O. Box 43074, St. Paul, MN 55164  
Navire Cargo Gear (U.S.) Inc., 570 Rahway Avenue, Woodbridge, NJ 07095

Navire Cargo Gear International AB, Box 8991, s-402 74, Goteborg 8, Sweden

W.W. Patterson Company, 3 Riversea Road, Pittsburgh, PA 15233

## CARGO TRANSFER & ACCESS EQUIPMENT

MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016

## CHECKING SYSTEMS

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

## CLAMPS

Band-It Company, P.O. Box 16307, Denver, CO 80216

## CONDENSERS

G & W Acme Division, Gulf & Western Manufacturing Company, Jackson, MI 49202

## CONTAINERS—Cargo Container Handling

Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501

## CONTRACTORS—LABOR

CISCO, 1528 E. Adams Street, Jacksonville, FL 32202

## CONTROL SYSTEMS—Monitoring

Aris Electric Company, 327 Fourth St., Brooklyn, NY 11215  
Electric Tachometer Corp., 68th & Upland Street, Philadelphia, PA 19142

Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913  
Megsystems, Inc., 1075 N.W. 58th Street, Boca Raton, FL 33431  
National Control Systems, Inc., 827 Hanley Industrial Court, St. Louis, MO 63144

Norcontrol, 135 Fort Lee Rd., Leonia, NJ 07605  
Pan American Systems Corporation, P.O. Drawer 400, Belle Chasse, LA 70037

Sybron Corp., Analytical Products Div., 221 Rivermoor St., Boston, MA 02132

Row Computer Automations, Inc., 1085 Rockaway Ave., Valley Stream, NY 11580

Tracor Marcon, Inc., 13433 N.E. 20th St., Bellevue, WA 98005  
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062

## COUPLINGS

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

## CRANES—HOISTS—DERRICKS—WHIRLEYS

American Hoist & Derrick Company (AMHoist), St. Paul, MN 55107

Appleton Machine Co., P.O. Box 22339, Appleton, WI 54911  
Blomh & Voss Company, 55 Morris Avenue, Springfield, NJ 07081  
Grove Manufacturing Co., P.O. Box 21, Shady Grove, PA 17256

HIAB Cranes & Loaders Inc., Rd. # 22 Interchange Place York, PA 17402

M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07087  
Marathon LeTourneau Offshore Co., 1700 Marathon Bldg., 600 Jefferson, Houston, TX 77002

Marine Travelift, Inc., 49 E. Yew St., Sturgeon Bay, WI 54235  
Matson Terminals, Inc., P.O. Box 3933, San Francisco, CA 94119  
National Crane Corp., 11200 North 148 St., Waverly, NE 68462  
National Supply Company, 1455 West Loop South, Houston, TX 77027

Nautilus Crane, P.O. Drawer 1287, Metairie, LA 70004  
Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501

Superior-Lidgerwood-Mundy Corp., 1101 John Ave., Superior, WI 54880

## DECK MACHINERY—Cargo Handling Equipment

Appleton Machine Co., P.O. Box 22339, Appleton, WI 54911  
Marine Technical Associates, 195 Patterson Avenue, Little Falls, NJ 07424

Marotta Scientific Controls, Inc., Boonton Avenue, Boonton, NJ 07005

Markey Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134

## DIESEL ACCESSORIES—CYLINDER LINERS

B & W Marine Service, 50 Broadway, New York, NY 10034  
General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, Massachusetts 02360

Granges Repair Service GmbH, Gutenbergring 64, 2000 Hamburg-Norderstedt, West Germany  
Haynes Corporation, P.O. Box 179, Jackson, MI 49204

Twin Disc, Inc., 1328 Racine Street, Racine, WI 53403  
Van der Horst Corp. of America, 314 Penn Ave., Olean, NY 14760

## ELECTRICAL EQUIPMENT

Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013

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

## MULTISYSTEMS

Cleanadon A/S, N. American Agents, American United Marine Corp., 5 Broadway, Route 1, Saugus, MA 01906

Fire-Brite, Haffert Manufacturing Company, Inc., 1700 East Church Street, Jacksonville, FL 32201

## EQUIPMENT—Marine

Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013

Band-It Division, Houdaille Industries, Inc., P.O. Box 16307, Denver, CO 80216

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  
Donn Corporation, 1000 Crocker Road, Westlake, OH 44145  
b.v. Holmatro Industrial Equipment, P.O. Box 33, 4940 aa Raamsdonsveer, Holland

Kearfoot Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550

J.H. Menge & Company, Inc., P.O. Box 23602, New Orleans, LA 70175

John P. Nissen, Jr. Company, Glenside, PA 19038  
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080

Sofftech, 460 Totten Pond Road, Waltham, MA 02154  
Stal Laval Inc., 525 Executive Blvd., Elmsford, NY 10523

Strachan-Mackoe Corporation, P.O. Box M850, Hoboken, NJ 07030  
Xorbox, Division of Greene & Kellogg, Inc., 290 Creekside Dr., Tonawanda, NY 14150

## EVAPORATORS

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

## FANS—VENTILATORS—BLOWERS—HEATEXCHANGERS

American Standard Inc., Heat Transfer Div., Buffalo, NY 14240  
Flexaust Company, 11 Chestnut Street, Amesbury, MA 01913  
Hartzell Fan, Division of Castle Hills Corp., 901 S. Downing St., P.O. Box 919, Piqua, OH 45356

Joy Manufacturing Co., 338 So. Broadway, New Philadelphia, Ohio 44663

Marlo Coil/Nuclear Cooling, Inc., P.O. Box 171, High Ridge, MO 63049

Tranter Inc., 6700 Finch Ave. West, Rexdale, Ontario, Canada M9W 5P5

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  
Intertrade Industries, Inc., 15301 Transistor Lane, Huntington Beach, CA 92649

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

Seaward International, Inc., 6269 Leesburg Ave., Falls Church, Va. 22044

## FILTERS

Facet Enterprises, P.O. Box 50096, Tulsa, OK 74150

## FINANCING—Leasing

Warburg Paribas Becker, Inc., 2 First National Plaza, Chicago, Ill. 60670

Yegen Marine, P.O. Box 25504, Ft. Lauderdale, FL 33320

## FUEL OIL/ADDITIVES—Analysis & Combustion Testing

Ferrous Corporation, 910-108th N.E., P.O. Box 1764, Bellevue, WA 98009

New York Mercantile Exchange, Four World Trade Center, New York, NY 10048

Petrocon Marine & Industrial Chemical Corporation, 243 44th Street, Brooklyn, NY 11232

Rolite Products Inc., 300 Broad Street, Stamford, CT 06901

XRG International, Inc., 4125 S.W. Martin Hwy., Stuart, FL 33494

## 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, W227 N546 Westmound Dr., Waukesha, WI 53186

## GANGWAYS

Lapayre Stair, Inc., P.O. Box 50699, New Orleans, LA 70150  
Rampmaster Inc., 1226 N.W. 23rd Ave., Fort Lauderdale, Fla. 33311  
W & A Engineers, Inc., 4040 Veterans Highway, Metairie, LA 70002

## HATCH & DECK COVERS—Chain Pipe

Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207

MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016  
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696

Navire Cargo Gear (U.S.) Inc., 570 Rahway Avenue, Woodbridge, NJ 07095

Navire Cargo International AB, Box 8991, s-402 74, Goteborg 8, Sweden

Julius Mock & Sons, Inc., 20 Vesey Street, New York, NY 10007

## 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

Underwater Hull Maintenance, 104 Waterview Dr., Crownsville, MD 21032

## HYDRAULICS

Helmut Eller & Son, Inc., 2000 East Bay Street, Jacksonville, FL 32202

Hydranautics, 6338 Lindmar Drive, Goleta, CA 93017  
Victor Fluid Power, 7527 Mitchell Rd., Eden Prairie, MN 55344

## INERT GAS—Generators—Systems

Camar Corporation, P.O. Box 460, Worcester, MA 01613  
Fredrekstad, N. American Agents, American United Marine Corp., 5 Broadway, Route 1, Saugus, MA 01906

Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039

## INSULATION—Cloth, Fiberglass

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

Assurance Foreningen Skuld, P.O. Box 1376 Vika, Stortingagaten 18, N-OSLO 1, Norway

Midland Insurance Co., 160 Water St., New York, N.Y. 10038

## JOINER—Watertight Doors—Paneling

Masonite Commercial Division, Dover, OH 44622  
Pioneer Industries, Division of CORE Industries Inc., 401 Washington Avenue, Carlstadt, NJ 07072

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

## LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights

Browning Marine Inc., (Aqua Signal), 33W 480 Fabyan Parkway, Ste 105, West Chicago, IL 60185

Midland-Ross Corp., Russellstoll Division, 530 W. Mt. Pleasant Ave., Livingston, NJ 07039

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  
Phoenix Products Company, Inc., 4769 North 27th Street, Milwaukee, WI 53209

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

Triboro Industries Inc., 173 Marine Street, New York, NY 10464

## MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING

Granges Repair Service GmbH, Gutenbergring 64, 2000 Hamburg-Norderstedt 3, West Germany

Essex Machine Works, Essex, CT 06426  
Jered Brown Brothers Inc., 56 S. Squirrel Road, Auburn Heights, MI 48057

Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080

Triboro Industries Inc., 173 Marine Street, Bronx, NY 10464

## METALS

Bayou Steel Corp., P.O. Box 5000, Laplace, LA 70068  
Inland Steel Company, 30 West Monroe Street, Chicago, IL 60603

International Grating, Inc., 7625 Parkhurst, Houston, TX 77028  
Lukens Steel Company, Coatesville, PA 19320  
Millard Controlled Metals, 5 Louise Drive, Ivyland, PA 18974

## MOORING SYSTEMS

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

NAME PLATES—BRONZE—ALUMINUM  
Duramax Metals, Inc., 2401 Wesley Street, Portsmouth, VA 23707

## NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS

Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Highway (Suite 1300), Arlington, VA 22202

American Systems Engineering Corp., P.O. Box 4265, Virginia Beach, VA 23454

Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015

Art Anderson Associates, 148 First St., Bremerton, WA 98310  
B.C. Research, 3650 Westbrook Mall, Vancouver, B.C., Canada V6S 2L2

Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130

Bretagne ACB Corp., 344 Camp St., Suite 1000, New Orleans, LA 70130

Bristolcomp, P.O. Box 450, Bristol, RI 02809  
C.D.I. Marine Co., Regency East, Ste 222, 9951 Atlantic Blvd., Jacksonville, FL 32211

C.T. Marine, 18 Church Street, Georgetown, CT 06829  
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  
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., 1725 Jefferson Davis Highway, Suite 700, Arlington, VA 22202

Donhauser Marine, Inc., 11511 Katy Freeway, Houston, TX 77079  
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., 935 Gravier St., New Orleans, LA 70112

GEOD Corporation, 73 Oak Ridge Road, NJ 07438  
Giannotti & Associates, Inc., 703 Giddings Ave., Suite U-3, Annapolis, MD 21401

Gibbs & Cox, Inc., 119 West 31st Street, New York, NY 10001  
John W. Gilbert Associates, Inc., 38 Commercial Wharf, Boston, Mass. 02110

The Glisten 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

J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048

Hoffman Maritime Consultants Inc., P.O. Box 186, Glen Head, NY 11545

Hydranautics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810

Intramarine, Inc., P.O. Box 53043, Jacksonville, FL 32201  
R.D. Jacobs & Associates, 11405 Main St., Roscoe, IL 61073

Capt. Ernest James, 2849 Beavercrest Dr., Lorain, OH 44053  
Jantzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227

R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235  
Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963  
Timsco, 622 Azalea Road, Mobile, AL 36609  
Uhlig & Associates, Inc., 8295 SW 188th St., Miami, FL 33157  
Wesley D. Wheeler Assoc., Ltd., 104 E. 40th St., Suite 206, New York, NY 10016  
Thomas B. Wilson, Associates, 1258 North Avalon Blvd., Wilmington, CA 90744  
Wink Incorporated, 8020 Mayo Blvd., New Orleans, LA 70126  
Yacht Design Institute, 9 Main St., Blue Hill, ME 04614

**NAVIGATION & COMMUNICATIONS EQUIPMENT**  
AAT Communications Corporation, 1854 Hylan Blvd., New York, NY 10305  
Alden Electronics, 1145 Washington St., Westborough, MA 01581  
American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526  
Atkinson Dynamics, Section 6, 10 West Orange Ave., South San Francisco, CA 94080  
Frank L. Beier Radio, P.O. Box 10307, Jefferson, LA 70181  
Dantronics Co., P.O. Box 204, Boca Raton, FL 33432  
DEBEG Marine, Inc., 10 Manor Parkway, Salem, NH 03079  
Electric Tachometer Corp., 68th & Upland Street, Philadelphia, PA 19142  
Electro-Nav Inc., 840 Bond Street, Elizabeth, NJ 07201  
EPSCO Marine, 550 Wholesalers Parkway, Harahan, LA 70123  
Fleet Marine, 1820 N.E. 146th Drive, North Miami, FL 33181  
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080  
Griffith Marine Navigation, Inc., 134 North Avenue, New Rochelle, NY 10801  
Harris Communications (RF Communications), 1680 University Avenue, Rochester, NY 14610  
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913  
Hose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631  
ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611  
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  
G.E. McKay Company (Dymek), 111 South College Avenue, Claremont, CA 91711  
Magnavox Navigation Systems, 2829 Maricopa Street, Torrance, CA 90503  
Maritel, Inc., 8230-R Telegraph Road, Odenton, MD 21113  
Nav-Com, Inc., 9 Brandywine Drive, Deer Park, NY 11729  
Navidyne Corp., 11824 Fishing Point Drive, Newport News, VA 23606  
North American Philips Communication Corp., 55 Knights Bridge Road, Piscataway, NJ 08854  
Northern Radio Co., 14975 N.E. 40th, Redmond, WA 98052  
P. J. Plishner Marine, 2 Lake Ave. Ext., Danbury, CT 06810  
Racal-Decca Marine, Inc., 4200 23rd Avenue West, Seattle, WA 98199  
Radar Devices, Inc., 2955 Merced Street, San Leandro, CA 94577  
Radio-Holland USA, Inc., One Allen Center, Suite 1000, Houston, TX 77002  
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  
Rivertronics, P.O. Box 247, Godfrey, IL 62035  
Robertson Auto Pilot, 135 Fort Lee Road, Leonia, NJ 07605  
Simrad, Inc., 2215 NW Market St., Seattle, WA 98107  
Si-Tex Marine Electronics, P.O. Box 6700, Clearwater, FL 33518  
Sperry Marine Systems, Great Neck, NY 11020  
Standard Communications, P.O. Box 92151, Los Angeles, CA 90009  
Texas Instruments, Inc., P.O. Box 405, 3438, Lewisville, TX 75067  
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721

**OILS—Marine—Additives**  
Gulf Oil Company—U.S. (Domestic Oils), 909 Fannin Street, Houston, TX 77001  
Gulf Oil, New York District Sales Office (Domestic), 433 Hackensack Avenue, Hackensack, NJ 07601  
Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019  
Mobil Oil Corp., 150 East 42 Street, New York, NY 10017  
National Fluid Separators, Inc., 1239 Hanley Industrial Court, St. Louis, MO 63144  
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002  
Texaco, Inc. (International Marine), 135 East 42nd St., N.Y., N.Y. 10017

**OIL WATER SEPARATORS**  
Alfa-Laval, Inc., Dept. MR-2, 2115 Linwood Ave., Fort Lee, NJ 07024  
Biospherics Incorporated, 5001 Forbes Blvd., Lanham, MD 20801  
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932  
Centrico, Inc. (Westfalia Separators), 100 Fairway Court, Northvale, NJ 07647  
Fram Industrial, P.O. Box 33210, Tulsa, OK 74135  
McTighe Industries Inc., 1615 Ninth Avenue, Suite 1 South, Bohemia, NY 11716  
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  
Apache Equipment Co., 10690 Shadow Wood Drive, Suite 112, Houston, TX 77043  
Bywater Coatings, 1610 Engineers Road, Belle Chasse, LA 70037  
"CONSOL" manufactured by Contact Paint & Chemical Co. Inc., 200 S. Franklinton Rd., Baltimore, MD 21223  
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 Avenue, So. San Francisco, CA 94080  
Farboil, 8200 Fischer Road, Baltimore, MD 21222  
Grow Group, Inc., 200 Park Ave., New York, NY 10017  
Hempel Marine Paints, Inc., 65 Broadway, New York, NY 10006; P.O. Box 41, So. Houston, TX 77587; P.O. Box 10265, New Orleans, LA 70181  
International Paint Company, Inc., 2270 Morris Avenue, Union, NJ 07083  
Jatun-Baltimore Copper Paint Co., 840 Key Highway, Baltimore, MD 21230  
Magnus Maritec International Inc., 150 Roosevelt Pl., P.O. Box 150, Palisades Park, NJ 07650  
Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O. Box 250, Edison, N.J. 08817  
Palmer Products Inc., P.O. Box 8, Worcester, PA 19490  
Selby, Battersby & Company, 5220 Whiby Avenue, Philadelphia, PA 19143

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

**PIER REPAIRS**  
Acquatic Marine Systems, Inc., P.O. Box 326, Williamsville, NY 14221

**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., 1821 Rochester Industrial Dr., Rochester, MI 48063  
Knights' Piping Inc., 5309 Industrial Road, Pascagoula, MS 39567  
Kubota Ltd., 2-47, Shikit Suhigashi 1-Chome, Naniwa-Ku, Osaka 556-91, Japan  
Metropolitan Plumbing Supply Corp., 5000 Second St., Long Island City, NY 11101  
Penco Division/Hudson Engineering Co., P.O. Box 68, Bayonne, NJ 07002  
Pioneer Valve & Fitting Co., Inc., 93 Seigel Street, Brooklyn, NY 11206  
Sanchem, Inc., 1600 South Canal Street, Chicago, IL 60616  
Stauff Corporation, 21-31 Industrial Park, Waldwick, NJ 07463

Tioga Pipe & Supply Company, 2450 Wheatshaf Lane, Philadelphia, PA 19137

**PLAQUES—BRONZE—ALUMINUM**  
Duramax Metals, Inc., 2401 Wesley Street, Portsmouth, VA 23707

**PLASTICS—Marine Applications**  
Griffolyn Company, P.O. Box 33248, Houston, TX 77033  
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  
Armo 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  
Caterpillar Engine Division, 100 N.E. Adams, Peoria, IL 61629  
Colt Industries Inc. (Fairbanks Morse Engine Div.), 701 Lawton Avenue, Beloit, WI 53511  
Columbian Bronze Corporation, 216 No. Main Street, Freeport, NY 11520  
Combustion Engineering, Inc., Windsor, Connecticut 06095  
Cummins Engine Company, Inc., 40642, 1000 Fifth Street, Columbus, IN 47201  
Diesel Marine International, Ltd., c/o NORSHIPCO, P.O. Box 2100, Norfolk, VA 23501  
Elliott Company, 1809 Sheridan Ave., Springfield, OH 45505  
Escher Wyss GmbH, (Member Sulzer Group), Ravensburg, Germany  
General Electric Co., Diesel Power Products, 2901 E. Lake Rd., Erie, PA 16531  
General Motors, Electro-Motive Division, LaGrange, IL 60525  
George Engine Company, Inc., Lafayette, LA  
Jacuzzi Bros. Division, P.O. Box 3533, Little Rock, AR 72203  
Kawasaki Heavy Industries, Ltd., 2-4-1 Hamamatsu-cho, Minato-ku, Tokyo, Japan  
Krupp Mak Diesels, Inc., 9701 West Higgins Road, Rosemont, IL 60018  
MTU of North America, One E. Putnam Ave., Greenwich, CT 06830; 10450 Corporate Dr., Sugarland, TX 77478; 2945 Railroad Ave., Morgan City, LA 70203; 180 Nickerson St., Seattle, WA 98109; 1730 Lynn St., Arlington, VA 22209  
Mapco Products, Ltd., 20 Vesey St., New York, NY 10007  
Maritime Industries, Ltd., 6307 Laurel St., Burnaby, B.C. Canada V5B 3B3  
Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507  
Omnitruster Inc., 9515 Sorensen Ave., Santa Fe Springs, CA 90670  
Oosterhuis Industries, Inc. (Marine Engineering, Inc.), P.O. Box 30587, New Orleans, LA 70190  
Penske GM Power, Inc., 180 Route 17 South, Lodi, NJ 07644  
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014  
Propulsion Systems, Inc., 21213 76th Ave. So., Kent, WA 98031  
SACM (Societe Alsacienne De Constructions Mechaniques De Mulhouse) 1, Rue De La Fonderie, Boite Postale 1210, 68054 Mulhouse Cedex, France  
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166  
Skinner Engine Company, P.O. Box 1149, Erie, PA 16512  
Sulzer Brothers, Dept. Diesel Engines, CH-8401 Winterthur, Switzerland  
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  
Tricon Corporation, P.O. Box 149, Redding, CT 06875  
Turbine Specialties, Inc., P.O. Box 207, West State Street Road, Salina, KS 67401  
Voith Schneider America, 159 Great Neck Rd., Ste 200, Great Neck, NY 11021  
Wartsila Power Inc., 5132 Taravella Rd., P.O. Box 868, Marrero, LA 70072  
Waukesha Engine Division, Waukesha, WI 53187  
ZF of North America, Inc., 3225 Commercial Avenue, Northbrook, IL 60062

**PUMPS—Repairs—Drives**  
Barco Corporation, 16 Bahama Circle, Tampa, FL 36606  
EMMI Corporation, P.O. Box 955, Flemington, NJ 08822  
FMC Corporation, Pump Division, 326 S. Dean Street, Englewood, NJ 07631  
Jim's Pump Repair, 48-55 36th St., Long Island City, NY 11101  
Megator Corporation, 562 Alpha Drive, Pittsburgh, PA 15238  
Naniwa Pump, c/o Maritime Equipment Inc., P.O. Box 537, Flemington, NJ 08822  
Penco Division/Hudson Engineering Co., P.O. Box 68, Bayonne, NJ 07002  
Transamerica Delaval, IMO Pump Division, P.O. Box 447, Monroe, NC 28110  
Warren Pumps Division, Bridges Avenue, Warren, MA 01083  
Wilden Pump & Engineering Co., 22060 Van Buren St., P.O. Box 845, Colton, CA 92324  
Worthington Group—McGraw Edison Co., 270 Sheffield Street, Mountaintop, 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

**ROLLING SYSTEMS**  
Hilman, Inc., 2604 Atlantic Ave., Wall (Belmar), NJ 07719

**ROPE—Manila—Nylon—Hawthers—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  
Tubbs Cordage Company, P.O. Box 709, Orange, CA 92666

**RUDDER ANGLE INDICATORS—STEERING**  
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  
Wm. E. Hough Company, 1129 NW Ballard Way, Seattle, WA 98107  
Robertson, 135 Fort Lee Rd., Leonia, NJ 07605

**SAFETY EQUIPMENT**  
Datex, 3795 N.W. 25th Street, Miami, FL 33142  
Elkhart Brass Manufacturing Co., Inc., P.O. Box 1127, Elkhart, IN 46515

**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  
Effluent Technology Corporation, P.O. Box 2094, Tacoma, WA 98401  
Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696  
Marland Environmental Systems, Inc., N. Main Street, Walworth, WI 53184  
National Sanitation Foundation, P.O. Box 1468, Ann Arbor, MI 48105  
St. Louis Ship FAST Sewage Systems, 611 East Marceau St., St. Louis, Mo. 63111

**SCAFFOLDING EQUIPMENT—Work Platforms**  
Patent Scaffolding Co., One Bridge Plaza, Fort Lee, NJ 07024  
Swiss Fabricating Inc., Camp Horne Rd., Emsworth, Pittsburgh, PA 15237  
Waco Ladder & Scaffolding Co., Inc., 4315 41 St., P.O. Box 126, Brentwood, MD 20722

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

**SHAFT SEALS, REVOLUTION INDICATOR EQUIPMENT**  
Bird-Johnson Co., 100 Norfolk St., Walpole, MA 02081  
Crane Packing Company, 435 Regina Dr., Clarksburg, MD 20734  
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142  
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913

Penco Division/Hudson Engineering Co., P.O. Box 68, Bayonne, NJ 07002

**SHIPBREAKING—Salvage**  
The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202  
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

**SHIPBUILDING STEEL**  
Armo 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  
Arsenale Triestino S. Marco, Passeggio S. Andrea 11, 34143 Trieste Italy  
Asmar Shipyards Co., Astilleros y Maestranzas de la Armada, Prat 856, Piso 14, Casilla 150-V, Valparaiso, Chile, S.A.  
Astilleros Balboa, S.A., c/o Jackson Marine Corp., 17 Battery Place, New York, NY 10004  
Astilleros Unidos de Veracruz, S.A., San Juan de Ulua S/N, Apdo. Postal 647, Veracruz, Ver., Mexico  
Ateliers et Chantiers de Bretagne—ACB, 44040 Nantes Cedex, France  
Atlantic Dry Dock, P.O. Box 276, Ft. George Island, Jacksonville, FL 32226  
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 Corp., 605 North 3rd Ave., Sturgeon Bay, WI 54235  
BFC Marine Services, Inc., 25 Fifth St., Brooklyn, NY 11231  
Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085  
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004  
Bloum & Voss Company, 55 Morris Avenue, Springfield, NJ 07081  
Blodworth Bond Shipyard Inc., P.O. Box 5065, Houston, TX 77012  
Boeing Marine Systems, P.O. Box 3707, Mail Stop 14-11, Seattle, WA 98124  
Burmeister & Wain Skibsvaerft A/S, P.O. Box 2122, Refshaleoen-1015 Copenhagen K-Denmark  
Burrard Yarrowas Corporation, P.O. Box 86099, North Vancouver, B.C., Canada  
Burton Shipyard, Inc., P.O. Box 3636, Port Arthur, TX 77640  
Caddell Drydock & Repair Co., P.O. Box 327, Foot of Broadway, Staten Island, NY 10310  
Cantieri Navali Luigi Orlando, Piazza Mazzini, 92-57100 Livorno, Italy  
Cantieri Navali Riuniti, Via Cipro, 11, 16100 Genova, Italy  
Carrington Slipways Pty. Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322  
China Shipbuilding Corp., 6th Floor, 20 PA Teh Road, Sec. 3 Taipei, Taiwan (105) Republic of China  
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  
Eastern Marine, Inc., P.O. Box 1009, Panama City, FL 32401  
FMC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208  
Faustug Marine Corporation, 601 Sawyer, Suite 201, Houston, TX 77007  
Golden Gulf Marine Operations, Inc., 814 Howard Avenue, New Orleans, LA 70151  
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.  
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  
Hyundai Mipo Dockyard Ltd., 456 Cheonha-Dong, Ulsan, Korea I.N.M.A. S.p.A., 19100 La Spezia, v. le S. Bartolomeo 362, Italy  
Jeffboat, Inc., Jeffersonville, Ind. 47130  
Keppel Shipyard Limited, 325 Telok Blangah Road, P.O. Box 2169, Singapore 0409  
Kinos Craft, Inc., Industrial Park, Florence, AL 35630  
Koch Ellis Barge & Ship Service, P.O. Box 187, Westwego, LA 70094  
Leevac Corporation, P.O. Box 2607, Marqan City, LA 70381  
Lisnave Estaleiros Navais De Lisboa, P.O. Box 2138, Lisbon, Portugal  
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue S.W., Seattle, Wash. 98134  
McDermott, Incorporated, 1010 Common Street, New Orleans, LA 77227  
MacGregor Land & Sea, Inc., 135 Dermody Street, Cranford, NJ 07016  
John Manly Shipyards, 2050 East Kent Ave., Vancouver, B.C. V5P 2T2, Canada  
Marathon LeTourneau Offshore Co., 1700 Marathon Bldg., 600 Jefferson, Houston, TX 77002  
Marinette Marine Corp., Ely St., Marinette, WI 54143  
Matton Shipyard Co., Inc., P.O. Box 645, Cohoes, New York 12047  
Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681  
Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655  
Moran Shipping Agencies, 10 Jefferson Blvd., Warwick, RI 02888  
Moss Point Marine Inc., P.O. Box 1310, Escatawpa, MS 39552  
Nashville Bridge Company, P.O. Box 239, Nashville, TN 37202  
National Steel & Shipbuilding Corp., San Diego, Calif. 92112  
Newpark Shipbuilding & Repair, Inc., 502 Cypress Street, Houston, TX 77012  
Newport News Shipbuilding & Dry Dock Co., 4101 Washington Ave., Newport News, Va. 23607  
O.A.R.N. (Officine Allestimento-Riprazioni Navi), P.O. Box 1395 Genoa, Italy 16100  
Overseas Shipyards, Inc., 21 West St., New York, NY 10006  
Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501  
Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla 33156  
Pennsylvania Shipbuilding Company, Chester, PA 19013  
Progressive Shipbuilders & Fabricators, Inc., P.O. Box 9130, Houma, LA 70361  
Promet (PTE) Ltd., 27 Pandam Rd., Jurong Industrial Estate, Singapore 22  
Puerto Rico Drydock & Marine Terminals, Inc., P.O. Box 2209, San Juan, Puerto Rico 00903  
Rauma-Repola, 26100 Rauma 10, Finland  
Savannah Shipyard Co., P.O. Box 787, Savannah, GA 31402  
Southbay Boat Inc., P.O. Box 13308, San Diego, CA 92113  
Southwest Marine, Inc., P.O. Box 13308, San Diego, CA 92113  
Swiftships Inc., P.O. Box 1908, Morgan City, LA 70380  
Tacoma Boatbuilding Co., Inc., 1840 Marine View Drive, Tacoma, WA 98422  
Tandano (Piacentini), Antartida Argentina 555 Darsena Norte. (1104) Buenos Aires-Republica Argentina  
Thomas Marine, 37 Bransford St., Patchogue, NY 11772  
Thunderbolt Marine, Inc., P.O. Box 3628, Savannah, GA 31404  
Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004  
Total Transportation Systems Inc., 813 Forest Dr., Newport News, VA 23606  
Total Transportation Systems (International) A/S, Bjornegarden, P.O. Box 28, N5201 Oslo, Norway  
Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316  
Umpqua Marine Way, Inc., Port Industrial Park, Reedsport, OR 97467  
Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087  
Valmet Oy, Helsinki Shipyard, Laivanrakentantie 2, P.O. Box 910 SF-00101 Helsinki 10, Finland  
Waterman Supply Co., 2815 E. Anaheim St., P.O. Box 596, Wilmington, CA 90748  
West Coast Salvage And Contracting, 2150 East Kent Avenue, Vancouver, B.C. V5P 2T2

# BUYERS DIRECTORY

(continued)

Zidell Explorations, Inc., 3121 S.W. Moody Street, Portland, OR 97201

**SHIPPING—PACKING**  
Candia Shipping (USA) Inc., One World Trade Center, Suite 1611, New York, NY 10048  
World Courier, Inc., 19 Rector Street, New York, NY 10006

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

**STEVEDORING**  
Eller & Co., 701 E. 24th St., Ft. Lauderdale, FL 33316

**STUFFING BOXES**  
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062  
Smith-Meeker Engineering Co., 157 Chambers Street, New York, NY 10007

**SURVEYORS AND CONSULTANTS**  
Francis B. Crocco, Inc., P.O. Box 1411, San Juan, Puerto Rico 00903  
Hull & Cargo Surveyors, Inc., 99 John St., New York, NY 10038  
M.A. Stream Associates, Inc., 400 Second Ave. W., Seattle, WA 98119

**TANK CLEANING**  
Butterworth Systems Inc., 224 Park Ave., P.O. Box 352, Florham Park, N.J. 07932  
Penco Division/Hudson Engineering Co., P.O. Box 68 Bayonne, NJ 07002  
Salwico, Inc., 5 Marine View Plaza, Hoboken, NJ 07030  
Sybron/Gamlen, 121 South Maple Avenue, South San Francisco, CA 94080

**TANK LEVELING INDICATORS**  
Kockumation AB, Box 1044, S-212 10 Malmo, Sweden  
Norcontrol, 135 Fort Lee Rd., Leonia, NJ 07605  
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062  
Vitronics, P.O. Box 42305, Houston, TX 77042

**TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.**  
Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002  
Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202  
Henry Gillen's Sons Lighterage, 21 West Main St., Oyster Bay, N.Y. 11771  
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.  
Moron 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  
Turecama Coastal & Harbor Towing Corp., One Edgewater St., Clifton, Staten Island, N.Y. 10305

**VALVES AND FITTINGS**  
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  
Litton Industrial Products, Inc. (Contromatics Division), 222 Roberts Street, East Hartford, CT 06108  
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696  
Metropolitan Plumbing Supply Corp., 50-09 Second Street, Long Island City, NY 11101  
Newmans Inc., 9 Joanna Court, East Brunswick, NJ 08816  
Parker-Hannifin Corporation, 17325 Euclid Avenue, Cleveland, OH 44112  
Pioneer Valve & Fitting Co., Inc., 93 Seigel Street, Brooklyn, NY 11206  
Tate Temco, Inc., 1941 Lansdowne Road, Baltimore, MD 21227  
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928  
Waukesha Bearings Corp., 405 Commerce St., P.O. Box 798, Waukesha, WI 53186  
William E. Williams Valve Corporation, 38-52 Review Avenue, Long Island City, NY 11101  
Winel, Inc., 34655 Mills Road, North Ridgeville, OH 44039  
Zidell Explorations, Inc., (Valve Division), 3121 S.W. Moody Avenue, Portland, OR 97201

**VIDEO TRAINING FILMS**  
Video Library Systems, 100 13th Ave., Ronkonkoma, NY 11779  
Videotel Marine International Ltd., 44 Great Marlborough Street, London W1V 1DB

**WATER PURIFIERS**  
Alfa-Laval, Inc., Dept. MR-2, 2115 Linwood Ave., Fort Lee, NJ 07024  
Drew Chemical Corporation, One Drew Chemical Plaza, Boonton, NJ 07005  
Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559  
Specific Equipment Company, P.O. Box 55626, Houston, TX 77055

**WINCHES AND FAIRLEADERS**  
Appleton Machine Co., P.O. Box 2339, Appleton, WI 54911  
Beebe Brothers, Inc., 2724 6th Avenue South, Seattle, WA 98134  
CONMACO, Inc., 820 Kansas Ave., P.O. Box 5097, Kansas City, KS 66119  
Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134  
McElroy Machine & Mfg. Co., Inc., P.O. Box 4454, W. Biloxi, MS 39531  
Reel-O-Matic Systems, Inc., 418 Hellam Street, Wrightsville, PA 17368  
Superior-Lidgerwood-Mundy Corp., 1101 John Avenue, Superior, WI 54880  
Timberland Equipment Ltd., Box 490, Woodstock, Ont. Canada N4S 7Z2.

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

**WIRE AND CABLE**  
Anixter Bros., Inc., 4711 Golf Road, One Concourse Plaza, Skokie, Illinois 60076  
Seacoast Electric Supply Corp., 225 Passaic St., Passaic, NJ 07055  
Seacoast Electric Supply Corp., 1505 Oliver St., Houston, TX 77007  
Tri-Mark, Inc., 8585 Industry Park Drive, Piqua, OH 45356  
Universal Wire & Cable, 6609 Supply Row, Houston, TX 77261

**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  
I & I Sling Company, 2626 Market Street, Dept. D, Aston, PA 19014

**ZINC**  
Smith & McCorken, 153 Franklin St., New York, N.Y. 10013

## Nome Seeks \$38.5-Million For Proposed Year-Round Port

Plans are on the drawing board to construct a modern port in Nome, Alaska.

The city is asking the state legislature to appropriate \$38.5 million for construction of a medium draft port near the mouth of the Snake River. The project is the number one priority for marine construction in northern Alaska, according to State Department of Transportation and Public Facilities official **Jonathan Widdis**.

The facilities will eliminate the need to transfer freight at sea to smaller coastal barges to bring it ashore. Today the cost of "lighterage" is about 25 percent of the freight cost from Seattle.

The port layout, prepared by the engineering firm Tippetts-Abbett-McCarthy-Stratton (TAMS), features a 3,600-foot rubble mound causeway leading to an offshore terminal. Short-term storage and marshaling areas will be available at the seaward end, with about 60 acres onshore for container and general cargo storage. Additional piers and service areas can be added as needed for offshore oil company activities year-round. The causeway can be extended another 1,000 to 1,500 feet to provide berths for bulk ore carriers.

With potential year-round use in mind, along with the need to keep maintenance and construction costs at a minimum, engineers have designed an ice-resistant causeway that also will withstand the strong erosive forces of Norton Sound's high winds and waves during late summer and autumn storms.

The causeway's design is based in part on studies conducted by the Institute of Hydraulics Research of the University of Iowa. A model of the causeway was placed in a 60-foot by 20-foot tank where sheets of ice were pushed up against it.

A major objective was to develop a way to prevent the ice from overriding the causeway. The tests showed that, despite the special sloping design created for the sides of the causeway, ice still moved over the model. As a result, TAMS project manager **Michael Horton** said the design philosophy is now one of management rather than prevention. "The causeway is designed to accommodate ice override as an occasional event," he said.

This will be done by building the sides at a slope. One side will be built higher than the other, so that ice override can be bulldozed off. "The cost savings of this system over an elaborate ice prevention scheme are substantial," Mr. Horton said.

To help prevent the causeway from eroding, large boulders will be placed on the slopes to act as breakwater barriers. Testing at the University of Florida will tell engineers more about the size of boulders needed to help stabilize the slopes, but Mr. Horton estimated rocks as large as 20 tons will be used.

The dock will be built with circular concrete caissons. Thirty of the large tub-shaped forms will be barged from the Lower 48 and sunk into place at the seaward end of the causeway to form the dock face. The circular caissons will stand up better than

the traditional box-shaped forms under the direct stress of the waves.

Another feature of the causeway design is the inclusion of a "fish breach": a small bridge near the shoreline to permit salmon and other species of fish to migrate freely.

Preliminary studies are complete and final design work was recently submitted to city officials by TAMS. If the legislature approves the requested \$38.5-million for construction, the port project could go to bid during late summer, 1983, according to Nome city manager **Ivan Widom**.

## Hoffert Manufacturing Awards Caribbean Cruise At SNAME Exposition



Robert Mende, secretary of SNAME (left), shown with Paul E. Hoffert, president of Hoffert Manufacturing Co.

Hoffert Manufacturing Co., Jacksonville, Fla., was an exhibitor at the recent First International Maritime Exposition held in New York and sponsored by The Society of Naval Architects and Marine Engineers. On Friday, November 19, Hoffert had a drawing for a four-day cruise for two onboard the S.S. Emerald Sea, of Eastern Cruise Lines, from Miami to the Caribbean. **Robert Mende**, Secretary of SNAME, made the drawing and the winner was **Joseph Wren III**, vice president, engineering and construction of Amoco Transportation Co.

Hoffert manufactures "Fire-Brite," a Fuel Oil Water Emulsification System for burning emulsified fuel in both marine and industrial boilers. Hoffert states "Fire-Brite" is guaranteed to keep the combustion system clean, reduce the oxygen level and lower the number of times necessary to blow tubes.

Hoffert has perfected a marine system which has been proven onboard many vessels including those operated by Amoco, Texaco, Delta Lines, Eastern Cruise Lines, US Gypsum Co., and the Military Sealift Command, to name a few. The systems aboard these vessels have both saved fuel and increased efficiency.

The emulsion is consistently in the one to two micron range thereby giving the most efficient burn, and the company reports it has the only system matching the unique turndown ratios necessary on a marine system.

Hoffert further states the "Fire-Brite" System pays for itself in that the payback is three to four months based on fuel, soot blowing, and maintenance savings.

For free literature containing complete details on the "Fire-Brite" system,

Write 55 on Reader Service Card

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Uhlrig & Associates, Inc., 8295 SW 188th St., Miami, FL 33157  
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Thomas B. Wilson, Associates, 1258 North Avalon Blvd., Wilmington, CA 90744  
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Penco Division/Hudson Engineering Co., P.O. Box 68, Bayonne, NJ 07002  
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General Motors, Electro-Motive Division, LaGrange, IL 60525  
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Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central Post Office, Kowloon, Hong Kong  
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Matton Shipyard Co., Inc., P.O. Box 645, Cohoes, New York 12047  
Misener Industries, Inc., 3535 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681  
Monark Boat Co., P.O. Box 210, Manticello, Ark. 71655  
Moran Shipping Agencies, 10 Jefferson Blvd., Warwick, RI 02888  
Moss Point Marine Inc., P.O. Box 1310, Escatawpa, MS 39552  
Nashville Bridge Company, P.O. Box 239, Nashville, TN 37202  
National Steel & Shipbuilding Corp., San Diego, Calif. 92112  
Newpark Shipbuilding & Repair, Inc., 502 Cypress Street, Houston, TX 77012  
Newport News Shipbuilding & Dry Dock Co., 4101 Washington Ave., Newport News, Va. 23607  
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Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla. 33156  
Pennsylvania Shipbuilding Company, Chester, PA 19013  
Progressive Shipbuilders & Fabricators, Inc., P.O. Box 9130, Houma, LA 70361  
Promet (PTE) Ltd., 27 Pandam Rd., Jurong Industrial Estate, Singapore 22  
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Southwest Marine, Inc., P.O. Box 13308, San Diego, CA 92113  
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Tacoma Boatbuilding Co., Inc., 1840 Marine View Drive, Tacoma, WA 98422  
Tandanor (Piacentini), Antartida Argentina 555 Darsena Norte, (1104) Buenos Aires-Republica Argentina  
Thomas Marine, 37 Bransford St., Patchogue, NY 11772  
Thunderbolt Marine, Inc., P.O. Box 5628, Savannah, GA 31404  
Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004  
Total Transportation Systems Inc., 813 Forest Dr., Newport News, VA 23606  
Total Transportation Systems (International) A/S, Bjornegarden P.O. Box 28, N5201 Oslo, Norway  
Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316  
Umpqua Marine Way, Inc., Port Industrial Park, Reedsport, OR 97467  
Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087  
Valmet Oy, Helsinki Shipyard, Laivanrakentajantie 2, P.O. Box 910 SF-00101 Helsinki 10, Finland  
Waterman Supply Co., 2815 E. Anaheim St., P.O. Box 596, Wilmington, CA 90748  
West Coast Salvage And Contracting, 2150 East Kent Avenue, Vancouver, B.C. V5P 2T2

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Eller & Co., 701 E. 24th St., Ft. Lauderdale, FL 33316

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## Nome Seeks \$38.5-Million For Proposed Year-Round Port

Plans are on the drawing board to construct a modern port in Nome, Alaska.

The city is asking the state legislature to appropriate \$38.5 million for construction of a medium draft port near the mouth of the Snake River. The project is the number one priority for marine construction in northern Alaska, according to State Department of Transportation and Public Facilities official **Jonathan Widdis**.

The facilities will eliminate the need to transfer freight at sea to smaller coastal barges to bring it ashore. Today the cost of "lighterage" is about 25 percent of the freight cost from Seattle.

The port layout, prepared by the engineering firm Tippetts-Abbett-McCarthy-Stratton (TAMS), features a 3,600-foot rubble mound causeway leading to an offshore terminal. Short-term storage and marshaling areas will be available at the seaward end, with about 60 acres onshore for container and general cargo storage. Additional piers and service areas can be added as needed for offshore oil company activities year-round. The causeway can be extended another 1,000 to 1,500 feet to provide berths for bulk ore carriers.

With potential year-round use in mind, along with the need to keep maintenance and construction costs at a minimum, engineers have designed an ice-resistant causeway that also will withstand the strong erosive forces of Norton Sound's high winds and waves during late summer and autumn storms.

The causeway's design is based in part on studies conducted by the Institute of Hydraulics Research of the University of Iowa. A model of the causeway was placed in a 60-foot by 20-foot tank where sheets of ice were pushed up against it.

A major objective was to develop a way to prevent the ice from overriding the causeway. The tests showed that, despite the special sloping design created for the sides of the causeway, ice still moved over the model. As a result, TAMS project manager **Michael Horton** said the design philosophy is now one of management rather than prevention. "The causeway is designed to accommodate ice override as an occasional event," he said.

This will be done by building the sides at a slope. One side will be built higher than the other, so that ice override can be bulldozed off. "The cost savings of this system over an elaborate ice prevention scheme are substantial," Mr. Horton said.

To help prevent the causeway from eroding, large boulders will be placed on the slopes to act as breakwater barriers. Testing at the University of Florida will tell engineers more about the size of boulders needed to help stabilize the slopes, but Mr. Horton estimated rocks as large as 20 tons will be used.

The dock will be built with circular concrete caissons. Thirty of the large tub-shaped forms will be barged from the Lower 48 and sunk into place at the seaward end of the causeway to form the dock face. The circular caissons will stand up better than

the traditional box-shaped forms under the direct stress of the waves.

Another feature of the causeway design is the inclusion of a "fish breach": a small bridge near the shoreline to permit salmon and other species of fish to migrate freely.

Preliminary studies are complete and final design work was recently submitted to city officials by TAMS. If the legislature approves the requested \$38.5-million for construction, the port project could go to bid during late summer, 1983, according to Nome city manager **Ivan Widom**.

## Hoffert Manufacturing Awards Caribbean Cruise At SNAME Exposition



Robert Mende, secretary of SNAME (left), shown with Paul E. Hoffert, president of Hoffert Manufacturing Co.

Hoffert Manufacturing Co., Jacksonville, Fla., was an exhibitor at the recent First International Maritime Exposition held in New York and sponsored by The Society of Naval Architects and Marine Engineers. On Friday, November 19, Hoffert had a drawing for a four-day cruise for two onboard the S.S. Emerald Sea, of Eastern Cruise Lines, from Miami to the Caribbean. **Robert Mende**, Secretary of SNAME, made the drawing and the winner was **Joseph Wren III**, vice president, engineering and construction of Amoco Transportation Co.

Hoffert manufactures "Fire-Brite," a Fuel Oil/Water Emulsification System for burning emulsified fuel in both marine and industrial boilers. Hoffert states "Fire-Brite" is guaranteed to keep the combustion system clean, reduce the oxygen level and lower the number of times necessary to blow tubes.

Hoffert has perfected a marine system which has been proven onboard many vessels including those operated by Amoco, Texaco, Delta Lines, Eastern Cruise Lines, US Gypsum Co., and the Military Sealift Command, to name a few. The systems aboard these vessels have both saved fuel and increased efficiency.

The emulsion is consistently in the one to two micron range thereby giving the most efficient burn, and the company reports it has the only system matching the unique turndown ratios necessary on a marine system.

Hoffert further states the "Fire-Brite" System pays for itself in that the payback is three to four months based on fuel, soot blowing, and maintenance savings.

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## Bay Shipbuilding Retains William Thompson As Washington Representative



George Geiger (left) president of Bay Shipbuilding Corp., and Rear Adm. William Thompson (USN-ret.).

George Geiger, president of Bay Shipbuilding Corp., Sturgeon Bay, Wis. recently announced that Rear Adm. William Thompson (USN-ret.) has joined Bay Shipbuilding as the corporation's representative in Washington, D.C.

Admiral Thompson is a public relations consultant in the Washington, D.C., area and is the founder and president of Admiralty Communications, Inc.

Admiral Thompson's career was devoted to administering public affairs programs in the U.S. Navy at ascending levels of responsibility, culminating in the top positions for a Navy public affairs officer as special assistant for public affairs to the Secretary of Navy, deputy chief of information, and finally chief of information.

Admiral Thompson is president of the U.S. Navy Memorial Foundation as well as president of NUMA — the National Underwater and Marine Agency, a nonprofit corporation dedicated to preserving the country's maritime heritage through the worldwide search and recovery of sunken ships.

## Bulk Carrier Karnataka Undergoes Repairs, Modernization At HUD



The Karnataka being repaired at HUD.

The bulk carrier Karnataka, owned by Mogul Line of Bombay, India, recently received major steel renewals involving approximately 370 tons of fabricated steel in four main areas, and modernization at Hongkong United Dockyards (HUD).

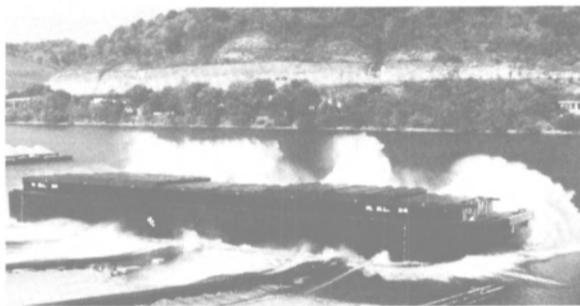
The structure in the upper wing tanks was almost totally renewed, including bottom plating, webs and bulkheads framing with a new steel of approximately 295 tons.

Renewals to the fore peak internals involved approximately 13 tons of new steel and repairs to side shell damage 23 tons. Double bottom renewals — floors, girders, webs — made up the rest of the 370 tons of new steel.

The Karnataka was also fitted with a new sewage treatment plant to bring her up to date with current legislation, and her oily water separation was modified by HUD to conform to the latest IMO regulations. One of the generators was stripped down and a new crankshaft fitted, reassembled, and tested.

The ship was docked for three days in Whampoa for painting. All upper wing tank internals were grit blasted and coal tar epoxy paint applied. The Karnataka completed special survey on all hull and machinery items and was at HUD for a total of 42 days, sailing one day ahead of the scheduled completion date.

## Dravo Launches Coastal Hopper Barge For C.G. Willis



The 195-foot hopper barge W.B.L. 114 being side launched at the Dravo Corporation's Neville Island shipyard.

The Dravo Corporation's Neville Island Shipyard, Pa., recently launched a 195-foot by 35-foot covered hopper barge, W.B.L. 114 — one of two delivered by Dravo to C.G. Willis, Inc., of Paulsboro, N.J.

Outfitted for both push and hawser towing, the barges are equipped with corrugated rolling covers and deck winches. Designed with a special 4½-foot coaming, the barges are operated along the East Coast by Willis Barge Line.

The barges' preparation for saltwater service included a Devoe coating of inorganic zinc-based primer paint prior to steel fabrication, plus the application of a Devoe Marine epoxy paint finish to the completed vessel. A brilliant international orange hue was applied to the barges' bow, rake, and coaming as a safety feature to improve their visibility in heavy traffic areas.

The barges were moved from Pittsburgh to New Orleans by Dravo Mechling, Dravo's barge line subsidiary. After traveling across Florida through Lake Okeechobee, the barges entered commercial service in Georgia, where they were loaded with cargo for delivery to points in the Northeast.

## Wilton-Fijenoord Yard Completes Major Repairs To 13,892-Dwt Ship



The repaired rudder is ready for hoisting at Wilton-Fijenoord shipyard, part of the Wilton-Rotterdam Dockyard Group, Netherlands.

The 13,892-dwt Argentine freighter Marbella recently entered drydock at the Wilton-Fijenoord shipyard in Schiedam, Netherlands, for routine painting and a change of propeller.

It was then discovered the ship also needed major, complicated repairs to, or replacement of, the rudder, tiller, and stern frame. Substantial repairs also were carried out to the steering engine, main engine, and auxiliary engines.

A number of miscellaneous repairs were also made to the hull and to winches, cargo gear, hatches, outboard valves, and an air compressor while the main work was being performed. By working around the clock and on weekends, the shipyard completed the work in three weeks.

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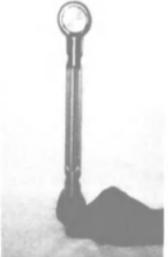
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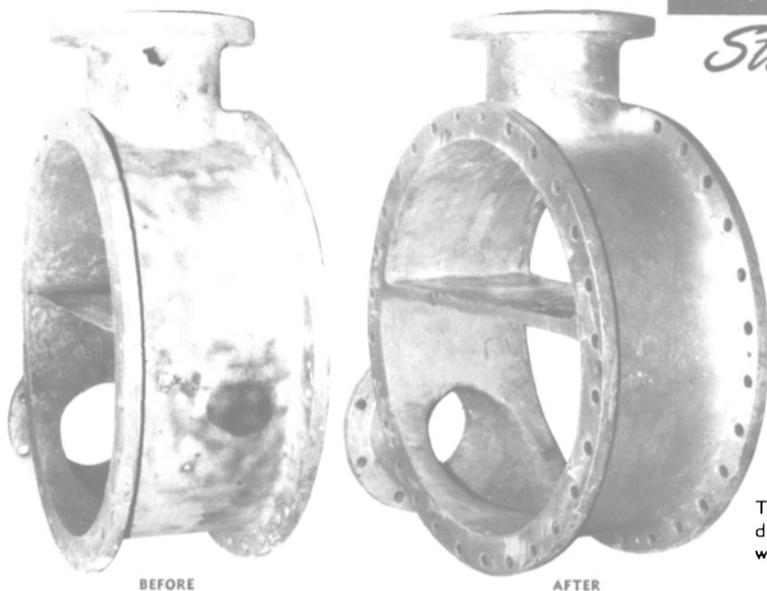
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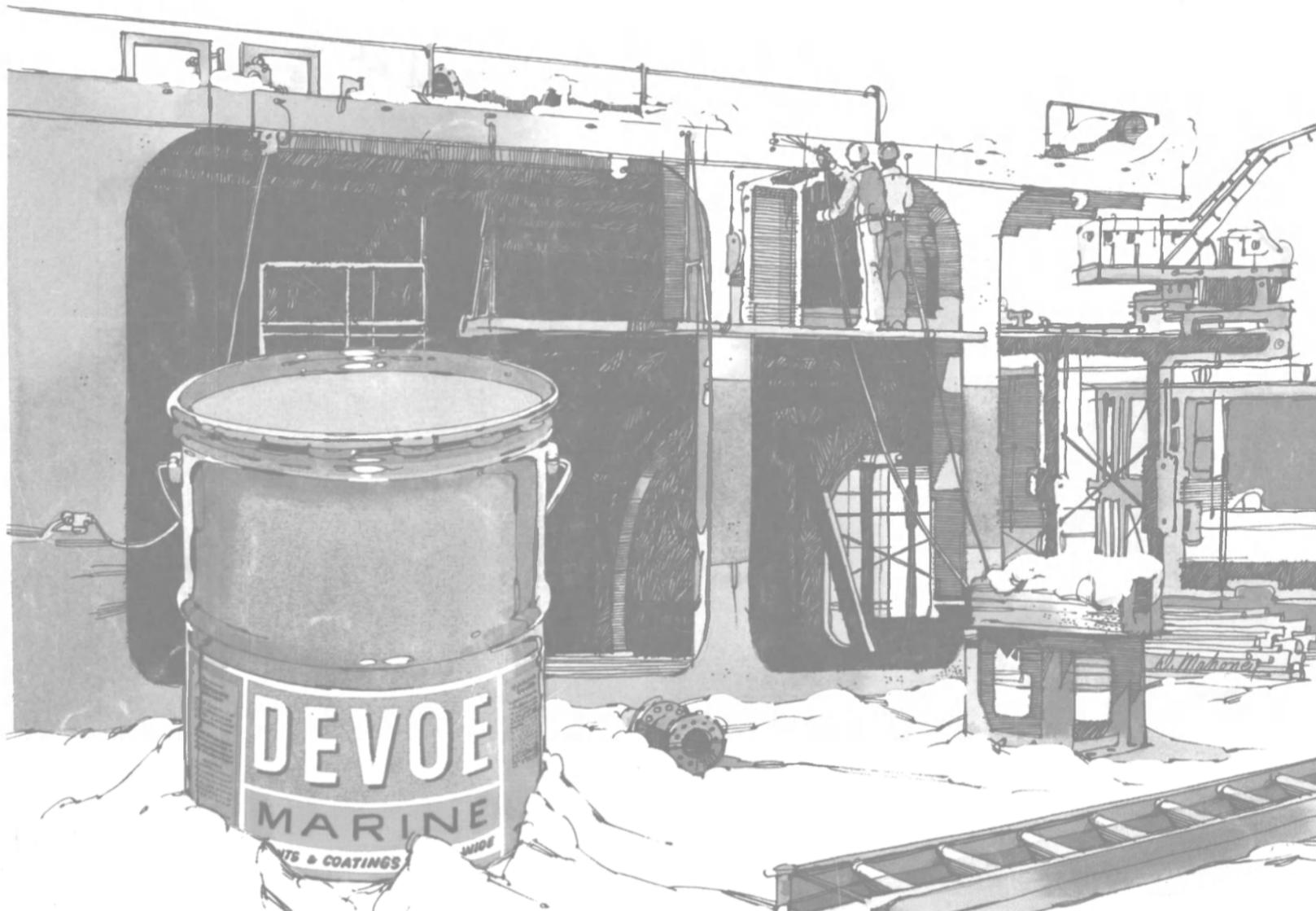
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