

**MARITIME  
REPORTER**  
AND  
ENGINEERING NEWS

**INLAND WATERWAYS  
SHOW ISSUE**

**International Inland  
Waterways Show  
- A Preview**

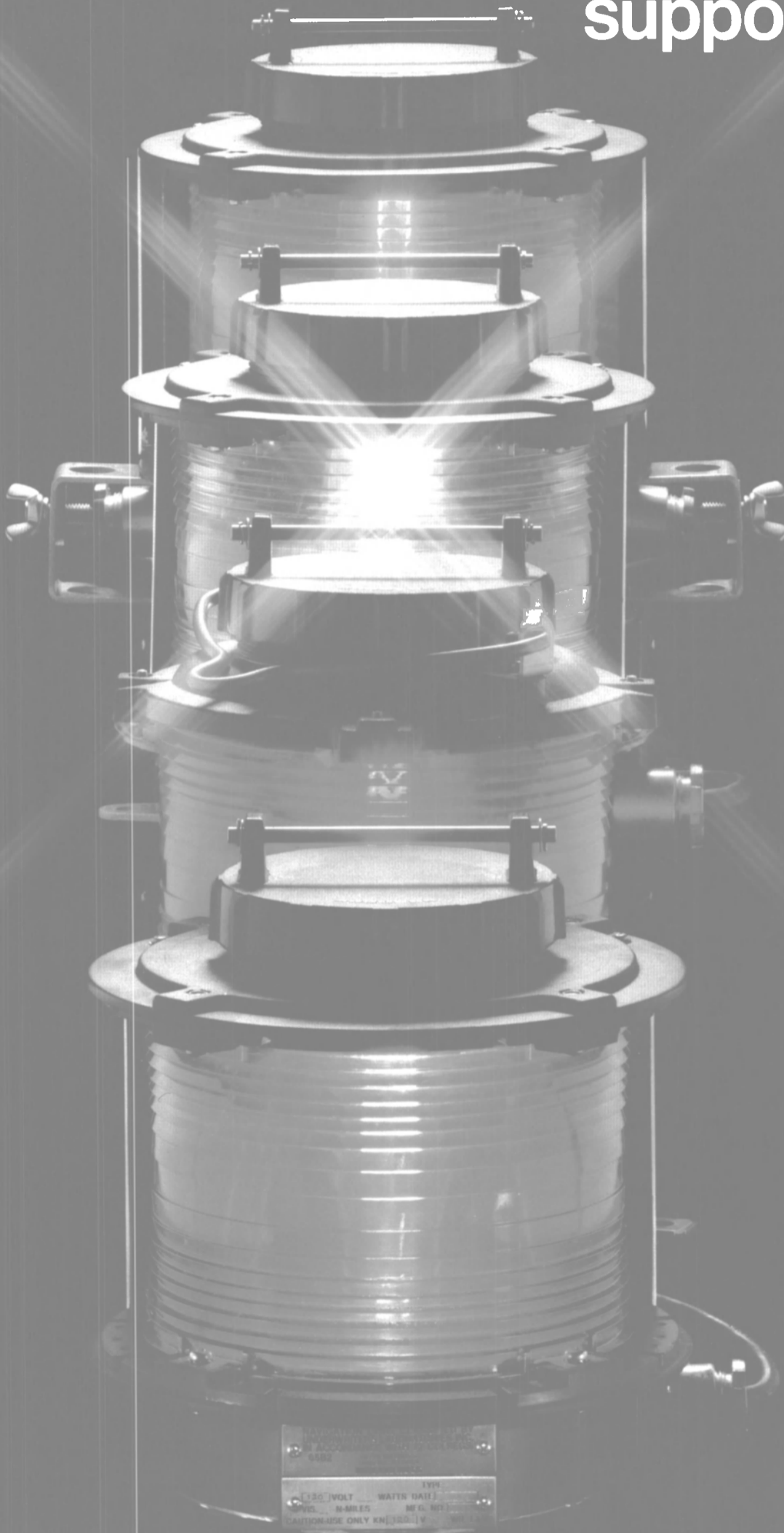
(SEE PAGE 4)

**Special  
AWO Legislative  
Report**

(SEE PAGE 4)

**AUGUST 1, 1984**

# The Long Life Lite™ from Russellstoll. Because we don't think lamps are supposed to break.



Maybe you expect navigation lamps to fail. After all, seaworthy vessels rock, shake and vibrate—and how much punishment can a lamp be expected to take? Chances are you just allow for the expense of breakage and a reduced safety factor while the lamps are out.

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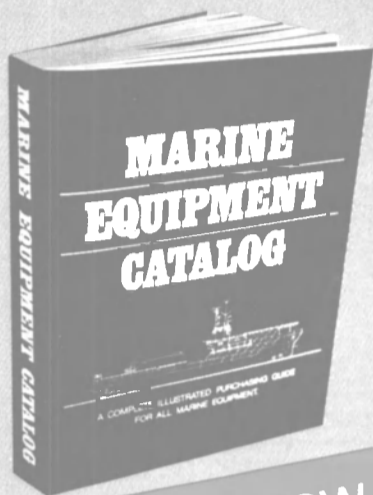
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## ON THE COVER

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Waterways Show  
— A Preview —**

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**AWO  
Legislative Report**

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### Saab Marine Opens New Service Station On U.S. West Coast

Saab Marine Electronics has started up a new service station on the U.S. West coast.

Service is taken care of by the affiliated company Saab Systems Inc. in Los Angeles. The company will independently handle repair and spare parts of the Saab SUM-21 Level Gauging System for tankers.

For further information and literature on Saab equipment,

Circle 61 on Reader Service Card

### American Dredging Asks For Title XI To Build \$16-Million Dredge

The Maritime Administration has received a Title XI application from American Dredging Co., Delaware Avenue and State Streets, P.O. Box 190, Camden, N.J., for a Title XI guarantee to aid in financing the construction of a 288-foot self-propelled hopper dredge.

The dredge would be powered by two z-drive Schottel propulsion units rated at 5,200 brake horsepower and would be operated in the coastal and inland waters of the United States by an American Dredging Co. subsidiary as yet unnamed.

No builder has been named but delivery is scheduled for the fall of 1985.

If approved, the Title XI guarantee would cover \$10,950,000 or about 75 percent of the vessel's estimated actual cost of \$16,050,000.

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Councilman **Norm Berge** (left) and chairman **John Culver** (right) congratulate Comdr. **Gary Voorheis**, Commanding Officer of the USS Conolly (DD 979), for a fine presentation on the capabilities of the Conolly at recent ASNE meeting.

At the invitation of Bath Iron Works (BIW), the members of the Northern New England Section of the American Society of Naval Engineers were recently treated to a tour of BIW Portland Repair Facility. This operation is the result of the combined efforts of the city, state and private industry working to create a new business in Portland, Maine. **Henry Stupinski**, the general manager of the BIW facility, provided a first hand look at the corporation's newly acquired floating drydock, the shops, and the administration offices that support repair work at this facility. The drydock is large enough to accommodate an Iowa Class battleship.

After the dinner that followed, Comdr. **Gary M. Voorheis**, the Commanding Officer of the USS Conolly (DD 979), gave an in depth presentation on the capabilities of the Conolly. The ship is the 17th of the Spruance Class Destroyers and is currently in overhaul at BIW-Portland.

The Conolly, outfitted with the most advanced underwater surveillance and fire control equipment, has a primary mission of Anti-Submarine Warfare (ASW).

**Dockmaster's Training Seminar  
To Be Held Dec. 11-14, 1984  
In San Diego, Calif.**

Due to the many requests received, Crandall Dry Dock Engineers, Inc. will once again conduct a Dockmasters Training Seminar on December 11-14, 1984, to be held in San Diego, Calif.

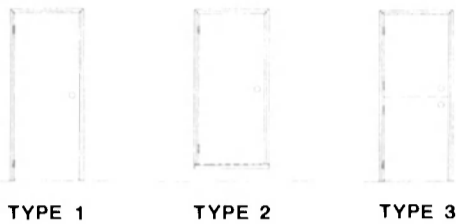
The 15th such seminar of its kind, it is intended to familiarize dockmasters and their colleagues with the many facets of drydocking vessels on all types of drydocking facilities, with special attention given to floating drydocks. **Paul S. Crandall**, president of Crandall Dry Dock Engineers, will conduct the sessions.

Included in the program will be a tour of National Steel and Shipbuilding Company's new 25,000-ton floating drydock NASSCO Builder, and also, tentatively scheduled, a tour of Southwest Marine's new 22,000-ton floating drydock Pride of San Diego. Added to this year's agenda will be a discussion of the U.S Navy's safety certification program for drydocking facilities (MIL-STD-1625B).

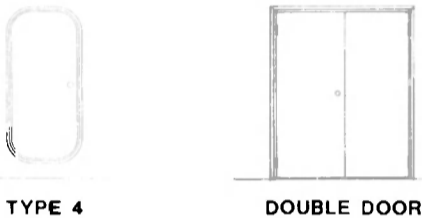
The seminar will be held at the Holiday Inn Embarcadero located on Harbor Drive in San Diego, and those interested should contact **Robert Heger** or **Robert Nelson** at Crandall Dry Dock Engineers, Inc., 21 Pottery Lane, Dedham, Mass. 02026, or phone (617) 329-3240 for more details.

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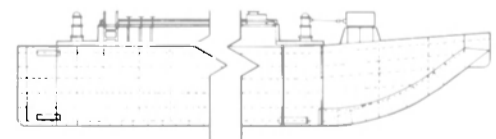
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## Lockheed Launches U.S. Navy Dock Landing Ship 'Germantown' Ahead Of Schedule

Lockheed Shipbuilding Company, Seattle, Wash. recently launched the U.S. Navy dock landing ship Germantown (LSD-42) five weeks ahead of schedule.

The 609-foot amphibious assault ship was christened by **Mrs. Barbara Kelley**, wife of Gen. **P.X. Kelley**, Commandant of the U.S. Marine Corps. The Germantown has an 84-foot beam, a draft of  $\pm 20$  feet and a displacement of approximately 11,100 light tons and 15,900 full load.

The ship, the second of three identical ships now under construction for the Navy at Lockheed's Seattle shipyard, was named for the historic area of Philadelphia, Pa. where General George Washington's troops engaged the British under the command of Sir William Howe in October 1777. Dock landing ships (LSD's) are traditionally named for historic sites.

The Germantown and all other ships of this class (the Whidbey Island class) are designed to transport combat-ready U.S. Marines and their equipment and supplies to designated trouble spots around the world. The ship is operated by the U.S. Navy, and will carry four air-cushion landing craft (LCAC's) which transport the Marines from the ship to the tactical assault points ashore. Lockheed Shipbuilding is building the dock landing ships only—not the LCAC's.

The Germantown, whose keel was laid August 5, 1982, is being built for the U.S. Navy under a \$304-million contract awarded to Lockheed in early 1982.

The Germantown will spend the next 15 months in Lockheed's outfitting facility in West Seattle undergoing outfitting, testing, fitting out, dock trials, builder's sea trials, Navy sea trials and delivery. Delivery to the Navy is scheduled for October 5, 1985. After commissioning, the USS Germantown is destined to become a part of the Amphibious Group-Eastern Pacific, homeported in San Diego, Calif.

The first ship of the class, the Whidbey Island (LSD-41), was launched by Lockheed on June 10, 1983. That ship is nearing the end of its outfitting and testing phase and is scheduled to be delivered to the Navy on November 30, 1984. It is expected that the Whidbey Island will be commissioned in Lockheed's West Seattle yard sometime in December 1984.

Lockheed also has a third LSD under construction—an identical ship to the Whidbey Island and Germantown. That ship, the LSD-43 is still unnamed. It is scheduled to be launched December 15, 1985.

The Germantown is the second U.S. Navy vessel to bear that name. The first was a wooden "sloop-of-war" built in 1846. She was scuttled in Norfolk, Va. at the



U.S. Navy Dock Landing Ship Germantown (LSD-42) splashes into Seattle's Duwamish River after being launched by Lockheed Shipbuilding Company's inclined shipway.

outbreak of the Civil War in 1861. The Confederate Navy salvaged her and she served until 1864 under the Confederate flag when the Germantown was scuttled again—this time by the Southerners, to prevent the Union forces from capturing her.

**Mrs. Kelley** was named the ship's sponsor by Secretary of

the Navy **John F. Lehman Jr.** The Secretary named her husband, General **Kelly**, Commandant of the U.S. Marine Corps, principal speaker at the launching ceremony.

The Germantown is the 147th ship built in the shipyard during its 95-year history.

### Nav-Com Introduces New Complete Shipboard Communications Package — Literature Available

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### Navy Awards GE \$15.7-Million Contract

General Electric Company, Knolls Atomic Power Laboratory, Schenectady, N.Y., is being awarded a \$15,739,000 cost-plus-fixed-fee contract for engineering services in support of the Japanese ship DDG-2312. This contract is in support of a Foreign Military Sale to Japan. The Naval Sea Systems Command, Washington, D.C. is the contracting activity.

### AWO Elects Creelman Chairman Of The Board

The board of directors of The American Waterways Operators, Inc. has elected **William A. Creelman** to serve as its chairman of the board. Mr. **Creelman**, who is president of National Marine Service Incorporated of St. Louis, Mo., will be completing the unexpired term of **Archie L. Wilson**, which began March 20, 1984. Mr. **Wilson** who is the president of Dixie Carriers, Inc. of Houston, Texas resigned as AWO chairman due to health reasons.

Immediately after his graduation from the U.S. Merchant Marine Academy in Kings Point, N.Y., Mr. **Creelman** served as a licensed deck officer aboard ocean-going vessels. Subsequently, he began his career with National Marine serving as a first class federal pilot aboard the company's coastal tankers. During the past 30 years, Mr. **Creelman** has served in various capacities at National Marine, including work in the areas of traffic, operations, insurance and administrative functions. In 1982, he was named president of National Marine, a principal transporter of bulk liquids on the inland waterway system.

Prior to his election as AWO Chairman, Mr. **Creelman** had been serving as vice chairman of the Coast Guard's Towing Safety Advisory Committee. Throughout his maritime career, he has served in leadership positions including membership on such panels as the Coast Guard's Chemical Transportation Advisory Committee, the Western Rivers Technical Committee of the American Bureau of Shipping and has been active in The Society of Naval Architects and Marine Engineers.

Working alongside Mr. **Creelman** for the remainder of his term, which expires next March, is AWO vice chairman of the board **James H. Sanborn**. A graduate of the U.S. Merchant Marine Academy, Mr. **Sanborn** is vice president-operations of Sonat Marine Inc., Philadelphia, Pa. He

holds an MBA from the University of Pennsylvania's Wharton School of Business.

### Union Flonetics Offers Literature On Foster CV Control Valves

Union Flonetics, Clinton, Pa., a division of The Union Corporation

has announced the availability of Foster CV Control Valves with integral "Isoforce" actuator. Developed for the U.S. Navy to be in accordance with MIL-V-18030D (Ships), the automatic control valves offer high capacity and rangeability for many applications. The "Isoforce" actuator combines the power of a piston with the smooth movement of a dia-

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Westfalia Oil Purifiers are also used for lube oil purification. This is especially important when diesel engines operate on heavy fuel oils.

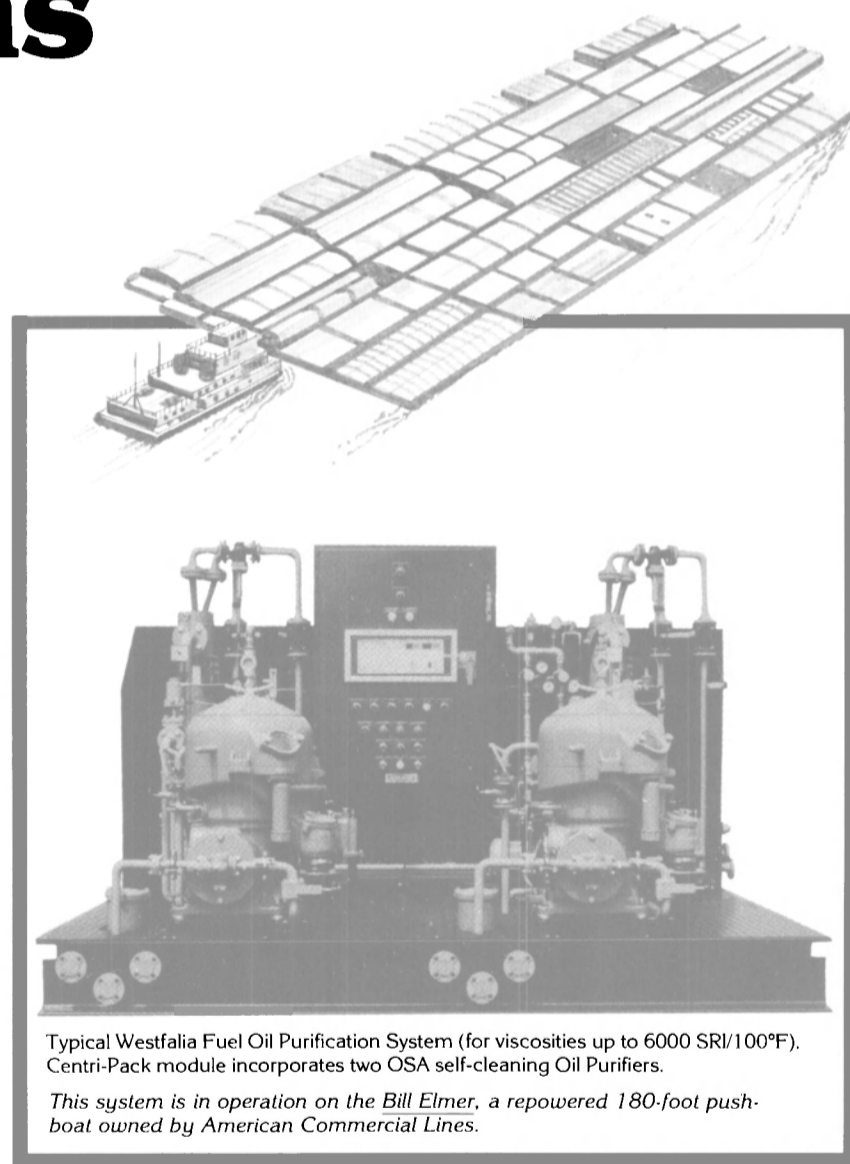
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This system is in operation on the *Bill Elmer*, a repowered 180-foot pushboat owned by American Commercial Lines.

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## Eastern Marine Delivers Passenger Launch P.C.C. Colibri To Panama Canal Commission

Eastern Marine, Inc. of Panama City, Fla., recently delivered the 64-foot aluminum passenger launch P.C.C. Colibri (shown above) to the Panama Canal Commission Agency of the U.S. Government. The vessel has a beam of 18 feet and a depth of 8 feet 6 inches.

Propulsion equipment on the P.C.C. Colibri consists of two GM12-V-71N main engines coupled to Twin Disc MG 514C reduction gears on a 2:1 ratio. Other equipment includes Morse Mod MK engine controls, 12V/70 Amp/Delco generator, Fernstrum keel coolers, Wagner steering system, Johnson Rubber "Dane" S/S Cut-

lass Bearings, two Michigan three-blade 32- by 30-inch propellers, and Gusher 25 bilge pumps.

Two seven-point alarm systems on the vessel are by Marine Electric Co., compasses are by Danforth, and searchlights, running and navigation lights are by Perko.

Among the special features on the P.C.C. Colibri are the windows supplied by Kearfott Marine Products, and doors by Eacco Inc. of New Orleans, La.

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The tugs Smit Rotterdam and Smit London towing the Concrete Island Drilling System.

## Two Smit Tak Tugs Tow Concrete Island Drilling System From Japan To Alaska's North Coast

Two 22,000-hp tugs, the Smit Rotterdam and Smit London of Smit Tak International Ocean Towing and Salvage Company (the Netherlands), recently towed a Concrete Island Drilling System (CIDS) from Nippon Kokan's Tsu Yard in Japan to the north coast of Alaska.

Global Marine Development Inc.'s new concept in Arctic drilling is a self-contained mobile drilling island that will be positioned on the floor of Alaska's Beaufort Sea. Its main dimensions are length 312 feet, breadth 294 feet, and

height 100 feet. The draft is 36 feet.

The CIDS consists of a steel mud mat, a concrete honeycomb midsection and two steel deck barges. It can operate in water depths of 28-55 feet and can resist 7-foot ice sheets with rubble.

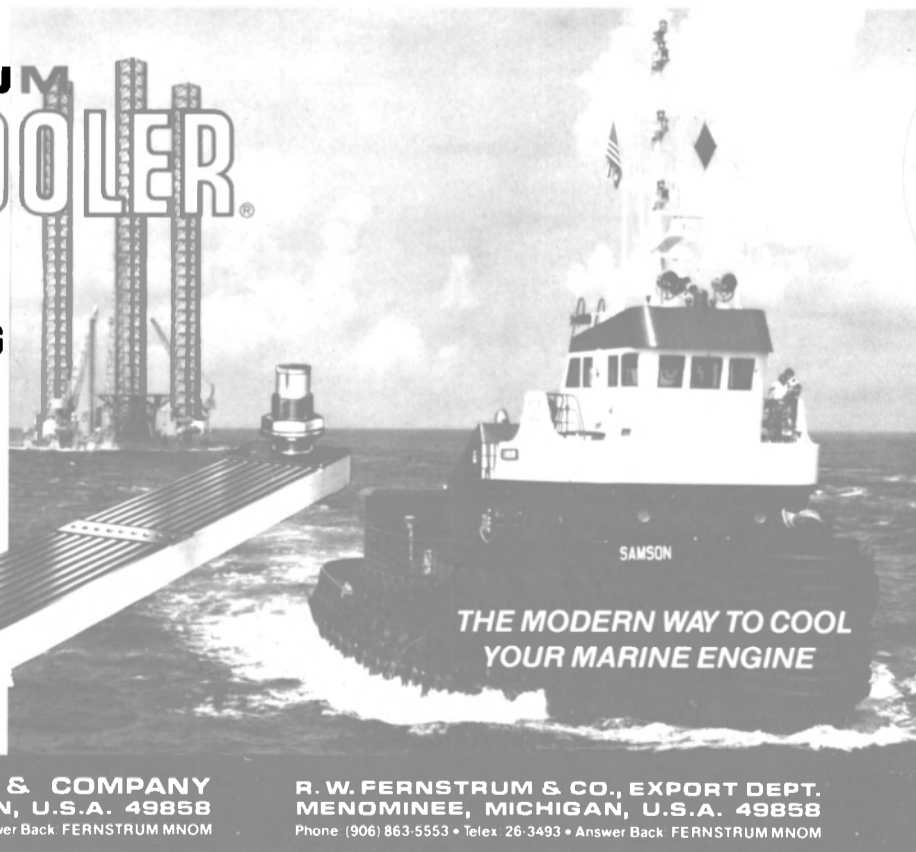
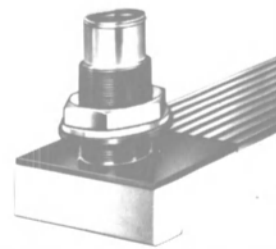
The 3,500 mile voyage through the Bering Sea was carried out nonstop. One of the tugs left the transport temporarily off the Aleutian Islands to top up her own bunkers and to transfer fuel to her sister tug. After that she continued towing.

Smit Tak was also recently contracted to tow the huge semisubmersible drilling rig Polar Pioneer from Hitachi's Ariake Yard, Japan, to the most northerly drilling location in the world, 72 degrees north latitude off Norway. This 12,500-mile-long towage, to be carried out by one of the company's 22,000-hp tugs, will take about 75 days.

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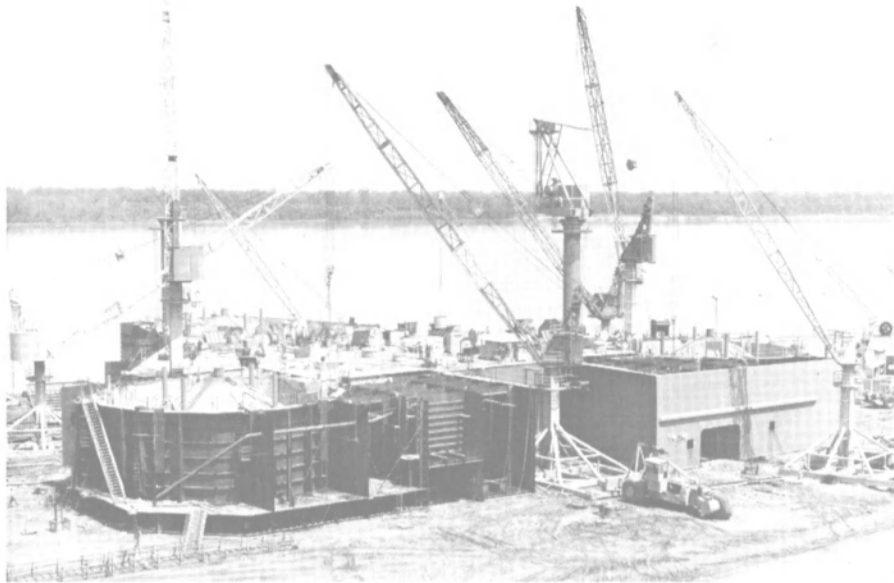
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## \$11.1-Million Chartering Contract Awarded Crowley Maritime

Crowley Maritime Corporation, San Francisco, Calif., is being awarded an \$11,100,000 contract for the four and one-half year chartering of the tug Sea Carrier I and barge 250-9. The tug and barge will deliver Department of Defense clean petroleum products worldwide. Barge 250-9 is a United States-flag vessel. Sea Carrier I is presently a Panamanian-flag tug, but will be reflagged United States prior to delivery. The Military Sealift Command, Washington, D.C., is the contracting activity.





**ANOTHER GORILLA RIG TAKES SHAPE**—The massive Rowan Gorilla III, the third large, hostile environment offshore jackup drilling rig from Marathon LeTourneau, takes shape on the banks of the Mississippi River at the company's rig construction yard south of Vicksburg, Miss. The big rig is being built for the Rowan Companies Inc., Houston, Texas and is scheduled for delivery near the end of this year. Gorilla jackup rigs are specifically intended to operate year-round in ice-free, remote offshore areas where environmental conditions and remoteness from resupply had previously ruled out efficient use of jackups. Gorilla rigs have massive storage capacity for consumables used during drilling and have a patented Slotilever design that allows them to continue drilling under environmental conditions and sea states that would shut down drilling with other jackups and semisubmersibles. The first Gorilla rig, the Rowan Gorilla I, is on location offshore Halifax, Nova Scotia. It has been there since early 1984 and has drilled efficiently throughout this past winter. Another Gorilla rig, also for Rowan, is under construction at Marathon LeTourneau's facility in the Republic of Singapore.

## New Members Elected To Norshipco Board



L.C. Ackerman

Charles H. Eure Jr.

O. Ray Yates Jr.

**L.C. Ackerman, Charles H. Eure Jr., and O. Ray Yates Jr.** have been elected to the board of directors at Norshipco, Norfolk, Va.

Mr. **Ackerman** became associated with the Walker Manufacturing Company, a manufacturer and marketer of automotive exhaust systems and filters, in 1952. In a span of 17 years, he served as product manager, marketing manager, vice president and general manager of the company's Canadian subsidiary, vice president of international operations, and president of the company.

During Mr. **Ackerman's** tenure as president (1966 through 1969), Walker was acquired by Tenneco Inc., which later named him chief

executive officer of its shipbuilding subsidiary, Newport News Shipbuilding and Dry Dock Company.

Later he was group vice president of the Questor Corporation and associate dean and assistant professor of business management at The College of William and Mary in Williamsburg. Currently he is a self-employed consultant in the fields of automotive equipment, marine supply, and shipbuilding and repair.

Mr. **Eure** began his career at Newport News Shipbuilding and Dry Dock Company in 1951 as an analytical chemist. He joined Norshipco in 1961 as a marine chemist, and later became the company's plant engineer, assistant

vice president, and vice president of plant facilities and operations. He is now Norshipco's executive vice president of operations and secretary of the corporation.

Mr. **Eure** is on the executive committee of the Propeller Club of America, is secretary of MAREP-CON Corporation, and is a member of the American Society of Naval Engineers, The Society of Naval Architects & Marine Engineers, the Shipbuilders Council of America, and the Marine Chemists Association.

Mr. **Yates** is vice president of sales at Kalium Chemicals in Atlanta. The company is a wholly owned subsidiary of PPG Industries, Inc., Pittsburgh.

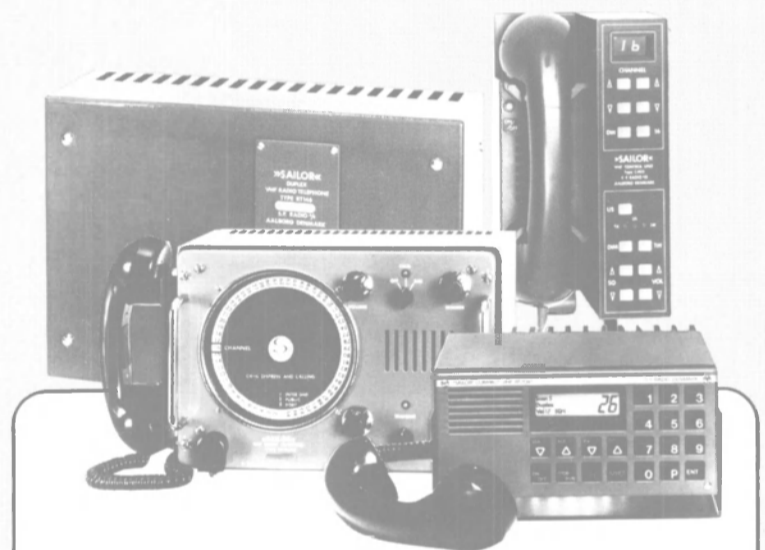
Prior to joining Kalium in 1972, Mr. **Yates** was senior vice president of marketing for The National Bank of Georgia. He has also been executive vice president of Spratlin Associates, Inc. of Atlanta; president of Engineered Steel Products, Inc. of Doraville, Ga.; and president of Duval Sales Corporation of Houston.

## Werner Knapp Named President Of American M.A.N. Corp.

**Werner Knapp** has been appointed president of American M.A.N. Corporation, which has its principal office in New York and branch offices in Houston and San Francisco. American M.A.N. Corporation is the U.S. representative of M.A.N., West Germany, and is responsible for all machinery and heavy engineering divisions, including M.A.N.-B&W Diesel.

Mr. **Knapp** has been with M.A.N. for a considerable period of time and has been employed in a number of functions in Germany as well as in the international organization of M.A.N.

Mr. **Knapp** succeeds **K. Peter Koch** who, after almost 20 years as president of American M.A.N. Corporation, has resigned. Mr. **Koch** will continue to be associated with American M.A.N. Corporation as a director of the company.



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## Booz, Allen Awarded \$7.7-Million Contract

Booz, Allen and Hamilton Incorporated, Bethesda, Md., is being awarded a \$7,779,222 cost-plus-fixed-fee contract for engineering and technical support for SSBN-726 class submarines. The Naval Sea Systems Command, Washington, D.C. is the contracting activity.



Refrigerated cargo ship Australian Reefer, first of four for J. Lauritzen A/S, in No. 1 Dock at Hyundai yard following recent launching. Delivery will be in November.

### AUSTRALIAN REEFER Major Suppliers

Main engine	Hyundai/B&W
Propeller	Kobe Steel
Auxiliary boiler	Aalborg
Economizer	Hyundai/E. Green
Air compressor	Suction Gas
ER console & monitoring	Hyundai/Terasaki
Diesel generator engine	B&W
Alternator	Taijo
Transformer	Hyundai
Reefer plants	Sabroe
Air-conditioning system	Flakt
Fresh water generator	Hyundai
Purifier	MKK
Steering gear	Svendborg
Deck machinery	Hyundai/Fukushima
Deck & stores cranes	Hyundai/Hydralift
Hatch covers	Kayaba/Navire/Hyundai
Fixed CO <sub>2</sub> system	John Kerr
Fire detection system	Salwico
Echosounder	Furuno
Radio direction finder	JRC
Gyrocompass & autopilot	Hokushin

hatch No. 1 will have four. This will give a total deck area of about 85,000 square feet, sufficient for about 6,100 standard pallets of 1,000 by 1,200 millimeter size.

There will be 19 separate compartments, each with its own cooling plant, divided into eight separate gastight sections to cater to any variety of mixed cargoes. Each section can independently maintain temperatures from +13 to -25 C. Ventilation is vertical, with two fan speeds providing 45 or 90 air changes per hour.

These vessels will carry all types of perishable cargoes, from fresh produce such as bananas, apples, oranges, potatoes, and other vegetables to frozen meat, poultry, and dairy products. The large deck area is also designed for the occasional transport of cargoes such as automobiles. Container capacity is 148 TEUs, 39 on the hatch covers and 109 on the weather deck.

Two recent deliveries from Hyundai's Ulsan shipyard were the 63,800-dwt Panamax bulk carriers Aurora and Archon, built for Apex Marine Corporation of Lake Success, N.Y., a company of the Berger Group. The vessels are basically sister ships, but the second delivery, the Archon, has four electro-hydraulic deck cranes, while the Aurora (photo) is without cargo-handling gear.

Hyundai signed a contract for a Panamax bulk carrier with the (continued on page 14)

### ARCHON/AURORA Major Suppliers

Main engine	Hyundai/B&W
Propeller	Kobe Steel
Air compressor	Suction Gas
Purifier	TKC/Westfalia
Auxiliary boiler	Hyundai/MHI
Diesel generator engines	Yanmar
Alternators	Hyundai/Siemens
ER control console	Hyundai/Terasaki
Main switchboard	Hyundai/Terasaki
Steering gear	KHI
Anchor	Hyundai
Anchor chain	Nippon Chain
Hatch covers	Hyundai/MFE
Deck cranes*	MHI
Halon system	Wormald
Fire-fighting appliances	Raftgo Hendry

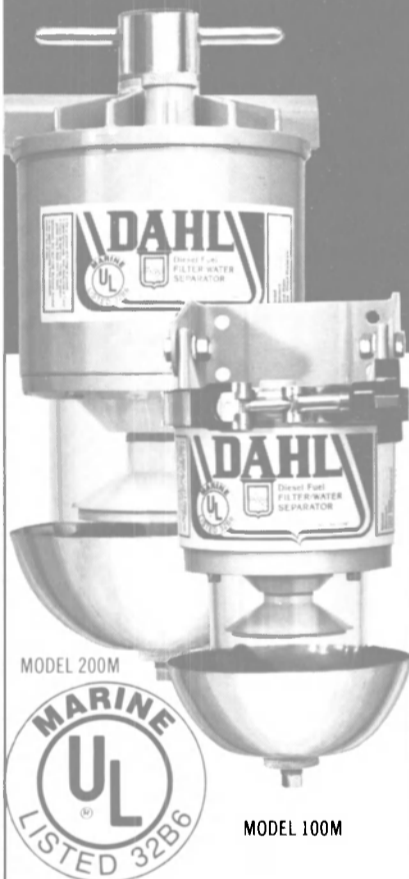
\*Archon only



Bulk carrier Aurora was first of two delivered recently by Hyundai to Apex Marine Corporation of Lake Success, N.Y., a company of the Berger Group.

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## First Of Four Lauritzen Reefers Launched At Hyundai's Ulsan Yard —Two Bulkers Delivered To Apex

The Australian Reefer, first of four 630,000-cubic-foot refrigerated cargo ships under construction for J. Lauritzen A/S of Copenhagen, was launched recently at the Ulsan Shipyard of Hyundai Heavy Industries Company, Ltd. in South Korea. These four vessels will be the largest and most modern reefers ever to be operated by the Danish company, which this year celebrates its 100th anniversary in the shipping business.

The contracts for this series of vessels were signed in April and June 1983, two in each month. They are all scheduled to be delivered by February 1985, with the first delivery to take place in November this year.

Established in 1884, J. Lauritzen has a fleet of more than 20 ships comprising 12 reefers (plus chartered tonnage) and other vessels including bulk carriers, drillships, and jackup rigs. Most of the company's business is in reefer transport, but it also deals in dry bulk cargoes and offshore drilling.

The Australian Reefer has an overall length of 474 feet, beam of 77.4 feet, depth to upper deck of 50.5 feet, and scantling draft of 32.8 feet. She will be powered by a slow-speed Hyundai/B&W 6L 60MCE diesel engine having a maximum continuous rating of 9,600 bhp at 107 rpm. At the normal continuous rating of 8,160 bhp at 100 rpm, she will have a service speed of 18 knots. Deadweight on scantling draft is 14,350 metric tons.

The 630,000 cubic feet of refrigerated space is contained within a BP length of only 443.5 feet, about 33 feet less than other large reefers of contemporary vintage. And, with six cargo decks rather than the usual four or five, the 50.5-foot depth is about 6.5 feet greater than most other reefers.

All cargo compartments will have a standard minimum deck height of 7.2 feet to meet the standard pallet height requirement as recommended by CIMO. Hatch Nos. 2, 3, and 4 will have five decks and

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## Hyundai

(continued from page 12)

American owner in February 1983. This was followed by another order for a similar vessel placed in June 1983. The keels were laid in October and December of the same year. It is noteworthy that the Archon was delivered to her owner

just one year after the contract was signed, and only six months after her keel was laid.

The Berger Group is headed by Capt. **Leo Berger**, president, and his partner, **Peter Conostas**, vice president. The Group is one of the largest privately owned independent owners/operators of U.S.-flag vessels. With the delivery of the two latest Panamax bulkers, the Berger fleet increased to 22 ves-

sels with an aggregate tonnage of almost two million dwt.

The Aurora and Archon have an overall length of 738.18 feet, beam of 105.64 feet, and depth of 59 feet. Each is powered by a Hyundai/B&W 4L90GBE diesel engine having maximum continuous rating of 12,300 bhp at 83 rpm. At the normal continuous output of 11,130 bhp at 74 rpm, service speed is 15 knots.

## First of Three Fast Sealift Ships Delivered

The U.S. Navy's Military Sealift Command recently took delivery of three Fast Sealift Ships (FSS), part of an eight-ship package comprising the Navy's Fast Sealift Ship program designed to increase the mobility and responsiveness of the Armed Forces. These vessels are conversions of the high-speed SL-7 containerhips that Sea-Land Service sold to the Navy in 1982 for a total of \$271 million for the eight ships.

The first ship, USNS Algol, was delivered by National Steel and Shipbuilding Company on June 22. The second, USNS Capella, (MR/EN 7/1/84 p. 50) was delivered by Pennsylvania Shipbuilding July 1. The third ship, USNS Antares, was delivered by Avondale Shipyards on July 12. The fourth ship, USNS Bellatrix is scheduled for delivery at the end of October this year. The final four SL-7s are now undergoing conversion and will be delivered in 1985 and early 1986.

The conversion of the SL-7s to FSS ships will give them RO/RO capability, side ports to facilitate rapid loading and unloading operations, medium- and heavy-lift cargo-handling equipment for self-sustaining capability that will enable the ships to handle cargo independent of a port facility, and an emergency helicopter landing area.

The Military Sealift Command has awarded a \$1.7-million, one-year firm contract with four one-year options to Sealift Terminals, Inc. of Jacksonville to provide berthing of the 946-foot-long Antares and Capella, while the other two FSS ships will be berthed at Violet Dock Port, Inc. near New Orleans under a \$1.9-million contract.

Sea-Land Service, Inc. has been awarded a \$19.7-million, three-year contract for the manning, operation, and maintenance of the first four FSS ships. At the two berthing ports, the ships will be maintained in a four-day, ready-for-sea status. Dock and sea trials will be held periodically. In addition, each ship will participate in military exercises as required.

Military Sealift Command's primary responsibility is to provide the necessary sealift to deploy and sustain military forces overseas, as rapidly and for as long as operational requirements dictate. The Fast Sealift Ships will greatly enhance that MSC capability. The Command also operates auxiliary ships that deliver supplies to Navy combatant ships while under way, oceanographic and survey vessels, missile trackers, a navigational support ship, a cable layer, tankers, and dry cargo ships that deliver Defense Department cargo worldwide.

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## ASMAR Of Chile In Joint Venture To Build \$13-Million Shipyard

ASMAR Shipbuilding & Docking Company, Chile's largest ship repairer and shipbuilder, is to build a new joint venture shipyard at a total cost of around \$13 million near Punta Arenas on the Strait of Magellan in southern Chile.

The project is a joint venture between ASMAR and the South African shipbuilder and repairer Sandock-Austral, and a new joint company—the Strait of Magellan Shipyard Limited—has been formed to build and operate the yard.

The yard will be built at Bahia Catalina just 4.5 kms from Punta Arenas where ASMAR already has an existing, complementary shipyard. ASMAR's two other yards are at Valparaiso and Talcahuano.

It will be equipped with a marine railway, designed by Crandall of Boston, Mass., which will be capable of lifting vessels up to 4,000 tons displacement.

The railway's dimensions will be 393.72 feet in length, 85.30 feet in width, with a depth of 19.68 feet, and it will be capable of docking the deepsea fishing fleet operating in the South Pacific and Antarctic, cargo and passenger vessels and most of the supply ships currently working on the offshore oil drilling program off the southern Chilean coast.

Construction of the yard will start later this year and is scheduled to become operational by the end of 1985. The total cost of around \$13 million is covered by funds from the two partners and a long term South African loan.

The new yard will complement ASMAR's existing yard at Punta Arenas which can lift vessels up to 1,000 tons on its slipway and is well equipped with steel, mechanical, electrical and electronic workshops.



**TWO FROM MOSS POINT**—The Nicor Guard, a 97-foot by 30-foot by 12-foot 3-inch triple-screw tugboat, and the Nicor Safety, an 82-foot 6-inch by 24-foot by 11-foot 3-inch twin-screw line launch vessel were recently delivered to Nicor Marine of New Orleans, La., by Moss Point Marine of Escatawpa, Miss. The vessels were loaded aboard the heavy lift ship Titan Scan for shipment to Nigeria.

### Richard Rice Joins Morgan Crane As Operations Manager

Richard Rice has been named operations manager for Morgan Crane Company of Santa Ana, Calif. He was formerly service manager at Nautilus Crane & Equipment Corporation of Reserve, La., and operations manager for Offshore Crane & Equipment of Jefferson, La.

Mr. Rice will oversee all marine and offshore installation and service work for Morgan, as well as assist in design and production on special projects.

Morgan Crane is master distributor for HIAB Sea Cranes, and marketing/service representative for Devault of California, manufacturer of marine cranes with capacities from two to 50 tons.

### 24 Page Brochure Describes Maintenance Free Marine Battery

Manufactured in West Germany and recently introduced to the U.S. market, Sonnenschein batteries are maintenance-free, sealed lead acid units that have such a low rate of self-discharge and such high performance on float that they are said to be ready for a sudden power demand when a power outage occurs even after up to 10 years on the job.

Sonnenschein batteries meet NATO Military Specifications. All models are now available from U.S. stocks.

For a free 24-page brochure containing full technical details on Sonnenschein batteries,

Circle 71 on Reader Service Card

### RCA Service Awarded \$3.8-Million Contract For Engineering Services

RCA Service Company, Springfield, Va., is being awarded a \$3,809,800 cost-plus-fixed-fee contract for engineering services in support of the Japanese ship DDG-2312. This contract is in support of a Foreign Military Sale to Japan. The Naval Sea Systems Command, Washington, D.C. is the contracting activity.

### Hydra Scrub, Inc. Renamed Underwater Ship Maintenance Specialist

Terry A. Forest recently announced the formation of his new firm, Underwater Ship Maintenance Specialist, Inc. located at 5027 River Road, Harahan, La. 70123; telephone (504) 734-1045.

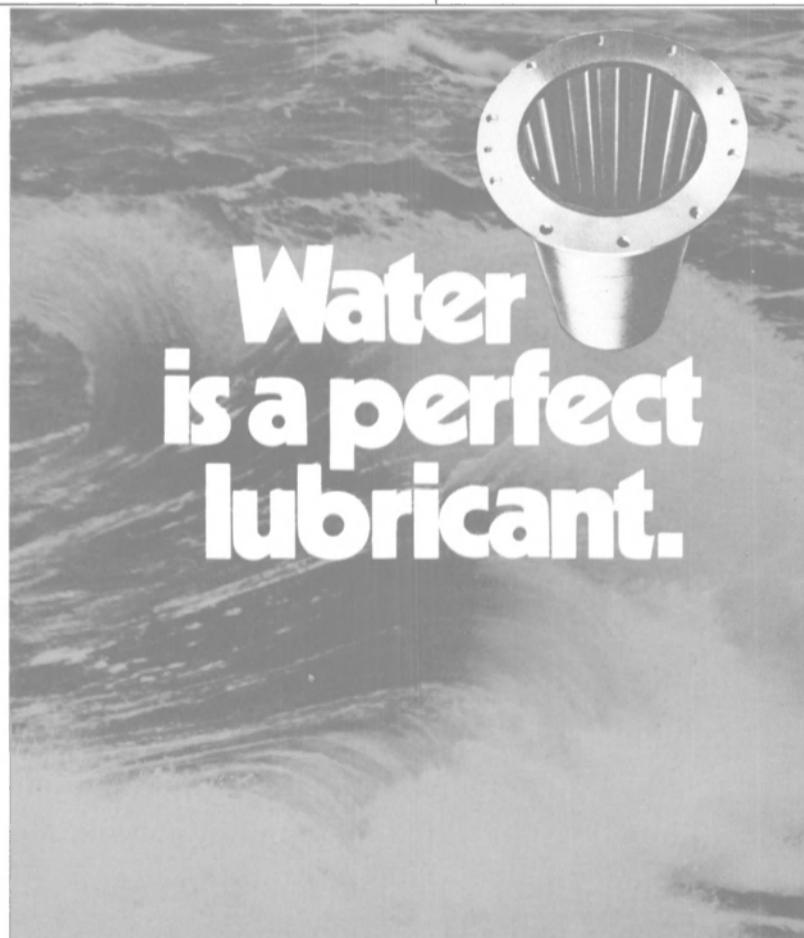
Formerly Hydra Scrub, Inc., USMS offers complete hull welding and repair services, ABS inspections, and Lloyd's Registry of Ship Surveys in addition to its professional hull cleaning services.

Mr. Forest stated that "our name change reflects our corporate growth and expansion from a

specialization in hull cleaning to one that is far more diversified. Our objective is to offer the widest possible range of professional services within our field."

### \$7.7-Million Contract To Engineered Air Systems

Engineered Air Systems Incorporated, St. Louis, Mo., is being awarded a \$7,764,103 firm-fixed-price contract plus an option to furnish 273 air conditioning units, integrated logistics support and related data. The Naval Regional Contracting Center, Philadelphia is the contracting activity.



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The dredge Jadwin undergoing repairs at Mississippi Marine shipyard.

## Mississippi Marine Proves Its Strength On Mammoth Repair Job

Mississippi Marine, a Greenville based shipyard and repair facility, demonstrated its lift strength, length capabilities and drydocking expertise recently for the U.S. Army Corps of Engineers. The job was to drydock and repair the 279-foot-long dredge Jadwin.

This was no small task as the entire hull of the Jadwin had to be lifted out of the water according to ABS and USCG regulations. Mississippi Marine lifted the Jadwin easily by using its 2,500-ton 218-foot-long drydock.

Once out of the water numerous

repairs were performed consisting of removing and reinstalling rudders and propellers; welding and gouging cracks in tunnels and replacing tunnel plate; cleaning and painting the sea chest; boring the two struts; re-cladding shafts; replacing port and starboard strut bearings and additional welding, sandblasting and painting as required.

Despite extensive repairs the work was completed well within the time frame set by the U.S. Army Corps of Engineers.

## Hynes Named Executive VP of SCNO Barge Lines



John F. Hynes

The appointment of **John F. Hynes** to executive vice president of SCNO Barge Lines, Inc., St. Louis, Mo., was announced by **Fred S. Sherman**, president of the company.

"The depth and strength of the senior management of SCNO has been improved by the appointment of **Jack Hynes** to the position of executive vice president", **Fred Sherman** said in making the announcement.

Mr. Hynes' 10 year tenure with SCNO has been in the capacity of vice president with successive responsibility for the corporate administration, fleet operations, and most recently as vice president, marketing.

## Flexaust Announces A Major Improvement In Its Product Line

The Flexaust Company, the industry leader in ventilation ducting, announces a major improvement in its product line. Most hoses are now flame retardant and are recognized as having an Underwriter's Laboratories 94 V-O flammability classification.

By using a variety of constructions and materials, Flexaust can offer a permanently flame retardant product designed for use on either temporary service or on board installations involving both positive or negative pressures.

Its unique two ply, triple overlap construction allows unlimited product utilization for moving hot or cold air, removing grit dust, welding fumes or paint vapors. Other products made of a single ply, single overlap construction can be used in positive pressure applications involving dehumidification or paint drying.

Flexaust has over 400 stocking distributors throughout the U.S. and Canada. Prompt shipments can be made from any of its five manufacturing locations nationwide.

For more information,

Circle 75 on Reader Service Card

## American Hoist Appoints William Hobbs President, American Crane Division



William B.R. Hobbs

**Robert Nassau**, Amhoist's president and chief executive officer recently announced the appointment of **William B.R. Hobbs** as president of American Hoist's American Crane Division, reporting to Mr. Nassau. Mr. Hobbs joined Amhoist in May of 1983 from FMC-Link Belt's Construction Equipment Group, where he had senior managerial responsibilities in both marketing and product development.

In his new position, Mr. Hobbs will have responsibility for the design, manufacture, sale and service of American standard crane products and the specially designed Marine and Energy products.

## Service Engineering Gets \$10.7-Million Contract To Overhaul USNS Spica

Service Engineering Company, San Francisco, Calif., is being awarded a \$10,723,447 firm-fixed-price contract for the overhaul and upgrade of the Military Sealift Command combat stores ship USNS Spica. The Military Sealift Command, Washington, D.C., is the contracting activity.

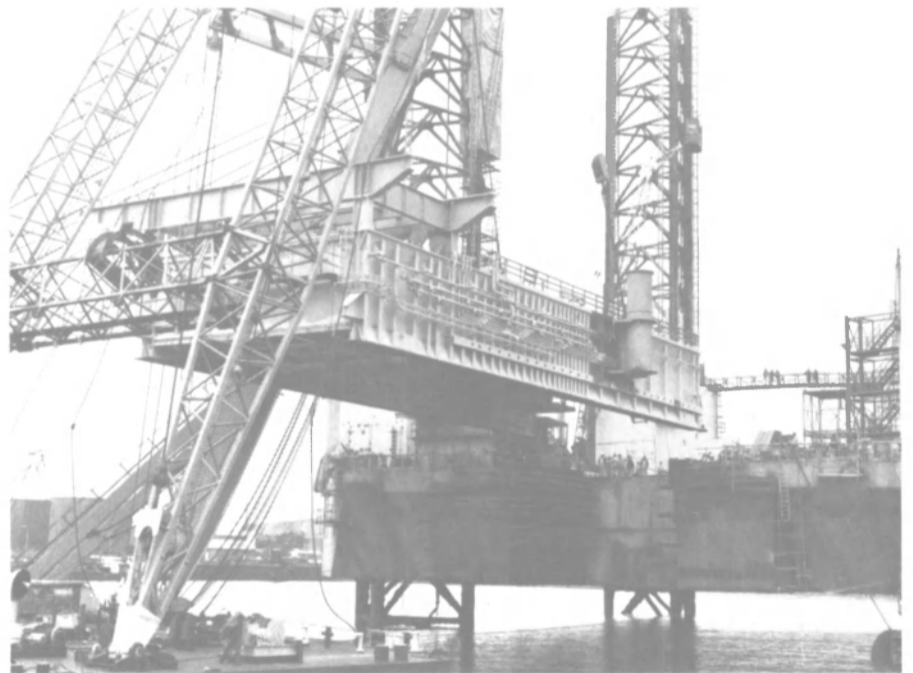
## Bird-Johnson Contract To SKF Coupling Division

SKF Steel, Coupling Division, through its U.S. sales office in Avon, Conn., announced the receipt of a contract from Bird-Johnson Company, Walpole, Mass. The Division will supply couplings for the propulsion systems of the U.S. Navy's MCM vessels.

"The couplings will be specially manufactured of stainless steel, with a very low magnetic permeability, to meet the Navy's stringent specifications," according to **G. Robin King**, U.S. sales manager of the coupling division.

For further information on the SKF OKF coupling,

Circle 63 on Reader Service Card



Placing the cantilever on the rig Britannia.

## Verolme Botlek Awarded Contract For Rig Modification

Following the successful modification of the jack-up drilling rig Britannia from a slot-type drilling unit to a cantilevered unit, completed recently within the contractual time, the Rotterdam Shipyard has contracted another rig modification job.

The Houston-based rigowners Reading and Bates awarded Ver-

olme Botlek a contract for the fabrication and installation of a new heli-deck on the jack-up rig Ron Tappmeyer. Prefabrication started immediately after the contract was signed. The rig arrived at the shipyard the end of June for the actual modification and will be redelivered to the owners early in July 1985.





The Riveranda is the second Blount-built dinner boat to operate in New York Harbor.

## Blount Delivers 425-Passenger Dinner Cruise Vessel 'Riveranda'

Blount Marine Corporation of Warren, R.I. has announced the recent delivery to New York City of the 145-foot, U.S. Coast Guard-approved, 425-passenger dinner cruise vessel, Riveranda.

The vessel was designed and constructed for World Yacht Enterprises, Ltd., of New York, and is a close sistership to the Spirit of Philadelphia, delivered earlier this year.

Passenger capacity has been limited to 425 to provide an atmosphere of spacious luxury. The Riveranda will seat a total of 350 in two carpeted air-conditioned dining rooms and will accommodate dinner parties on both main decks plus an open air third deck in good weather. This deck has a raised platform deck for additional dining, dancing, and sightseeing. Both enclosed decks feature a complete bar with third deck facilities for a portable bar. All equipment was designed and installed to enhance the interior and exterior appearance as well as lower the sound level throughout the boat.

While the primary purpose of the vessel is deluxe dinner cruises, the Riveranda will serve wedding receptions, social functions, and as

a conveyance for corporate gatherings.

Main propulsion is provided by two General Motors 8V-92 diesel engines, and ship's power is provided by two 125-kw generators. Steering is Wagner Hydraulic with an optional job lever control. A Morse heavy-duty single-lever twin-control head system is used for engine rpm and gearing. The large galley is equipped for complete preparation of meals comparable to the finest of restaurants.

Other pilothouse equipment includes a Furuno radar, Polaris Regency VHF radio, Wagner rudder angle indicator, Ritchie 5-inch compass, automatic fog horn timer, air windshield wiper and an inter-ship talk back system. A complete main deck-controlled stereo and public address system with optional individual deck control is also installed.

The arrival in New York of the Riveranda will be the second Blount built dinner boat operating in New York Harbor. The first vessel of the long line of Blount-designed cabaret style restaurant vessels has been operating in the harbor for many years.

## A New Fireboat For Seattle

Seattle's new fireboat, designed by Nickum & Spaulding Associates, is being built by Nicholas Brothers Boat Builders of Freeland, Wash., and will carry an ABS classification when completed in mid-1984.

The 96-foot by 23-foot by 7-foot aluminum hull and superstructure is capable of 28 knots powered by three GM 16V92 TI engines through twin-disc Omega MG530M, 3:13 to 1 gears with 42-inch-diameter by 55-inch pitch

propellers. The three 2,500-gpm fire pumps are driven off the front P.T.O. of each main. There are three manual controlled monitors: two 4-inch, one 6-inch and one 8-inch which telescopes 45 feet above the waterline. Also included in the sea water fire-fighting system are two forward 4 inch underwharf monitors as well as a stern thruster P/S and a Furuno radar. The boat also contains 300 gallons of foam for fire-fighting.

It is equipped for rescue with a small boat stored in a ramp built into the stern and an emergency medical room with a setup equal to on-shore aid care units.

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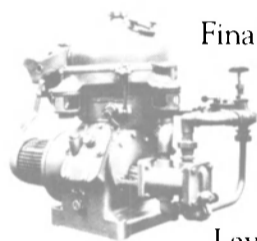
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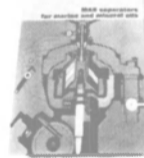
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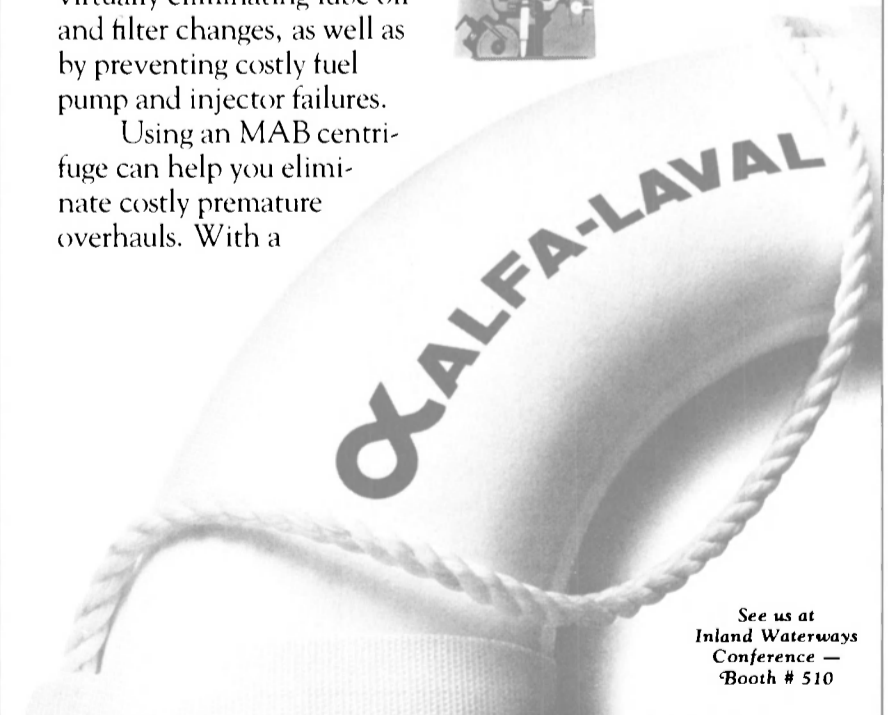
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### Fagerstrom New President Of Alfa-Laval, Inc. (U.S.)

Bjorn Fagerstrom has been appointed president of Alfa-Laval, Inc., Ft. Lee, N.J., the U.S. member of the Swedish-based Alfa-Laval Group of worldwide companies.

Mr. Fagerstrom succeeds Ragnar Beyer who, under Alfa-Laval's policy of rotating the assignments of its principal managers, is returning to Sweden for other duties as corporate executive vice president.

The new president of Alfa-Laval in the U.S. had recently served as managing director of Alfa-Laval, Ltd. headquartered in Brentford, England.

A native of Sweden, where he earned a master's degree in political science at Lund University and an M.B.A. at the University of Gothenburg, Mr. Fagerstrom joined Alfa-Laval in 1963 and has served in various capacities including director of corporate planning and development and later as head of Alfa-Laval operations, first in France and then in Austria.

Mr. Beyer had been head of U.S. operations the last three years. He will be resuming his previous position as deputy managing director in charge of Alfa-Laval's "Other Companies" Group.

Headquartered in Sweden, the Alfa-Laval Group comprises some 140 companies with group sales amounting to \$1.5 billion. Founded in 1883, Alfa-Laval, Inc., the U.S. company, accounts for more than \$160 million in sales.

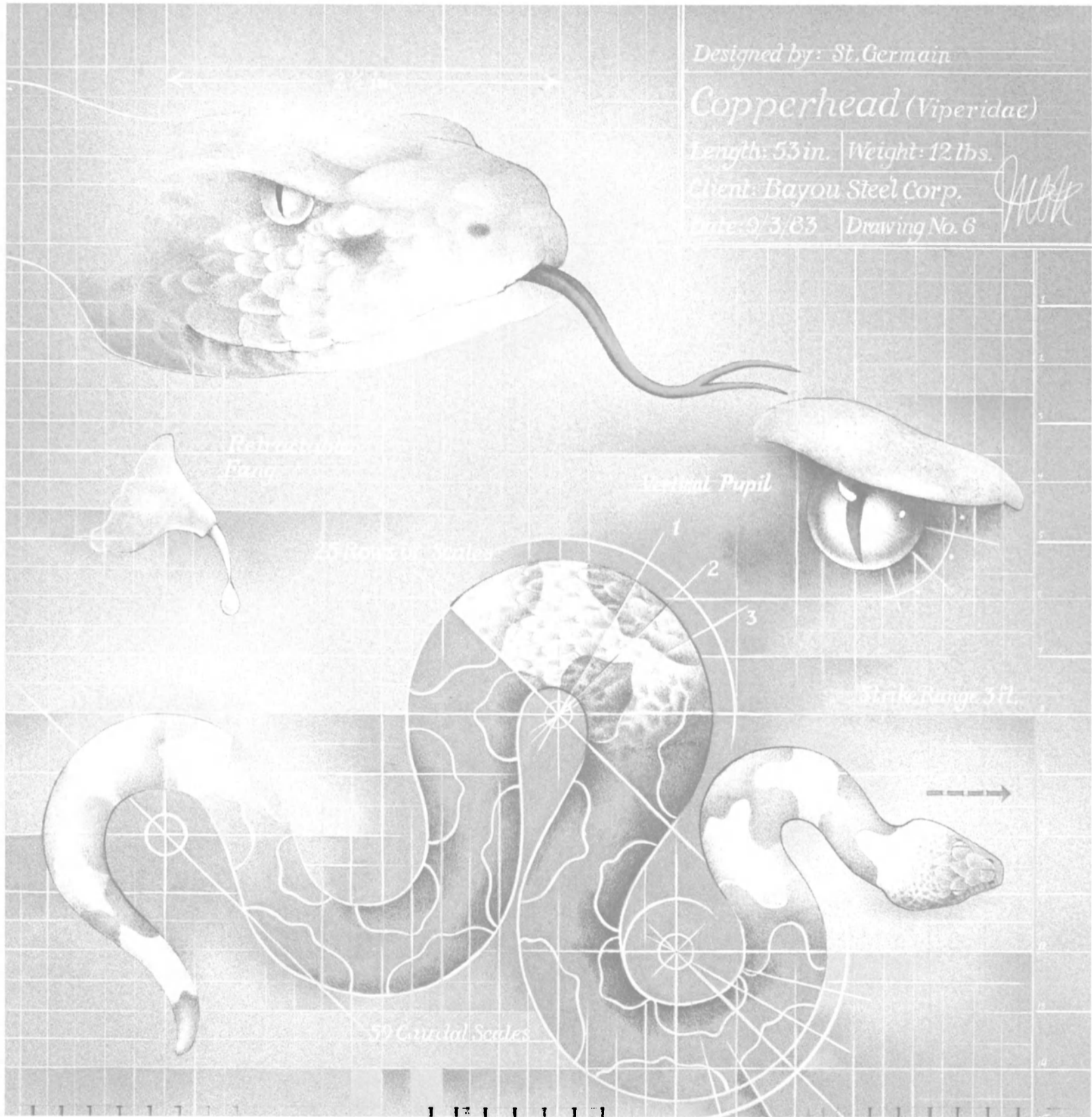
### Orange Shipbuilding Signs Contract For Push Boat

Orange Shipbuilding Co., Inc., Orange, Texas, recently signed a contract with the Tennessee Valley Authority of Chattanooga, Tenn. for a 52½ foot by 22 foot by 8 foot push boat. The vessel is to be named Patricia H and will be used to handle 1,500 ton barges on the Green River at the Paradise Steam Plant, Drakesboro, Ky.

The vessel has two Cummins KTA1150M engines; two Twin Disc MG518 gears; two Cummins 4B3.9 40 kw generators; two 5 inch Aquamet shafts; four 6 inch Aquamet flanking rudders; two 6 inch Aquamet main rudders; a Nabrico 20 ton H.E. conn. winch and Fernstrum engine coolers.

Also included are a fully outfitted galley on the main deck and quarters for two on the Texas deck. Visibility from the pilot house of 360° and a 23 foot eye level enhance this vessels appeal. Below the waterline are custom design four blade propellers and double plated main and flanking rudders that will give this vessel high maneuverability and excellent bollard pull.

Maritime Reporter/Engineering News



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## AWO — A Legislative Report

### The Barge And Towing Industry — A Legislative Review —

Dena L. Wilson, Director — Legislative Affairs



Dena Wilson

Congress left Washington, D.C. for the first part of its summer recess after passing omnibus water resources legislation, H.R. 3678, on June 29, by a vote of 259-33. House passage of this legislation, which contains new comprehensive policy reforms, has been a major priority of The American Waterways Operators, Inc. in the 98th Congress.

Following almost two years of intensive hearings and individual meetings, Rep. **Robert A. Roe** (D-NJ), House Water Resources Subcommittee chairman, introduced H.R. 3678 in July 1983. This bill was then approved unanimously

by the House Public Works and Transportation Committee in Aug. 1983.

Four other House committees—Merchant Marine and Fisheries, Agriculture, Interior and Insular Affairs, and Judiciary—also acted on various portions of the measure.

Under H.R. 3678, the federal government, through the establishment of a Port Infrastructure Trust Fund, would be responsible for construction and operation and maintenance (O&M) of ports with channel depths between 14-45 feet ("general cargo ports"). For ports deeper than 45 feet, ("deep-draft ports"), non-federal interests would be required to pay 50 percent of construction costs, as well as 50 percent of incremental O&M costs. Ports wishing to impose user fees to recover their non-federal share would be permitted to impose such fees only on vessels requiring a

channel greater than 45 feet. This latter provision is extremely important to AWO members operating shallow-draft vessels, with no need for deeper channels.

Also important to AWO is the bill's establishment of new cost sharing formulas of seven priority lock and dam projects: a second lock at Lock and Dam 26, Upper Mississippi River; replacement of Gallipolis Locks, Ohio River; Bonneville Lock, Columbia River; Oliver Lock, Black Warrior River; Locks 7 and 8, Monongahela River; and Winfield Lock, Kanawha River, all authorized in H.R. 3678. Under this provision, one-third of the cost of construction for these seven projects would be financed from the Inland Waterways Trust Fund. No increase in the currently-mandated schedule of waterway user taxes

(continued on page 22)



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# AWO

(continued from page 20)

would be necessary under this formula (NOTE: under P.L. 95-502 the inland waterways industry pays a fuel user tax of 8¢ a gallon; this tax will automatically increase to 10¢ a gallon on Oct. 1, 1985).

In Sept. 1983, the AWO Board of Directors voted to support H.R. 3678, as approved by the Public Works and Transportation Committee, and to oppose any attempts to impose new or additional user fees for shallow-draft waterway operators, inland and coastal.

To assist in educating Congress and the public about the need to enact comprehensive water resources legislation, specifically H.R. 3678, AWO formed a broadbased group of Washington corporate and association representatives. This group continues to assist both in lobbying and public affairs efforts.

General debate on the House floor was held June 18, with final action, June 28-29. At the last minute, the Administration got into the picture, through the Office of Management and Budget (OMB), sending up four pages of amendments to the bill. These amendments were designed to bring H.R. 3678 in line with the Senate bill, S. 1739. No member of the House, not even a conservative Republican, would offer these amendments of behalf of the Administration.

Subsequently, OMB Director **David A. Stockman** issued a letter expressing Administration support of an amendment to be offered by Rep. **Thomas A. Petri** (R-WI). The Petri amendment required local interests to provide "upfront" financing for port development and other types of projects authorized in the bill, with the exception of inland waterway projects. For these latter projects, the Petri amendment—vigorously opposed by AWO—called for an annual federal cap on inland waterway expenditures beginning at \$586 million, declining each year by \$35 million until the cap reached \$201 million. Also supporting the Petri amendment were the League of Women Voters, National Wildlife Federation, National Taxpayers Union, United Transportation Union, National Audubon Society, Americans for Democratic Action, Friends of the Earth, Wilderness Society, Environmental Policy Institute, Sierra Club, Competitive Enterprise Institute, Grace Commission, American Rivers Conservation Council, Railway Labor Executives Association and the Association of American Railroads.

AWO mounted a major lobbying effort to defeat the Petri amendment, which was voted down by a vote of 213-85.

Rep. **Ron Wyden** (D-OR) circulated a "Dear Colleague" later opposing the Petri amendment as did Rep. **Nick Joe Rahall** (D-WV) to members of the Congressional Coal Group.

The House Public Works Committee leadership—Reps. **James J. Howard** (D-NJ), committee chairman; **Gene Snyder** (R-KY), ranking Republican; **Robert A.**

**Roe** (D-NJ), Water Resources Subcommittee chairman; and **Arlan Stangeland** (R-MN), ranking minority member of that Subcommittee—also circulated a letter to each member of the House urging opposition to a number of amendments, including the Petri proposal.

While a major hurdle has been overcome with the passage of H.R. 3678, the Senate version, S. 1739,

has languished. This bill, introduced by Sen. **James Abdnor** (R-SD), chairman of the Senate Water Resources Subcommittee, was introduced in Aug. 1983. It contained a number of new concepts never before addressed, but was subsequently approved and reported by the committee in Nov. 1983, without benefit of hearings on these new concepts.

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As introduced, S. 1739 would impose an annual federal obligation cap of \$500 million on all inland waterway expenditures. (This cap was increased to \$646 million, as reported by the Committee.) It would establish an Inland Waterway Users Board to advise the Secretary of the Army on expenditure levels so that the inland waterway system would be ade-

quate to meet the needs of commercial navigation. Any funding needs in excess of the annual federal cap would be generated from new inland waterway user fees—the type and amount of which would be determined solely by the Secretary of the Army. In addition, this title authorized five of the above-referenced lock and dam projects (Oliver and Winfield locks

were not included), as well as a number of inland harbor projects.

The port title of S. 1739 was unacceptable to the barge and towing industry as well because it would have allowed ports to impose deep-draft user fees on indirect beneficiaries.

AWO's Board, also in Sept. 1983, voted to oppose S. 1739 while directing the staff to work with Sen.

**Abdnor** and his aides to attempt to improve S. 1739. AWO, working with other waterway and shipper groups, met with limited success early on, but was able to persuade Sen. **Abdnor** and full Environment and Public Works Committee Chairman **Robert T. Stafford** (R-VT) to hold hearings on Titles V and X (inland waterways and ports, respectively), albeit in Jan. 1984, after the bill was already reported by that committee.

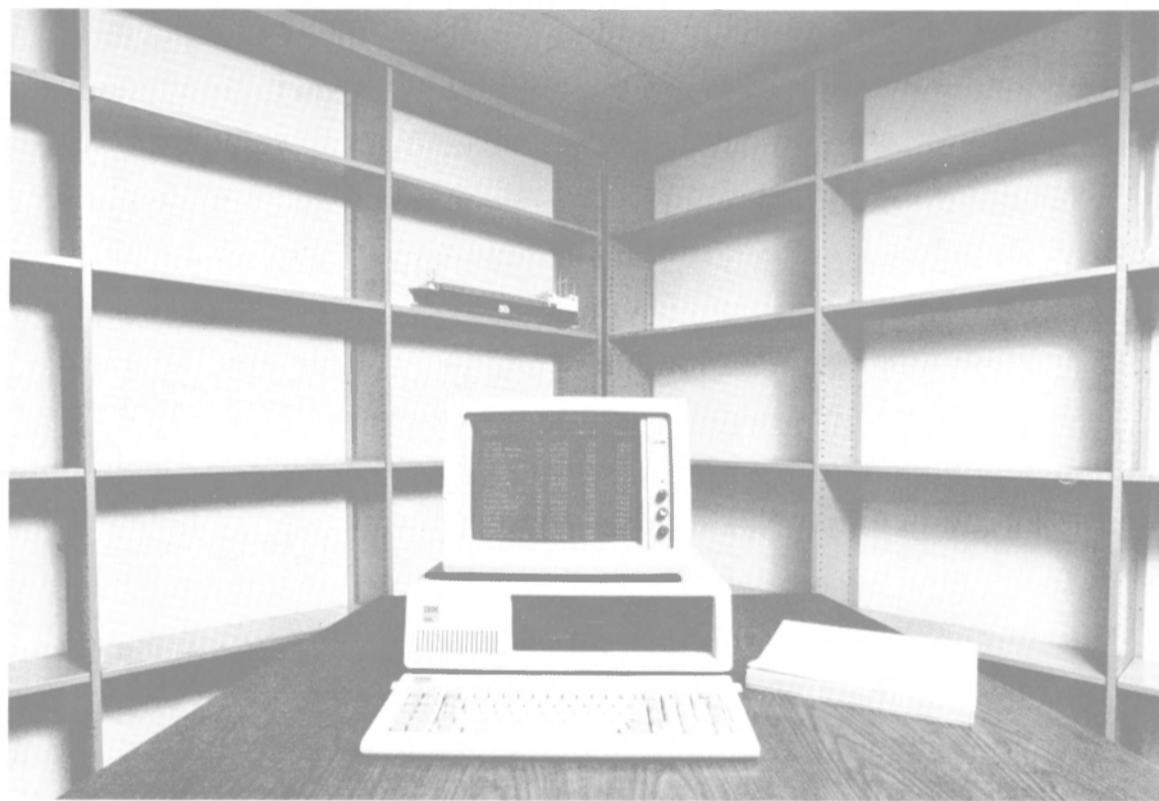
Committee hearings emphasized the fervent opposition to these two titles by affected groups and, immediately after these hearings, Sen. **Abdnor** asked AWO and others to develop amendments which he hoped would offer a constructive alternative to both the port and inland waterway provisions. A set of "improving" amendments were drafted and distributed; at the same time, AWO was working with the Senate Finance Committee to see if this committee would assert jurisdiction over revenue-raising provisions in Titles V and X. In May, the Finance Committee did receive sequential referral of three sections of S. 1739; the committee answered a number of AWO concerns by removing the authority of the Secretary of the Army to impose user fees, restoring the historic prohibition against administrative imposition of user fees, and requiring Congressional approval of any new inland waterway user fees. The Committee would also require port user fees to be approved by Congress.

As a result of Senate Finance Committee action, most Washington organizations felt that the risks of bringing the bill to the Senate floor had diminished and have urged Majority Leader **Howard Baker** to schedule the legislation.

As of this writing a number of controversial issues are outstanding so that it seems unlikely that S. 1739 will be brought to the Senate floor when Congress returns briefly to Washington, July 23-Aug. 10. However, if it appears that differences can be resolved so that a time agreement can be reached, the bill could come up in early Sept.

In a surprise move, Sen. **Robert T. Stafford**, Environment and Public Works Committee chairman, proposed a draft amendment to the inland waterway section (Title V) of S. 1739 which incorporates the Finance Committee amendments and eliminates other objectionable provisions of Title V—the cap, the advisory Users Board and the authority of the Secretary of the Army to impose fees. Instead, his proposal, similar in concept to H.R. 3678, would use the Inland Waterways Trust Fund to fund lock and dam projects. However, the trust fund would finance the full construction costs of these projects, while H.R. 3678 calls for the users to pay only one-

(continued on page 24)



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# AWO

(continued from page 23)

third of construction costs of seven projects through the trust fund. AWO will be further exploring this proposal, which, if modified, could be a breakthrough for potential Senate floor action.

While AWO's membership supports enactment of omnibus water resources legislation this year, it does not support imposition of higher user fees as a quid pro quo.

## Other Legislation Affecting the Barge and Towing Industry

AWO support amendments to the Staggers Act to more adequately protect water carriers against rail predatory pricing practices. The Association testified last summer during Senate Surface Transportation Subcommittee Staggers Act oversight hearings and submitted written comments to the House Subcommittee on Commerce, Transportation and Tourism. On June 29 of this year, Sen. **John C. Danforth** (D-MO), Senate Surface Transportation Subcommittee chairman, introduced S. 2837 which would give standing to water carriers to challenge rail contracts on the basis that they are predatory or otherwise anti-competitive and to require the ICC, in regulating the rail industry, to be guided by a policy that clearly prohibits anti-competitive or predatory pricing and practices.

AWO has been meeting with

shipper groups who are concerned that the Interstate Commerce Commission is half hearted in its implementation of the Staggers Act to address railroad abuses of the Act. A strong united front calling for Staggers Act reform in the next Congress is now being organized.

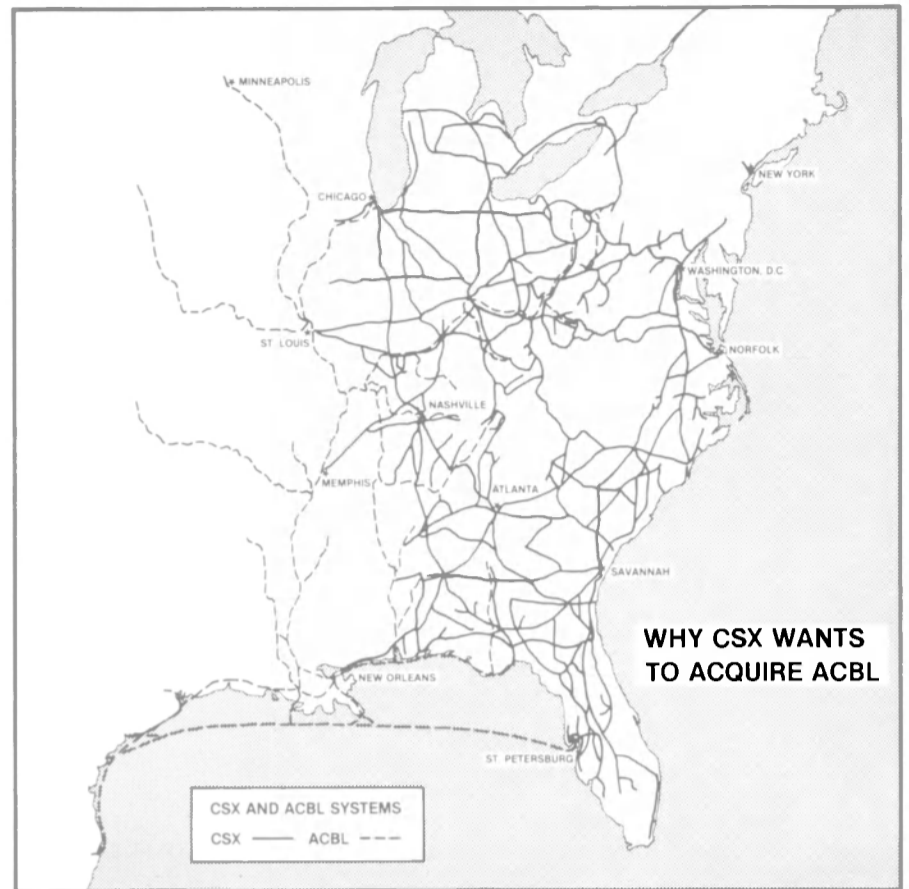
Additionally, AWO will continue to oppose efforts to ease prohibitions against rail ownership of water carriers, prohibitions which have been in force since enactment of the Panama Canal Act of 1912. The proposed acquisition of American Commercial Barge Line by CSX Corporation is the greatest threat to the survival of an independent barge industry and to the ability of shippers to enjoy competition in transportation (see map).

## Longshore Act Amendments

Another major legislative priority for the Association is enactment of amendments to the Longshoremen's and Harbor Workers' Compensation Act. Details of this proposal are covered in the AWSC report, elsewhere in this issue.

## Jones Act

AWO has always opposed legislative and regulatory efforts to undermine the Jones Act, which is the cornerstone of U.S. maritime tradition. The major battle which AWO and AWSC has been involved in during this Congress is legislation to re-flag two foreign-built passenger ships so that these vessels can compete in the domestic coastwise trade. The House Merchant Marine and Fisheries Committee twice approved different versions of this proposal, both



WHY CSX WANTS TO ACQUIRE ACBL

introduced by Rep. **Clay Shaw**, with House Merchant Marine Subcommittee Chairman **Mario Biaggi** as the leading proponent of this effort on the basis of jobs it will create in the maritime industry. (Once these vessels are re-flagged, the crews must be U.S. citizens.)

Companion legislation introduced by Sen. **Ted Stevens** was narrowly defeated in the Senate Commerce Committee by one vote.

Because House parliamentary rules made it virtually impossible to bring this bill to the House floor, supporters were successful in attaching a revised version to FY 85 defense authorization legislation as a national defense "troop transport" amendment. The Senate Defense Authorization bill contains no comparable provision; a House-Senate conference will determine whether the amendment survives. Meanwhile, both propo-

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nents and opponents are searching for other opportunities to enact this bill into law this year.

AWO and AWSC are concerned that granting a waiver to allow these two ships to enter the Jones Act trade will establish a precedent. Furthermore, it would provide a tremendous competitive advantage to the owners of these two ships, to the detriment of other parties interested in development of a U.S. built vessel industry.

#### Oil Spill Liability Fund

AWO has long been on record in support of establishment of an oil spill liability compensation and cleanup fund, providing that it pre-empted other federal, state and local requirements contained in the Act, and would not increase vessel limits of liability to unreasonable and uninsurable amounts.

After one year of opposition to such legislation, Secretary of Transportation Elizabeth Dole announced that the Administration now supported oil spill legislation contingent on several revisions to the bill, H.R. 3278, approved last year by the House Merchant Marine and Fisheries Committee. The Administration would raise limits of liability for all vessels to \$1,000 per gross ton—an almost tenfold increase in the committee-approved level for inland oil barges, and more than twice that which the committee recommended for other vessels. AWO opposes these limits.

Because so few legislative days remain in this session of Congress, it is unlikely that there will be additional action in this area. However, as it has been throughout previous Congresses, passage of oil spill liability legislation will be a House Merchant Marine and Fisheries Committee priority.

## Tipping Over The Pork Barrel

**Jeffrey A. Smith,**  
Director of Public Affairs

The term "pork barrel" has been part of the American political lexicon for years. William Safire's

Jeffrey A. Smith



*American Political Dictionary* defines it as "A piece of legislation that provides morsels for scores of Congressmen in the form of appropriations for dams and piers, highways and bridges." The phrase probably dates from the pre-Civil War practice of distributing salt pork to slaves from large barrels. Members of Congress, in their stampede for local appropriations, were likened by the pundits of the

day to the field workers rushing the barrel to get their share of the pork. In a Baltimore speech on inflation in 1952, **Adlai Stevenson** pledged "no pork-barreling while our economy is in its present condition."

The old phrase is still with us today, and during recent House debate on the first major water resources construction bill in fourteen years, opponents of the meas-

ure were standing in the Well of the House invoking "pork barrel politics!" as a catch-all damnation of the bill. However, after two years of careful planning, comprehensive hearings, and debate, the House passed the omnibus bill that authorizes the repair and replacement of seven critical locks and dams around the nation. The bill also provides for the development (continued on page 26)

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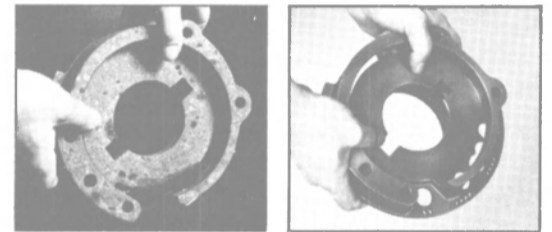
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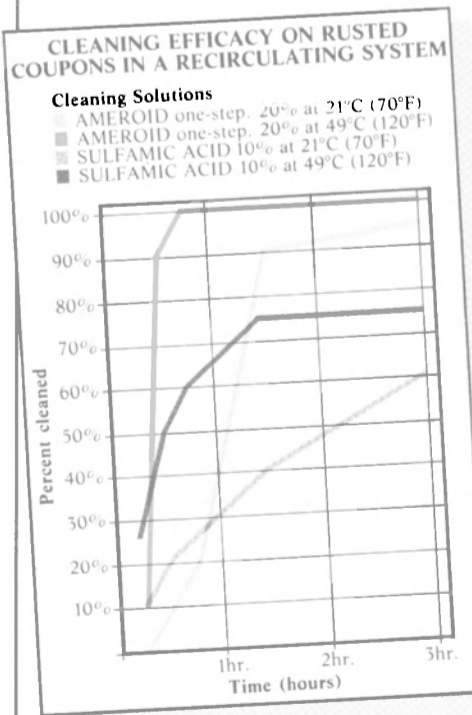
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(continued from page 25)

ment and deepening of ports, flood control, shoreline protection and water supply projects. On its long voyage to the House floor, the bill passed the full House Public Works Committee by a vote of 49-0. Once on the floor, it was approved by an

overwhelming vote of 259 in favor, and 33 against. There appeared to be a consensus in the national interest that something needed to be done to rebuild the crumbling infrastructure of the nation. There appeared to be a consensus among

our elected representatives that a vital need would be fulfilled.

Yet, the morning after the bill's passage, more than one newspaper carried stories which freely characterized the House as having once again dipped into the "pork bar-

rel" in its legislative deliberations. On the news pages, the term "pork barrel" was used interchangeably, and wrongly, as a common synonym for "water project."

In George Orwell's now-famous essay "Politics and the English Language," he suggests a few reasons why tired, worn out political phrases should be dropped from usage. First of all, phrases such as "pork barrel" pick up such diverse meanings over the years that their usage becomes inaccurate, and therefore misleading. More importantly, such cliches quickly become a writer's easy substitute for careful thought and analysis. When a writer must choose between constructing a carefully crafted paragraph, or getting by with a catch-all phrase, the pressure of deadlines and expedience often result in the latter.

So, flood control, water supply, irrigation systems, hydroelectric power, fish and wildlife enhancement, land reclamation and water-based recreation become "pork," and useful national policy becomes something to be flippantly denigrated. The use of such a reference had a place, perhaps, in the political columns of H.L. Mencken, or the musings of Mark Twain, or in a political cartoon depicting rotund politicians dispensing special favors. It has no place, however, on the news pages.

If historic and legitimate concern for maintenance and improvement of the nation's infrastructure—which includes waterway systems—is to be maligned and lumped into a dead cliché, under the guise of serious journalism, then every President and Congress who ever served would have to be counted among the conspirators in the national interest. The development of water resources produces enormous economic and social benefits that extend far beyond the local community.

There are, certainly, many debatable points regarding water resources legislation. For years, the center of controversy over federal water projects has been the question of who will pay what portion of the cost of such projects. This debate is valuable, essential, in the national interest, and is the process by which our federal legislators decide issues of national policy.

I suggest, however, that the term "pork barrel" used in a news story benefits no one, that it has long outlived its usefulness, that it is deceptive, ambiguous, and that like the phrases "know-nothing party," "Tammany Hall," "Smoke-filled Room," and anything with the suffix "... gate," should be relegated to the dustbin, where they belong.

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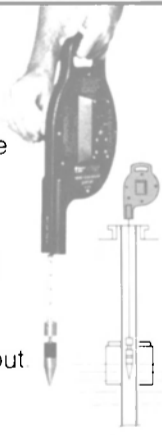


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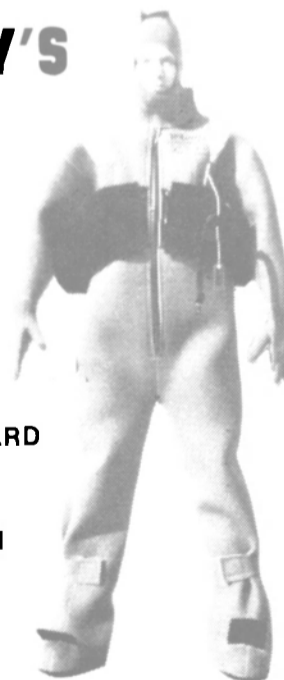
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## AWO Regulatory Activity: A Review Of Problems — And Solutions — Currently Afloat

Herman J. Molzahn, Vice President, Operations



Herman J. Molzahn

The American Waterways Operators, Inc. is the only association in the United States which focuses on the regulatory interests of the coastal and inland barge and towing industry. Through its committee structure, AWO carefully monitors all regulatory proposals dealing with the operation of vessels and waterways. Recommendations are made by AWO committees which eventually become recommendations to the Coast Guard via the Towing Safety Advisory Committee, or directly to the Corps of Engineers and other federal agencies. The Towing Safety Advisory Committee (TSAC) is a congressionally mandated advisory committee to the Coast Guard

which was established by Congress in 1980 at the urging of AWO. The effectiveness of TSAC is directly tied to the support of AWO and its committees.

The range of AWO's regulatory activities cover everything which might affect the barge and towing industry, whether from international organizations such as those conventions developed by the International Maritime Organization (IMO), or from local regulatory bodies. The effectiveness of AWO'S Washington, D.C. presence is enhanced by our Atlantic Regional office located in New York City, and by our Southern Regional office located in New Orleans, Louisiana.

Existing and pending regulations on licensing, boundary lines, pilots on tank barges, benzene, dry dock intervals, permits to build new structures on the waterways, National Transportation Safety Board recommendations, vapor recovery, load lines for river barges traveling a short distance on Lake

Michigan, and Subchapter O revision—are only a sampling of the many regulatory issues before the AWO which cover the broad spectrum of inland, coastal, and Great Lakes navigation and special equipment regulations for power driven vessels and for vessels carrying hazardous cargoes. Since compliance with inappropriate regulations could quickly raise operators costs to the point where water transportation is uneconomical, it is necessary for the industry to watch these developments and provide the input necessary to avoid regulatory overkill. The article outlines a few recent developments in AWO's regulatory activity.

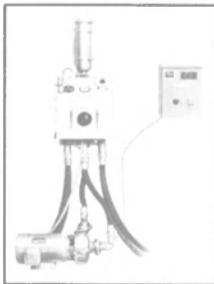
One example of our work involves proposed changes to licensing regulations, which were in part brought on by actions of the IMO. The licensing proposal, one of the most complex ever issued by the Coast Guard, would have disrupted the current towing industry (continued on page 28)

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(continued from page 27)

try licenses without any commensurate benefit to the industry or to safety. In part, through the efforts of AWO, and the understanding by the Coast Guard, it is expected that current towing licenses will be certified as an equivalent under the IMO Convention. It is ex-

pected that the Coast Guard will issue a supplemental notice of proposed rulemaking on licensing in the next few months.

On another issue, what can be so simple as drawing a line? The apparent simplicity soon disappears if a different world of regu-

lations for licenses, crew size, construction and equipment lies beyond the line. To make matters more complicated, draw additional lines for different requirements and cross the lines here and there. A recent rulemaking on boundary lines to implement various stat-

utes was issued by the Coast Guard, and it presented just such problems.

AWO developed charts showing the numerous boundary lines established by current law and regulation. The charts were viewed by the Coast Guard at a TSAC meeting and detailed written comments were submitted to express the confusion which now exists as a result of the boundary line proposals. This thorough analysis conducted by AWO will no doubt assure that clarity will be achieved in the expected boundary line rulemaking. A supplementary notice of proposed rulemaking is anticipated in the next few months.

In response to the Coast Guard's pilotage proposal, AWO conducted an economic impact survey to determine the cost of employing pilots on seagoing tank barges over 1,000 gross tons. The total bill to the industry for 1982 would have exceeded \$88 million with no demonstrated increase in safety and, in fact, the probability of a decrease. A final rule is expected which will permit towing vessel operators to do their own pilotage.

Pending benzene regulations by the Occupational Safety and Health Administration followed by Coast Guard implementation of those standards for the marine industry has great significance not only for benzene, but for all chemicals carried by tank barge. The standard for benzene will no doubt serve as a model for the carriage of all other disease-causing chemicals. AWO has formed a subcommittee to anticipate this rulemaking and they are ready to respond appropriately when the time comes. The subcommittee is currently studying information on marine personnel exposures as well as looking at experiments that member companies have conducted on equipment.

An opportunity to change the time intervals for dry docking inspected vessels and for tailshaft examinations has developed because of an advance notice of proposed rulemaking issued by the Coast Guard. Through AWO, both inland and coastal operators are reviewing their experience with dry docking. This information will be tabulated and a recommendation will be made by AWO at the next TSAC meeting tentatively scheduled for October 11, 1984, in Washington, D.C.

On another front, there are many federal laws and regulations with which the industry may or may not be complying, or which even the Coast Guard may not be actively enforcing because the violation of such regulations and laws is not causing marine casualties. However, these laws are still on the books and when an issue

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emerges it can cause a great problem for both the Coast Guard and the industry. For the past 20 years, the industry has operated unmanned river hopper barges for a short distance on Lake Michigan from Calumet Harbor, Illinois, to Burns Harbor, Indiana. Technically, these river barges are required to have limited Great Lake load lines. However, in practice, virtually no barge in that trade has such a load line. The issue emerged in 1975, and the industry and the Coast Guard began working on a solution.

As time passed, and personnel changed, the effort faded away and the issue was dormant until last year. In the winter of 1984, a severe storm hit Lake Michigan and three barges in safe harbors of refuge sank. None of the barges which sank had load lines, and even if they did it would not have averted the sinkings. This incident again brought the issue to a head. AWO formed a subcommittee and it has pursued all administrative remedies with the Coast Guard. The Coast Guard formally holds that the only solution to this problem is a legislative one and therefore, they cannot grant regulatory exemptions to the vessels in question. AWO is now in the process of taking this issue to Congress.

Actions by local governments also create problems which could spread across the nation and cause serious harm to the industry. Santa Barbara County, California, for instance, has proposed a ban on water transport of crude oil. After January 1, 1990, all crude oil would have to be moved by rail and pipeline and all existing marine terminals would have to be dismantled. AWO and its members have testified at the hearings and they have sent letters for the record objecting to the proposal.

The AWO also provides a much needed advisory service through its Navigation and Structure Subcommittee. This group, composed of river pilots, makes itself available to advise builders of marine facilities and fleeting areas, and the Corps of Engineers, on whether the proposed facility is safe for river navigation from the pilot's view point. In many instances where the proposal was deemed unsafe, the committee members have worked with the facility interested to work out an acceptable solution.

AWO covers the regulatory waterfront through a system of committees and subcommittees. The Corps of Engineers Liaison Committee and the Navigation and Structures Subcommittee deal with the operations of the waterways themselves. Vessel operations are handled by the Coast Guard Liaison Committee, Coastal Operators Committee, IMO Committee and Communications Committee. The following subcommittees have been established under the Coast Guard Liaison Committee: Tank Vessel

Operations, Personnel and Manning, Port and Terminal Security, Navigation, and Technical and Engineering.

AWO's regulatory goals are (1) review existing regulations to determine whether they are still appropriate (2) react in a timely fashion to a legislative, regulatory and administrative actions, and (3) to anticipate future legislative

regulatory and administrative actions when possible, by taking preliminary action to avert or modify expected government actions so that an acceptable result is produced. AWO provides the necessary structure to focus the expert knowledge of the barge and towing industry on the regulatory problems which it faces throughout the nation.

the number of second-tier shipyards has dropped from slightly over 300 to about 250 establishments. This is not surprising when construction statistics are examined (see Table I).

Of major importance to the shipyard industry is the Jones Act—the singular law responsible for the creation of the inland and coastal barge and towing industry and the offshore service industry. This nation has long benefitted from these industries which provide low cost water transportation and an offshore service industry which assures our energy independence.

The Jones Act gave rise to a shipbuilding industry which, in our free enterprise system, is efficient, cost-effective, and technologically advanced. In the peak years it has given direct employment to 50,000 people and because (continued on page 30)

## AWSC: Legislation And Regulation In The Shipyard Industry

Herman J. Molzahn  
Vice President, Operations

The American Waterways Shipyard Conference (AWSC) is the national trade association for the small and medium-sized commercial shipbuilding industry. These yards build and repair the barges, tugboats, and towboats for the fuel-efficient domestic water transportation industry, as well as the supply boats, crewboats and other specialized vessels for the offshore service industry and a wide variety of fishing vessels.

The AWSC has just completed its annual shipyard survey which is designed to develop an accurate profile of the industry which then can be used to identify industry trends for use in the legislative and regulatory areas and which are also useful to the industry.

The 1983 survey indicates that

TABLE I  
New Construction Activity  
Number of companies reporting—31  
( ) Number of companies reporting specific item

	1978	1979	1980	1981	1982	1983
TOWBOATS	32 (6)	46 (8)	59 (11)	44 (14)	69 (14)	15 (14)
TUGBOATS	46 (4)	49 (4)	57 (5)	73 (8)	47 (10)	9 (9)
OFFSHORE SUPPLY and CREWBOATS	82 (3)	83 (3)	81 (6)	109 (7)	195 (9)	16 (9)
RIVER HOPPER BARGES	1037 (11)	1577 (12)	1933 (12)	2788 (13)	767 (14)	128 (14)
RIVER TANK BARGES	131 (8)	105 (8)	205 (10)	136 (11)	26 (13)	25 (13)
OFFSHORE HOPPER and DECK BARGES	45 (3)	54 (3)	50 (7)	46 (10)	74 (10)	12 (12)
TANK BARGES	3 (1)	5 (3)	10 (6)	10 (7)	14 (9)	2 (9)

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(continued from page 29)

of the ripple effect on steel producers, equipment suppliers and various other service industries, it has provided additional employment opportunities for 175,000 people. Every legislative or regulatory attempt to admit foreign built vessels in contravention to the Jones Act, does nothing but weaken the Act's principles and eventually could cause its demise. The AWSC and its member companies are supportive and dependent on the integrity of the Act, and will continue to vigorously defend it.

On another issue, reform of the Longshoremen's Act may become a reality in 1984. Both the Senate and the House have passed versions of the Longshore Reform Bill, and the differences must now go to Conference Committee. House and Senate staffers are diligently trying to arrive at reasonable compromises. There are, however, many areas where the bills agree and which go to the heart of the economic problems caused by the 1972 amendments to the Act. Areas of agreement include: a) 5% cap on the annual benefit escalator; b) Repeal of the unrelated death benefit provision; c) A cap on death benefits at 200% of the national average weekly wage conforming it to disability benefits; d) Codification of the Supreme Court's **Hillyer** decision, precluding fringe benefits from wages in calculating an employee's average weekly wage; e) Imposes an offset for any other worker's compensation or Jones Act benefits received; f) De-

barment of medical providers and claim representatives for fraud, raises the penalty for misrepresentation from a misdemeanor to a felony, requires semi-annual reports of outside earnings, and authorizes for filing a fraudulent claim; g) Preventing deputy commissioners from speculating on future losses of wage earning capacity; h) Expediting settlements allowing automatic approval of settlement agreements within 30 days where the employee is represented by counsel; i) Prohibiting employees in shipyards from suing their employers in court on some dual capacity theory; j) Excluding clerical, secretarial, data processing and security personnel from the Acts' coverage.

The two most important differences between the House and Senate bills involve jurisdiction and occupational disease. The AWSC has long fought for excluding small shipyards from Longshore Act coverage. The second tier shipyards are not able to use their facilities for non-maritime construction because the high rates of the Longshore Act make them non-competitive with other steel fabricators. Highway and bridge construction have increased over 70% in the last year, since the 5% fuel tax came into effect. However small shipyards have not been able to participate in that business or in many other non-maritime steel fabrication jobs because of the Act. In addition, many shipyards could also become steel service centers if they were not burdened by the

Act. Progress is being made prior to conference to find a way to exclude the shops and building areas in shipyards from maritime coverage so that the facilities can be more fully utilized. In addition, progress is also being made on resolving the occupational disease issues. With the difficult issues out of the way, it is hoped that a bill will be passed before Congress adjourns in October 1984.

Longshore Reform will provide shipyards with greater cost control and more flexibility to use their facilities.

Progress is also being made on the development of a vertical standard for the shipbuilding industry. Two years ago Phase I of the project was completed when OSHA consolidated the three shipyards standards—ship building, shiprepairing, and shipbreaking—into one single standard. The second phase is nearly complete where the appropriate general industry standards will be combined with the shipyard standards thereby producing a vertical standard which contains all the regulations that a shipyard must comply with. Finally, the third and most difficult phase is the revision of the vertical standard so that all regulations will be appropriate for the shipyard environment. This will be undertaken on a section-by-section basis under a review schedule established by OSHA.

In 1980, the AWSC was the recipient of an OSHA New Directions grant. In 1981, the AWSC published the new Employees

Safety Training Program, a slide cassette presentation. The funds raised through the sale of the Safety Training Program have enabled the AWSC to become financially self-sufficient to produce additional programs. The AWSC Shipyard Safety Committee will soon embark on the development of a Supervisors Safety Training Program. These programs are wise investments that anticipate recovery in the shipyard industry, and that will be in place once the recovery occurs.

The American Waterways Operators, Inc., and the AWSC, represent a rare alliance for an industry trade association because it combines both the manufacturers and the operators of the equipment. This coalition reflects the true nature of the maritime industry which is an integrated system composed of several distinct and essential parts: vessel operators, ports and terminals and shipyards.

## Farrell Comments On Rail-Barge Merger

**Joseph Farrell**, president of the American Waterways Operators, Inc., reacted strongly to the July 24, 1984 Interstate Commerce Commission's 4 to 0 vote to allow CSX, the nation's second largest railroad to acquire American Commercial Barge Lines, one of the nation's largest barge lines.

"By permitting the dominant rail carrier in the east to swallow up the largest inland barge carrier—thereby disrupting and in the long term severely damaging the all-important intermodal balance which ensures competition, efficiency, and lower costs—the ICC is sanctioning an extremely dangerous precedent," Mr. **Farrell** said.

"There can be no more important public interest issue than the preservation of competition," Mr. **Farrell** said. "From vigorous competition flows lower rates, innovative services, ample supply of equipment, and all the many benefits that result from management striving for improved efficiency so that it may prevail in the marketplace. The reduction in competition that this merger allows will bring inefficiency and higher consumer prices.

"The paramount issue here is protection of American consumer, who will be the ultimate loser in a marketplace of rail monopoly and reduced competition."

"This fight is not over," Mr. **Farrell** said. "We're confident we'll be successful on appeal."

The American Waterways Operators, Inc. is the largest national trade association representing over 250 companies involved in the barge and towing industry, and the shipyards that build and repair the industry's vessels.

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## MonArk Boat Announces Promotions And Changes

In support of continued growth in both recreation and commercial/military markets, **Bruce Neimeth**, president, MonArk Boat Company, Monticello, Ark., announced a number of promotions and changes.

At the corporate level, two new positions, materials manager and information systems manager, have been created.

**Jerry Vance**, as materials manager, will be responsible for purchasing, inventory control, supply, traffic and production scheduling. In addition, as a member of the executive committee, he will participate in the development and implementation of company policy as it affects his areas as well as related areas.

**Mark Therion**, manager, information systems, will be responsible for the development and implementation of an expanded electronic data processing system for the company that will effect all areas of sales, production, engineering and finance.

In the Workboat Division, the engineering department has been reorganized to better meet the needs of the fully pre-engineered product line in all sizes and types of vessels produced.

**Shellene Perkins** has been promoted to engineering manager. A MonArk employee since 1976, she has progressed from a buyer to a marine designer to sales engineering. Most recently Ms. Perkins headed up the design support group involved in development of bids and quotations for new business.

In her new position, she will be responsible for all engineering and design work in support of product development prior to and during actual production. She will supervise MonArk's internal staff of naval architects, marine designers and draftsmen as well as the outside consultants in design and development work.

**Nirmal Iyengar** has joined MonArk as a naval architect with responsibility for development of propulsion, electrical, fluid and mechanical systems.

Mr. Iyengar is a graduate of the University of Michigan with a degree in naval architecture. In addition, he has six years' experience as an on-board ship's engineer and has sailed the world's waterways out of England, Hong Kong and Bombay.

In the recreation division, three internal promotions have been announced that will help the division meet its' present accelerated growth activity.

**Gene Glund** has been promoted to the newly created position of national sales manager, Recreation Division. His responsibilities will include the direct supervision of all field sales people in the U.S.

as well as the internal sales support and service people.

In line with this move, MonArk is doubling its field sales organization to meet the increased market demand created by the expanded '85 product line with boats specifically targeted for all geographical areas of the country.

**Redmon O'Neill** has been promoted to plant manager, Fiberglass Plant. In this position, he

will be responsible for the day-to-day operation of MonArk's fastest growing facility, the Fiberglass Recreation Plant.

**Gary Tucker** has been promoted to the production scheduling manager position to replace **Redmon O'Neill**.

MonArk Boat Company is a wholly owned subsidiary of MonArk Industries.

## IMODCO Gets Contracts From Indonesia, India — Literature Available

IMODCO, a unit of AMCA International Corporation, has been awarded contracts for single point mooring (SPM) terminals by Pertamina-PDN and India Oil Company.

The Pertamina contract, repre-


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**SAFETY**  
**VERSATILITY**

... in evaluating even the most complex load conditions

... in assuring proper stability and avoiding excessive stress

... in providing a multi-purpose computer capable of running all MMS systems



senting IMODCO's first specially designed commercial, lightweight buoy, is for operation offshore Tanjung Paser, Indonesia. It will moor tankers up to 35,000 dwt, discharging jet fuel to an onshore booster station and storage facility.

The terminal will be supplied with two 12-inch-diameter floating hoses and two 16-inch-diameter pig launchers located in opposite access chambers of the buoy

hull. Pigs will be inserted into the launchers and fluid originating from a moored tanker pushes them through the SPM terminal cargo system toward shore.

The India Oil Company contract is for a replacement buoy for an SPM currently operating in the Vadinar Field, Gulf of Kutch, in northwest India.

Capable of mooring tankers up to 300,000 dwt, the India Oil off-

shore terminal has been designed with extra shell thickness and self-installation features and incorporates hydraulic actuation for the pipeline end manifold (PLEM). Hoses, chains and hawsers already existing at the site will be utilized.

For more information on IMODCO SPM Terminals,

Circle 64 on Reader Service Card

## Dubai Drydocks Reports Successful First Year Of Operation

Dubai Drydocks in U.A.E. recently announced some of the highlights that marked the new yard's first full year of operation. These included:

- Full commissioning of the extensive facilities of the ship repair yard;
- Establishment of a worldwide marketing network that has generated an increasing level of inquiries;
- Recruitment of a work force of about 500 personnel that are being well supported by experienced subcontractors in the U.A.E.;
- The repair of 68 vessels, well above the target, and 89 percent for export;
- Commencement of a general engineering service to local companies utilizing the yard's extensive machine shop facilities which are unique to the Arabian Gulf; and
- Operation at full profitability at a low trading level during the final quarter of the first year.

Now in its second year of operation, Dubai Drydocks reports an encouraging volume of outstanding orders. The yard is represented in the U.S. by Keppel Marine Agencies Inc. of New York City.

For free literature detailing services offered by Dubai Drydocks,

Circle 60 on Reader Service Card

## Willem Pot B.V. Offers 44-Page Marine Equipment Stocklist And Catalog

Willem Pot B.V. of Rotterdam, Holland, has prepared a detailed stocklist of the extensive marine stocks held at the firm's Maassluis works and stockyards, with the object, the company says, of indicating the way in which they can most be of service to customers.

The 44-page stocklist is well illustrated with photographs and drawings, and is divided into four sections that list such equipment as anchors, chains, deck machinery, pumps, generators, lifeboats, ladders, gangways, masts, derricks, etc., either new or reconditioned to "as new" condition. All equipment can be supplied with certificate of the preferred inspecting authority.

A complete index in the front of the stocklist serves as a quick reference to the various sections as well as to any item of interest to the user.

For more information and a copy of the stocklist from Willem Pot B.V.,

Circle 76 on Reader Service Card

Circle 108 on Reader Service Card 33

## ... AND HERE'S WHAT IT MEANS TO YOU:

It means that with CARGOMAX aboard, in any port from Tokyo to Trinidad, your calculations can be performed faster with greater confidence. You will worry less about the stability of the ship, the safety of the crew—and every dollar of profit you expect that ship to bring home.

### WHAT IS CARGOMAX?

Utilizing the multi-purpose IBM®PC micro computer, the CARGOMAX ship loading system is an accurate, easy-to-use means of calculating draft, trim, stability and longitudinal strength... at the touch of a button.

... and whether you operate tankers, bulk carriers, container, ro-ro, or general cargo ships, CARGOMAX is specifically tailored to the physical characteristics of your vessel—or vessels. In other words, every CARGOMAX program is one of a kind!

### HOW IS THIS ACHIEVED?

First, each vessel's program is developed from the technical documentation you supply. This includes all information specific to a given ship, or class of ships—such as hydrostatic data, tankage data, and the lightship weight distribution.

From this, MMS designs your specific CARGOMAX program—and submits it for approval by the classification society you specify.

### HOW IS IT USED?

Once aboard ship... your deck officer simply turns on the IBM®PC and the CARGOMAX program is automatically loaded from the ship's diskette. All necessary instructions are then visually displayed to take the operator through the entire procedure.

Examples of CARGOMAX calculations include: Deadweight and Displacement; Drafts and Trim; Metacentric Height and Free Surface Correc-

tion; Bending Moment and Stress; Summary of Cargo Loading by Hold or Tank. Optional features include static heel, grain stability, ullage conversion and container entry calculations.

### IS IT POSSIBLE TO MAKE SHORESIDE CALCULATIONS?

Yes. By storing all ship's data files on a single disk, a shoreside IBM®PC computer may be used for performing calculations for all ships in your fleet. For the record, the input data for a specific loading case may be stored on a diskette and sent ashore for later review. There are also options for sending this data via satellite communications.

### ARE WE TALKING A LOT OF MONEY?

No! Because CARGOMAX allows faster, more accurate loading calculations than the traditional manual methods, you are always assured of the most efficient and profitable results. In addition, efficiently utilizing the IBM®PC for other purposes, the value of CARGOMAX is greatly enhanced and the relative cost becomes far less than that of dedicated systems now on the market.

MMS offers other efficient, cost saving programs in the areas of: Spare Parts Management, Planned Maintenance, Vessel Performance, Fleet Payroll and Personnel Management... all of which may be used on the IBM®PC. And as an authorized IBM Value Added Dealer, MMS offers hardware, software and service from one source.

Don't you owe it to yourself to find out how easy and profitable it is to move your ship's operations into the twenty-first century? Do it ahead of your competitors and in time to capitalize on significant changes now underway in the world-wide marine industry.



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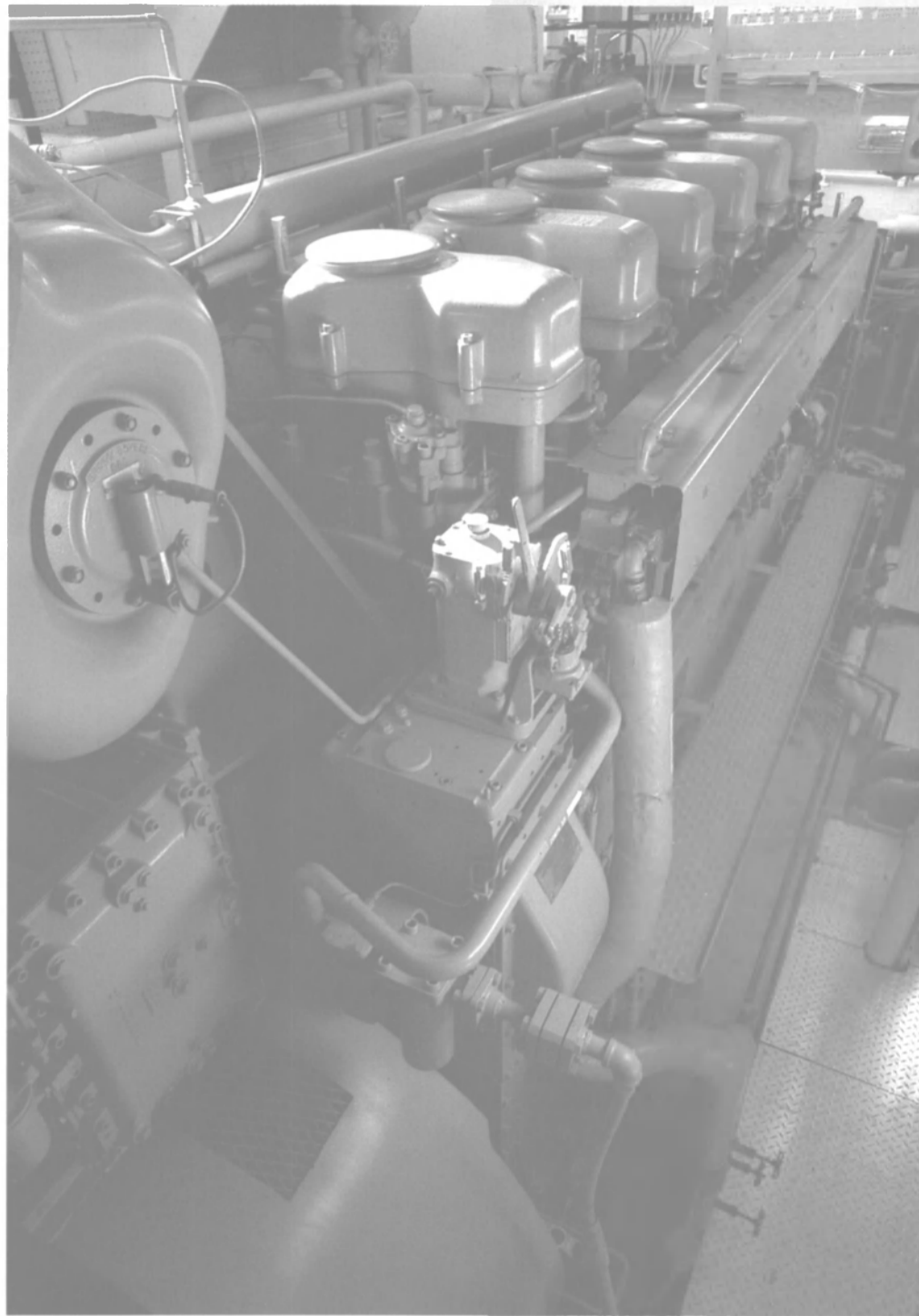


*The Bill Elmer visited New Orleans for the 1984 Work-Boat Show.*

"Repowering the M/V Bill Elmer with these Krupp heavy fuel engines didn't happen overnight," recalls Butch Barras of ACBL. "We studied this move for a long time; serious study for 2½ years, and dyno testing for close to a year before putting a heavy fuel engine in the boat.

"All through that, Gulf was a constant source of information and advice. Gulf helped determine power requirements and fuel mixtures, and provided a lot of information on the kind of lubricants we'd need to keep things running burning 1500 Redwood fuel with its high vanadium and carbon deposits."

*With 1320 hours on the engines, the rings remain clean and free, and piston skirts show minimal scuffing.*



*One of three Krupp MaK 453 inline 6 cylinder engines now powering the M/V Bill Elmer. ACBL repowered the vessel after studies showed the probability of significant fuel savings from heavy fuel engines.*

Barras continues, "It's no exaggeration to say we wouldn't be where we are on this without Gulf. They work hard to help, and their Harmarville lab is an excellent research facility.

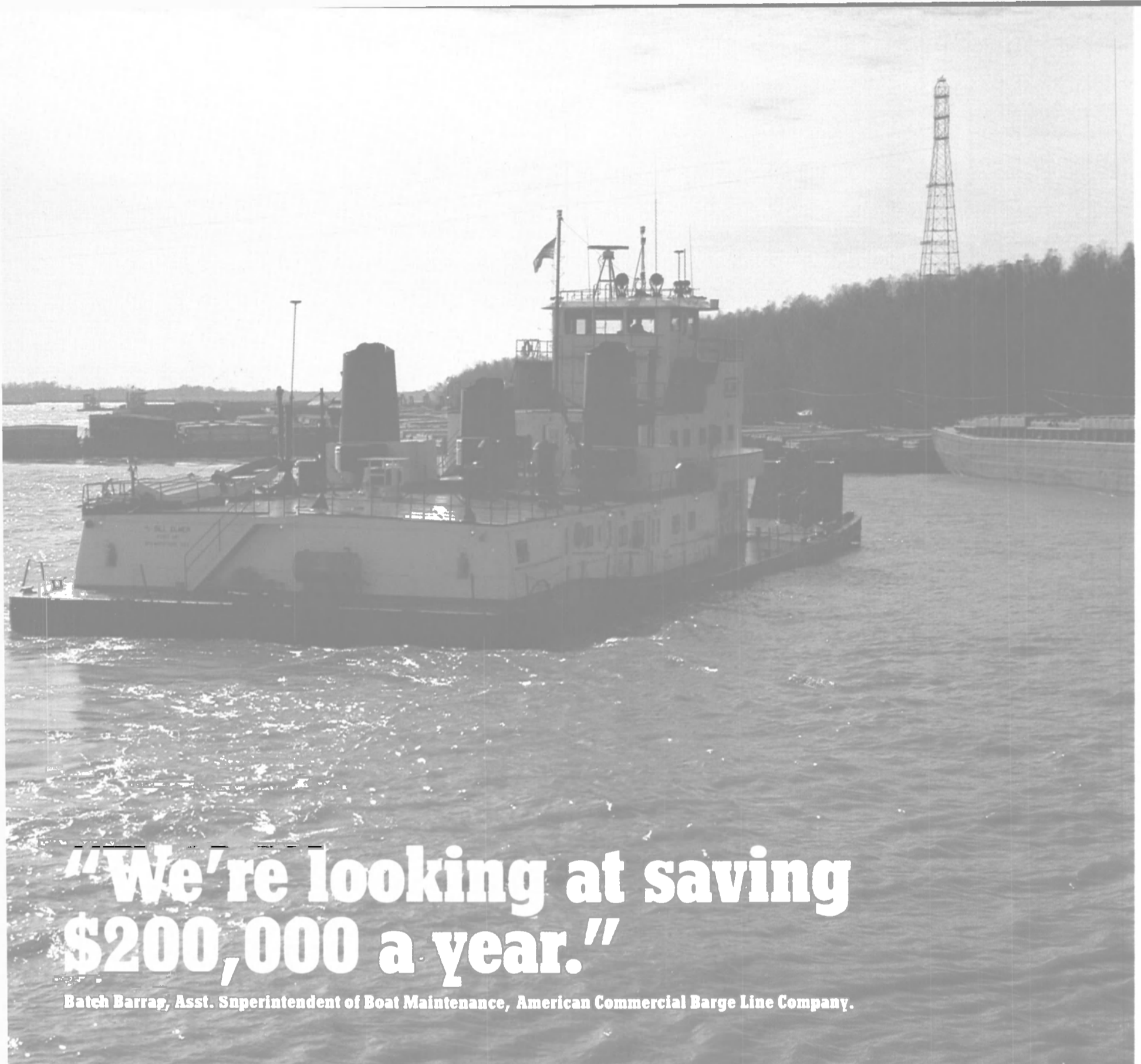
"Along with the advice and information, Gulf provides excellent lubricants. Gulf Select 40 is our main engine oil, and look at these engine parts. We were planning to pull the heads and check all the valves at 2,500 hours. After looking at one cylinder here

in New Orleans during the Work-Boat Show, with 1320 hours on the engines, we'll

*Gulf representatives Warren Eise and Sam Ross with Butch Barras, ACBL Assistant Superintendent of Boat Maintenance, in the Bill Elmer pilot house.*







**"We're looking at saving  
\$200,000 a year."**

**Butch Barrap, Asst. Superintendent of Boat Maintenance, American Commercial Barge Line Company.**

probably wait until 4,000 hours before we even have to check for wear."

Butch concludes, "We're projecting a savings of about

*Gulf pro R.O. Welchel and ACBL Senior Vice president, W.N. Whitlock.*



\$200,000 a year in fuel cost alone due to repowering with the heavy fuel engines. Gulf helped make the transition a lot smoother."

For products to help save your machinery, and information to help you save money, ask your Gulf pro, or write, Gulf Oil Products Company, P.O. Box 1563, Houston, Texas 77251.



**Everything we do makes  
business better for you.**

© 1984 Gulf Oil Corporation

Circle 344 on Reader Service Card

## Hitachi Zosen Receives Jackup Drilling Rig Order From India

Hitachi Zosen recently received an order to build one cantilever type mobil offshore jackup drilling rig. The order came from the Oil and Natural Gas Commission (ONGC) of India.

This drilling rig is the third of its type built by Hitachi Zosen for ONGC, and is to be used as a replacement for a previously built rig, the Sagar Vikas. After the new rig is completed in January 1985, it will be used to drill for oil in the Bombay High waters.

The rig will have a length of 216.54 feet, breadth of 200.14 feet, and depth of 22.96 feet. It is capable of operating in waters of up to 91.4 meters deep (300 feet), and can drill to maximum depth of 6,096 meters (20,000 feet). It is designed to withstand waves of up to 18.6 meters high and wind speeds of up to 54 meters per second; thus the rig is ensured stable operation in severe weather and sea conditions.

The rig is classified by ABS.

## 14 Marine Safety Training Courses Detailed In 12 Page Brochure

Marine Safety International (MSI), located in the Marine Air Terminal at LaGuardia Airport in New York City, is offering a total of 14 marine training courses during 1984. The courses are summarized as follows:

"Shiphandling and Maneuvering in Restricted Waters," for masters, pilots, chief mates and deck officers. Two to four persons—three to five days. Optional areas of emphasis: pre-command shiphandling, bridge team management, watchkeeping, shiphandling for pilots, harbor piloting and docking.

"Valdez and Prince William Sound," U.S. Coast Guard accredited course for geographic familiarization and VLCC shiphandling. Five-day course includes USCG radar endorsement if desired. Two to four persons—three to five days.

"Approaches, Moorings and Breakaways at Single Point Moorings and Storage Vessels," for masters, chief mates, and other deck officers. Various size vessels can be maneuvered and moored in the Loop, Hondo, and similar areas. Two to three persons for three days; four persons for five days.

"Shiphandling and Piloting in St. Lawrence Seaway," uses two types of seaway vessels—120 miles of difficult sections of the Seaway. Four persons for five days. Four levels of courses based on trainees' past experience.

"Canal Shiphandling and Piloting in Panama and similar areas,"

for apprentice to experienced levels. Lock approaches with oblique and parallel walls. Two to four persons—three to five days.

"Advanced Shiphandling for Naval Officers," two to eight persons—three to five days. Special courses for aviation and surface warfare officers.

"Risk Reduction," shiphandling and maneuvering using both the ship and restricted visibility bridge

simulators with concentration on past accident situations. Four to eight persons—five days.

"Radar—ARPA," course for masters and chief mates. The five-day course includes USCG radar endorsement if desired. Meets forthcoming USCG and IMO requirements for ARPA training. Two to eight persons—three to five days.

"LNG Cargo Handling Familiar-

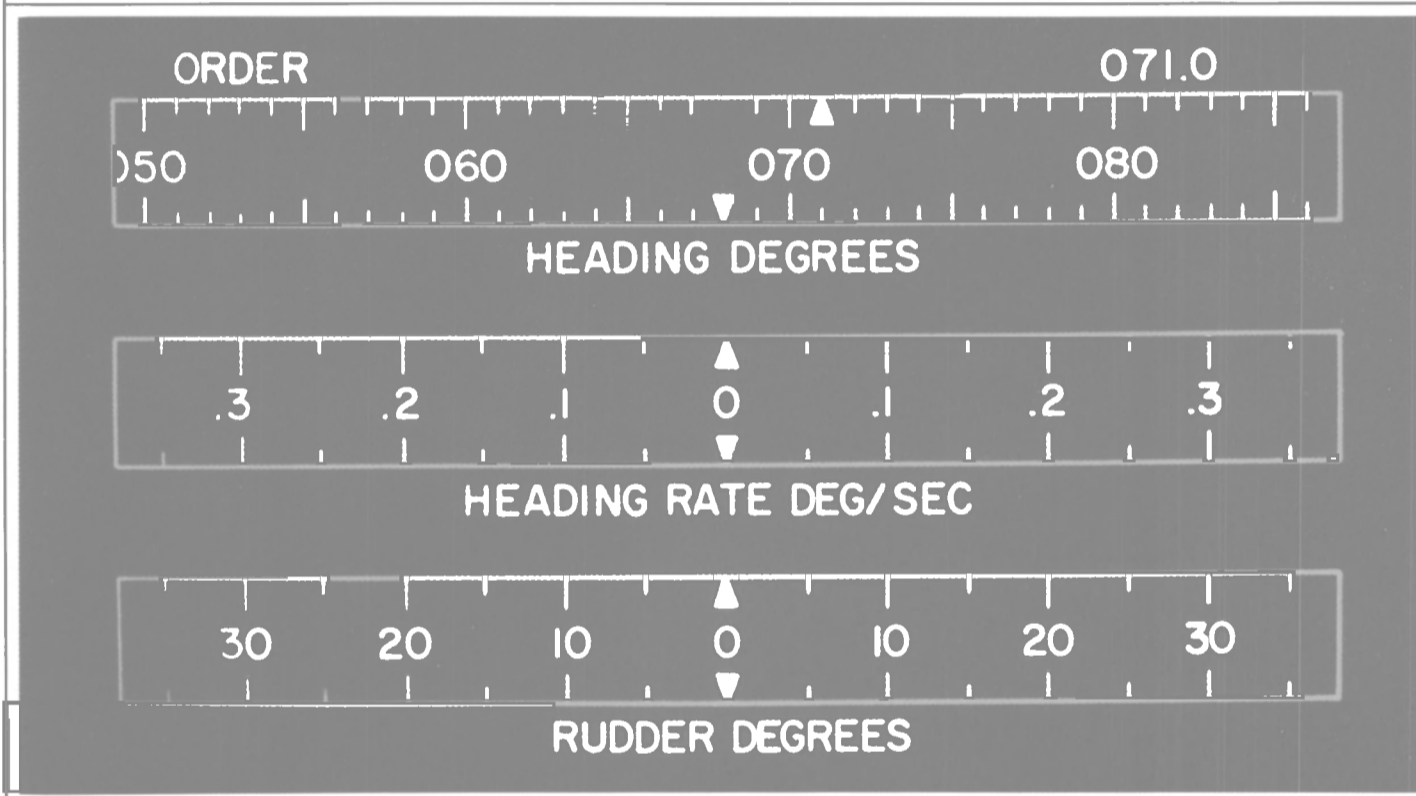
ization," for ship's officers, terminal personnel and Coast Guard inspectors—uses LNG cargo-handling simulator. Six to 10 persons—five days.

"Advanced LNG Cargo Handling," for ship's officers who will be responsible for gas handling. Uses LNG cargo-handling simulator. Six to eight persons for 10 days.

"Emergency Medical Care at

### SPERRY MARINE TECHNOLOGY:

# INTEGRATING TODAY



At Sperry, we know how important it is to listen. We've been listening to the marine industry around the world for over 70 years. As a result, we understand the challenges facing you today.

We understand the economic and competitive necessities to be ever more efficient, more cost effective, more profitable.

We understand the environmental and regulatory imperatives to sail cleanly and safely within tight, new operating parameters.

We understand that tomorrow these challenges will become even more formidable, more intense.

But most importantly, we understand the

advanced technologies required to develop the new systems your ships and fleets will need to meet these challenges successfully.

We understand because we've been listening.

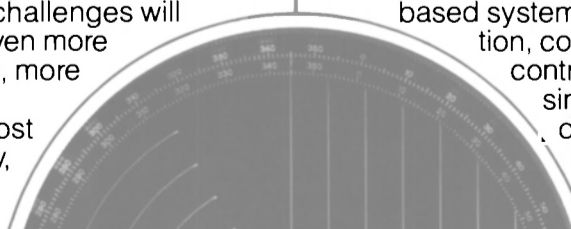
### COMPUTERS AWEIGH! A DECADE-PLUS OF SPERRY LEADERSHIP.

Sperry developed the digital computer. And we've been a leader in developing computer-based systems for navigation, command and control ever since. We introduced the world's first family of computer-

based collision avoidance systems more than a decade ago. In their years at sea, these systems have proven themselves

in the only way that matters—helping merchant ships of every description pilot safely through the world's busiest harbors.

Moreover, our leadership in computer-based technology has proven itself versatile enough for a wide number of specialized applications—including cable



Top to bottom: Sperry Ship Control Display, Autopilot Keyboard, Radar Display, U.S. Coast Guard Medium Endurance Cutter.

Sea," for shipboard, rig or ashore personnel. Presented by medical personnel, uses D.O.T. "First Responder" outline and is USCG approved. One to 20 persons—three to five-day course.

"Steam Turbine Power Plant Familiarization," for masters and chief mates. Uses full engine room simulator. Four to eight persons for three days.

"Steam Turbine Power Plant

Management," watchstanding and handling emergencies in the full engine room simulator—also includes interactive troubleshooting on computer terminals. Four to eight persons for five days.

"Advanced Steam Turbine Power Plant Management," troubleshooting and handling emergencies for chief engineers. Uses full engine room simulator and computerized troubleshooting—round-table dis-

cussions on advanced topics with experts. Six to eight persons for 10 days.

The colorful well-illustrated brochure offered by MarineSafety International consists of 12 pages that describe how the courses are taught and contain a variety of photographs showing MSI instructors and students using such training equipment as a Full Mission Ship Simulator, Restricted

Visibility Bridges, a Liquid Cargo Handling Simulator and a Full-Environment Engine Room Simulator.

For more information and a copy of the brochure,

Circle 52 on Reader Service Card

### Nelson Named President Of Johnston Pump

Charles M. Nelson has been promoted to president of Johnston Pump Company, Glendora, Calif., a major manufacturer of vertical pumps for industry and agriculture.

The announcement was made by W. Joseph Blood, chairman-president of Johnston Pump/General Valve, Inc., of which Johnston Pump is a division.

Mr. Nelson joined Johnston Pump in 1974 as manager of the parts and service division and became vice president of that division in 1977. Under his leadership, parts and service operations expanded from a single facility in Glendora to become the nation's largest vertical pump service organization with service centers in key industrial locations throughout the U.S. as well as in Canada and Singapore.

Before coming to Johnston, he was district sales manager, production manager and national market manager for Peerless Pump Company.

### Lubritech Fuel Additive Lowers Maintenance Costs — Field Study Available

XPCL upper engine cleaner/lubricant from Lubritech International Corporation of Bethesda, Md., is said to reduce maintenance and fuel costs, and extend running time between overhauls for diesel engines.

According to Chauncy Willis of Norfolk-based C.G. Willis Towing Company, "With XPCL we're getting 7,500 more hours of running time between overhauls . . . that's a 43-percent increase that will save us thousands of dollars in maintenance. Basically, XPCL eliminated carbon build-up without making the fuel burn hotter. That reduced heat and friction, which reduced engine wear. Now that we have seen a major reduction in maintenance requirements and engine downtime, we are totally sold on XPCL."

In another field test, Brent Towing of Greenville, Miss., documented a 7-percent fuel savings by using XPCL, representing annual savings of \$76,000.

Users also report that they don't worry as much about the quality of the fuel they use. They buy whatever is available, confident that the added XPCL will help protect the engine.

For free copies of the field study reports on the Willis Towing and Brent Towing experience with XPCL,

Circle 62 on Reader Service Card

# WITH TOMORROW

and pipelaying, ocean-bottom surveying and undersea seismic research.

The step from collision avoidance to full ship control was a logical and easy one for Sperry technology. Today, Sperry ship control systems, like Sperry collision avoidance systems, are the most advanced in the world.

Microprocessor-based and widely adaptable, Sperry bridge systems are designed to integrate today with tomorrow. That is, they anticipate your need to have ever-increasing numbers of shipboard functions integrated and displayed at one central source. Functions ranging from navigation and communications to ship control and management. In all these applications, the value of Sperry marine technology on the bridge shows up clearly on the bottom line—in improved fuel economy and safety, and lower operating costs.

### NAVIGATING THE FUTURE: NEW TECHNOLOGIES AND NEW SYSTEMS.

Besides Sperry's expertise in adapting and advancing marine technologies from one system application to another, new Sperry technologies and sys-

tems are continually evolving.

Take our development of baseband radar, for example. Simply stated, it's a breakthrough in sensing technology. A technology of the future.

The capability of baseband radar to

provide sensing accuracy of  $\pm$  one foot within a mile dramatically escalates Sperry's ability to provide a new generation of super-sensitive systems for precise offshore mooring and navigation in confined waterways.

Vessel traffic control is yet another area where Sperry technology is advancing the state-of-the-art, state-of-the-science and state-of-the-system.

Sperry's Vessel Traffic Systems (VTS) for harbor control incorporate advanced technology in computerization, communication, sensing, systems integration, command, control, display—and you name it. Once again, when you add it all up, vessel traffic surveillance is another area where Sperry systems promise big returns on the maritime industry's bottom line—in terms of port efficiency, safety and development.

### WHAT ELSE IS NEW AT SPERRY? ASK THE NAVY.

Before any Sperry marine technology ever reaches the commercial maritime industry,



you can be pretty certain it's proven itself with the world's navies.

For example, the same collision avoidance technology that goes into our commercial systems is helping U.S. Navy hydrofoils "fly" safely over the waves. And aboard the U.S. Coast Guard's new Medium Endurance

Cutters, our integrated ship control systems put all information needed for effective command and decision-making at the watch officer's fingertips.

### TECHNOLOGY BACKED BY TALENT, SYSTEMS SUPPORTED BY SERVICE.

The point is, when we apply a new technology or offer you a new system—no matter how advanced—it's been proven. And this can have a rewarding impact on your bottom line, too. That's because your ship doesn't risk being an expensive "test" bed for a "trial" case.

Sperry supports the shipping industry with more than 250 service facilities worldwide.

And when you arrive at a Sperry port, you'll find skilled personnel ready to provide you with total service support.

Listening, a simple idea that's taken us a long, long way. It can do the same for you and your ships.

Write to Sperry Corporation, Electronic Systems, Great Neck, NY 11020. Attention: Marketing Department.



WE UNDERSTAND HOW IMPORTANT IT IS TO LISTEN.

Top to bottom: Ship Control Helm Unit, Collision Avoidance Display, Control Room aboard Coast Guard Cutter.

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The Second Annual

# International Inland Waterways Conference & Trade Show

September 20–22, Louisville, Kentucky

The second annual International Inland Waterways Conference and Trade Show will be held September 20 through 22, 1984 at the Kentucky Fair and Exposition Center in Louisville, Kentucky. The three-day show will feature conferences and workshops with the general theme "Update 84: Success or Tragedy in the Waterway Industry." The show will be of special interest to waterways users; port and waterways builders; operators; maintainers; shippers; suppliers; shipbuilders; repair facility managers; shipyard man-

agers; and all who provide related services and products to the inland waterways industry.

**Joseph Farrell**, president of the American Waterways Operators, Inc.; **Leonard Silk** of the New York Times/Business Week Magazine and an authority on economics and finance; Lt. General (Ret.) **Dennis P. McAuliffe**; first chairman of the Panama Canal Commission; **Cees van der Burgt**, chief engineer-director of Holland's Noordzee Directorate; **Glover Wilkins**, retiring Administrator of the Tennessee-Tombigbee Water

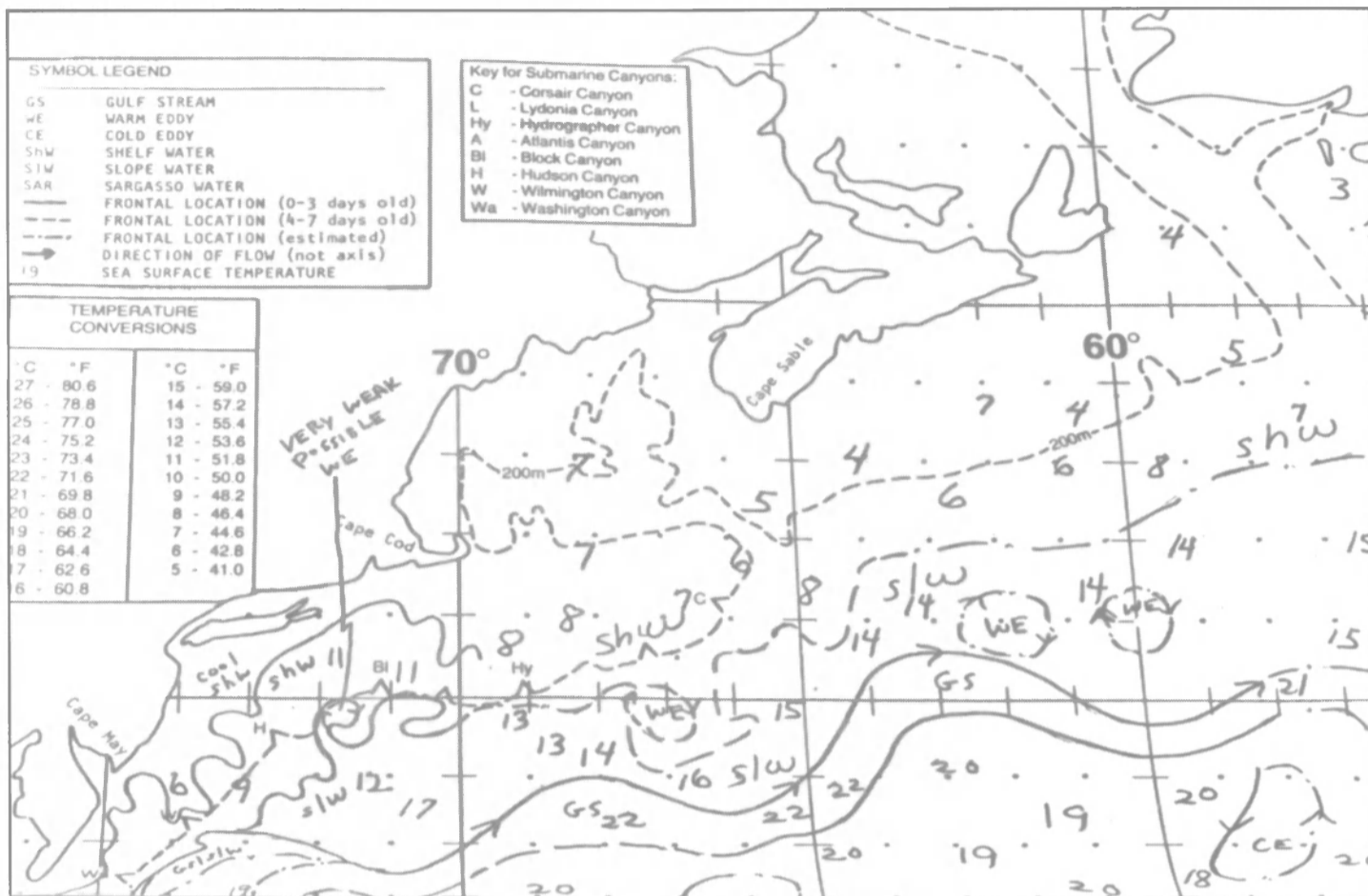
Development Authority; and several top officials of the United States Army Corps of Engineers are among the keynote speakers at the three day event.

A series of workshops headed up by industry authorities will deal with matters ranging from governmental regulations to efficient use of time and facilities in the waterways industry. Officials have taken special care to schedule general sessions and workshops without overlap so as to allow attendees to participate in any and all sessions.

To be called the Rivermen's Exchange, a series of workshops have been scheduled to provide immediate and important information to users of inland waterway systems.

**Intelligent Use of a Fleet**—This workshop will address the profitable use of barge fleets, taking into consideration safety, efficiency in movement and proper splitting of fleets. Proper use and planning is key to profitability as underlined in this important workshop.

(continued on page 40)



## ANNOUNCING THE BIGGEST REASON EVER TO OWN AN ALDEN MARINEFAX IN THE NORTHEAST.

At last, fishermen in North Atlantic waters can receive valuable fishing charts via HF radiofacsimile.

It's the information fishermen have been asking for: water temperature charts covering the major fisheries in the North Atlantic and detailed offshore weather including forecasts for upcoming periods of 12, 24, 36 and 48 hours plus an extended surface prognosis.

The charts are produced by the National Weather Service Forecast

Office in Boston, and broadcast twice a day by the U.S. Coast Guard from their transmitter site in Marshfield, Massachusetts. And it's on the air now with no user-fee.

These broadcasts cover the offshore waters north of 35 degrees north latitude, and west of 60 degrees west longitude. The signal is strong not only over the covered waters but

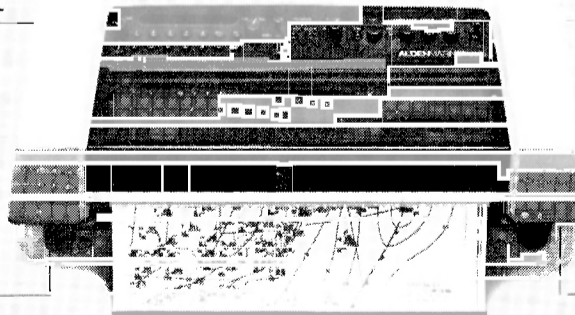
can be picked up by vessels and shore stations well beyond.

Fishermen will find the Oceanographic Analysis (shown above) extremely valuable in locating the most productive waters. This information alone can pay for an Alden Marinefax receiver in a single trip.

So, now is the time to look into getting an Alden Marinefax receiver. Among our four models is one perfectly suited to your vessel. And your fishing.

### Broadcast Schedule

Time EST	Chart
1230am	Surface weather
1240	12-hour forecast
1250	36-hour forecast
0100	Extended surface prognosis
1230pm	Surface weather
1240	24-hour forecast
1250	48-hour forecast
0100	Oceanographic analysis



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Address

City

State  Zip

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## ALDENMARINEFAX



(continued from page 38)

**Tennessee Tombigbee Waterway**—This workshop will deal with the practical aspects of navigating the Tennessee-Tombigbee Waterway, the nation's newest inland canal.

**Interfacing with Governmental Agencies**—How government agencies influence various aspects of river transportation will be addressed at this workshop. Included will be discussions pertaining to laws and personnel related to Coast Guard activities; port and in-route safety functions; conservation regulations and game warden responsibilities; permitting; and a variety of other waterways regulations.

**Selection of a Repair Yard**—This major workshop will deal extensively with considerations to be made in selecting a repair facility for barges and tows. Ways to in-

sure best repair results before, during and after the work is done will also be discussed.

More than 2,000 attendees are expected to visit the Second Annual International Inland Waterways Conference and Trade Show. Held in conjunction with the conferences and workshops, the trade show will be located in the exhibit area of the Kentucky Fair and Exposition Center.

Sponsors include the National Waterways Foundation, Waterways Journal, and the Inland Waterways Educational Services Inc. For further information, including a complete program of events, scheduled speakers, etc., contact **Jerry Harper**, International Inland Waterways Show, 818 West Main Street, Louisville, KY 40202. Telephone—(502) 587-8655.

### International Inland Waterways Show List of Exhibitors

Exhibitor	Booth(s)
AAMSTRAND ROPES	203
A C BRAKE COMPANY, INC.	213
ALFA-LAVAL INC.	510
ALLEN & HOSHALL INC.	410
AMERICAN AIR FILTER	717
AMERON PROTECTIVE COATINGS DIV.	712
ANSCHUETZ OF AMERICA	702
AQUA-SIGNAL BROWING MARINE	302
BLACKBURN MARINE INC.	311
BRAKE SUPPLY COMPANY	512-513
CAROLYN EQUIPMENT CO.	511
CENTRICO INC.	401
CHEM TECH INDUSTRIES	114
CLARKE GM DIESEL INC.	515
CRAWFORD FITTING COMPANY	310
DIXIE INDUSTRIES INC.	503

Exhibitor	Booth(s)
ELECTRO-MOTIVE DIV. OF GMC	115 & 201
ENGINE EFFICIENCY ASSOCIATES	610
ESGARD INC.	606
FARBOIL COMPANY	103
GENERAL ELECTRIC CO.	501 & 412
GENERAL SYSTEMS INC.	408
HILMAN ROLLERS	607
HOLIDAY TRAVEL INC.	609
INDIANA PORT COMMISSION	304
INLAND WATER PROPULSION SYS.	713
INDUSTRIAL SERVICE LAB	716
JEFFBOAT INC.	111
KEY HOUSTON	211
KOCH-ELLIS BARGE & SHIP SERVICE	502
KRUPP MAK DIESEL INC.	316
LOAD OUT TECHNOLOGY & SYS.	509
LOUISIANA DOCK COMPANY	212
LUBRITECH INTERNATIONAL CORP.	210
MACCAFERRI GABIONS INC.	404
M.A.N.—B & W DIESEL	713
MARINE BUILDERS	312
MARINE INDUSTRIES INC.	313
MARITIME REPORTER & ENG. NEWS	709-710
MAXON MARINE INDUSTRIES INC.	307
MEDART MARINE SUPPLY	407
MERCHANT OFFICERS PROTECTIVE SYN.	405
MID AMERICA MARINE	602
MIDLAND AFFILIATED COMPANY	713
MIRRLESS BLACKSTONE USA INC.	508
MONARK BOAT COMPANY	305 & 209
MULTIQUIP INC.	202
N.C. TWINE & CORDAGE INC.	714
NEESE INDUSTRIES INC.	208
OCEANA LTD/MUSTANG IND.	605
ORR SAFETY EQUIPMENT	701
PARKER HANNIFIN CORP.	215
PASS PETROLEUM INDUSTRIES	112
PORTER COATINGS/DIV. PORTER PAINT	703
POWERWAY INC.	204
QUINCY COMP/COLT INDUSTRIES	315
SW DIESEL GULF INC.	301
SCOTT EQUIPMENT CO.	603
SMITH & WEST MFG. INC.	309
SPERRY CORPORATION	601
SVERDRUP & PARCEL & ASSOC.	406
TDI ENGINE STARTERS INC.	314
TEXAS INSTRUMENTS INC.	608
TURBINE SPECIALTIES/GULF COAST	711
UNION CARBIDE CORP/CHEMBARGE OPER.	612
U.S. ARMY CORP OF ENGINEERS	514
VANGUARD SERVICES	214
VOLVO PENTA OF AMERICA	604
WALKER BOAT YARD	713
WARTSILA POWER INC.	403
WATERCOM	413
WAUKESHA ENGINE DIV.	113
S.S. WHITE INDUSTRIAL/PENWALT	402
WORTHINGTON DIV. MC GRAW EDISON	110



Sea King at work in the Port of Houston.

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skills and equipment necessary to provide the finest in general harbor towing services. You can rely on Suderman and Young.

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MARITIME REPORTER's editors asked exhibitors to tell us about the products and services they would be exhibiting at the International Inland Waterways Show in September. The following is based on replies received at press time.

**FOR MORE INFORMATION**

If you wish to receive additional information from any of the following exhibitors, circle the corresponding reader service number on the reader service card in the back of this issue.

**A-C BRAKE**

A-C Brake Company will be featuring products from Korody-Colyer, who manufactures replacement parts for Detroit Diesel engines and also has a marine gear in its product line. Also being featured will be the Sweeney torque multipliers and the OTC tools and equipment such as the engine stand and heavy-duty pullers.

A-C Brake is celebrating its 60th anniversary this year. Starting out primarily as a brake specialist, the company is presently in its fourth location, and covers the State of Kentucky and Southern Indiana. However, shipping products across the country is a common practice. Now carrying about 80 product lines, A-C Brake not only serves the trucking and construction industries, but has many replacement parts and equipment suitable for the marine industry.

Booth No. 213      Circle 11 on RSC

**ALFA-LAVAL**

Alfa-Laval Nirex Engineering recently introduced its new Series C freshwater distillers, which are said to be compact and easy to install. This, the manufacturer hopes, will convince shipping companies of the advantage of replacing conventional distillers with Nirex units while vessels undergo routine overhaul.

The new Series C unit is a streamlined version of Alfa-Laval Nirex's well-known JWP-36 distillers. The "C" in the type designation refers to the combined condenser cooling and ejector water system. This combined system lowers installation costs and delivers substantial economic benefits when installed in a centralized cooling system. Combining condenser cooling and ejection eliminates the cooling water connection from the cooling water system of the ship to the distiller.

Booth No. 510      Circle 79 on RSC

**AMERICAN AIR FILTER**

American Air Filter, an Allis-Chalmers company, will be featuring its new Amer-kleen cartridge

filter for locomotive compressors. The Amer-kleen 300 cylindrical cartridge filter represents a breakthrough in air filtration technology for locomotive air compressors. The cartridge filter, which is said to have as much as twice the dust holding capacity as competitive one-inch-thick filters, is designed to withstand the demanding requirements of air compressor applications.

For years the Amer-kleen cartridge filter has been used successfully to clean the engine intake air of high-horsepower diesel engines. The filtering efficiency, operating economics, and performance characteristics of this glass fiber filter media makes it ideally suited for cleaning the intake air on air compressors.

Features include low initial resistance, high dust holding capacity, filter media not effected by moisture or oily atmosphere, double layer of grading density media provides high filtering efficiency, ease of maintenance, and long service life.

Booth No. 717      Circle 12 on RSC

**AMERON**

Ameron Protective Coatings Division of Brea, Calif., provides a full line of high-performance marine primers and coatings developed and tested in marine research laboratories worldwide. They effectively protect vessels from corrosion and from animal and plant growths (bottoms) under dynamic and static conditions.

Products introduced recently include: Amercoat<sup>®</sup> 2438, an abrasive antifoulant; Amercoat 2161

and 2162, the most recent inorganic antifoulants and a bold advance into a new technology; and Amercoat 346, a high performance tank lining for marine chemical carriers.

Amerlock<sup>®</sup>/400 was introduced in 1983. This is a new, high-solids, self-priming topcoat specifically developed for the maintenance of steel surfaces.

Ameron introduced the inorganic primer Dimetecote<sup>®</sup> to the marine industry 40 years ago. Today, its revolutionary protection of steel surfaces in corrosive environments continues with a variety of formulations available to suit a wide range of corrosion-resistant marine applications.

Booth No. 712      Circle 80 on RSC

**ANSCHUETZ**

Anschuetz is not only a leading manufacturer of gyrocompasses for all classes and sizes of ships, but also produces gyro repeater compasses, bearing sights, automatic pilot systems for seagoing ships as well as riverboats, course and rudder position recorders, electrical steering systems, computer-controlled navigation systems, combined steering stands, gyrompass, horizon systems, heave meter equipment, rate-of-turn indicators, and electronic servo systems.

The newest Anschuetz products are the low-cost Gyrostar and Standard 14. These products have only recently been added to the company's family of gryocompasses. In addition, Anschuetz now offers a new low-cost Pilotstar autopilot in conjunction with the Gyrostar.

Also new is the low-cost, easy-to-install Compilot 9 steering console—of special interest to owners of workboats, fishing vessels, and yachts. Also of interest is the new SEACOM satellite communications terminal, now marketed by Anschuetz worldwide.

Booth No. 702      Circle 81 on RSC

**AQUA-SIGNAL**

Aqua-Signal/Browning Marine will display a new wireless, remote control unit used to operate barge lights. This unit is small and self-contained, and gives on/off control of port, starboard, stern, and anchor lights.

Also to be shown are the Aqua-Signal range of navigation lights, some with photoelectric cells to switch off during daylight hours, and the Aqua-Signal line of fluorescent lighting for decks and cabins.

Booth No. 302      Circle 13 on RSC

**CAROLYN EQUIPMENT**

Carolyn Equipment Company (CEC) is a general/industrial contractor and steel erector with full field and travel capabilities. It specializes in building bulk liquid storage tanks with capacities from 50,000 to five million gallons.

These tanks are of fully welded steel construction, field erected and each tank is designed specifically for its end use. CEC's capabilities also include river lines, pipe bridges, floating barge and crane repair services, heavy-gauge duct- (continued on page 42)

**SERVICE**  
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We have the equipment and the trained professionals to make your repairs fast.

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**NATIONAL MARINE SERVICE**  
INCORPORATED  
One of the NICOR basic energy companies

## Carolyn Equipment

(continued from page 41)

ing, and miscellaneous steel erection.

CEC's booth will exhibit a pictorial display of past and present jobs, and their personnel will be on hand to answer questions from engineering specifications to cost analysis of tank and terminal storage requirements.

Booth No. 511

Circle 14 on RSC

## CENTRICO

Centrico, Inc. of Northvale, N.J., will display the Westfalia OSA 7 automatic oil purifying centrifuge and the Centri-Pack self-contained oil-purifying module.

The OSA 7 model incorporates self-cleaning, disc-type bowls designed for optimum oil/water separation even when feed densities vary. Solids are ejected at intermittent intervals.

The Centri-Pack is a ready-to-go, completely equipped module mounted on a sturdy base with all the necessary components built in—one or more Westfalia oil purifying centrifuges plus piping, wiring, motors, pumps, heaters, strainers, timing units, and controls.

Booth No. 401

Circle 15 on RSC

## CHEMBARGE

Chembarge is a newly formed unit within the inland marine transportation area of Union Carbide Corporation. Its purpose is to offer the services of its fleet of more than 150 chemical barges, including many with specialized features, to shippers of alcohols and other solvents, organic acids, benzene and related compounds, propylene oxide, and liquefied gases such as butane, propane, and propylene.

Chembarge equipment, monitored from Charleston, W.Va., is offered on a chartering, affreightment, or towing basis on the Gulf Intracoastal Waterway from Corpus Christi, Texas, to the Mississippi River; up the Mississippi to the Illinois Waterway to Chicago; and to Charleston via the Ohio and Kanawha Rivers.

Booth No. 612

Circle 16 on RSC

## CRAWFORD FITTING

Crawford Fitting Company will exhibit the complete line of Swagelok® tube fittings in sizes for 1/16-inch to 2-inch outside diameter. In addition, Swagelok quick-connects, Cajon vacuum fittings and couplings, and several lines of Whitey and Nupro valves will be featured.

Many new products will be on display, including a severe-service, on/off valve from Whitey Company. It is rated to 10,000 psi and meets ANSI B-16.34 Class

4500. A union bonnet design and blowout-proof stem provide added safety, while 316 stainless steel offers corrosion resistance. The valve's non-rotating Stellite ball tip allows repetitive shut-off without galling. It is available with 1/4-inch and 1/2-inch end connections.

Booth No. 310

Circle 17 on RSC

## ELECTRO-MOTIVE

Rating increases of 10 percent, resulting from technological improvements, have been announced by Electro-Motive Division of General Motors. The leading supplier of diesel engines to the domestic marine market says the 645FB engine provides a five percent improvement in fuel efficiency over its 645EB series of engines.

The product advances incorporated into the 645 series enables EMD to offer ratings for propulsion engines ranging from 1,050 bhp at 900 rpm for the Roots blower engine model 8-645E6 to 4,000 bhp at 900 rpm for the turbocharged model 20-645F7B engine.

In the EMD marine generator sets, power output ranges from 570 kw, 50 Hz at 750 rpm in the Roots blower engine model 8-645E6 to 2,865 kw, 60 Hz at 900 rpm for the turbocharged 20-645F7B engine.

Booth No. 115 & 201

Circle 82 on RSC

## ENGINE EFFICIENCY

Engine Efficiency Associates will feature some of its new monitor, alarm, and control systems.

The EZ 1000 monitor, alarm, and control system is said to reduce installation cost by 70 percent, which typically costs as much or more than the system itself. This system is microprocessor-based, and can start and stop the engines, switch generators, and can control and monitor up to 5,000 points, all from the bridge on just two single 18-gauge wires. The system can read analog and digital signals; readouts are available in liquid crystal, color CRT, or both. A printer logs time of alarm and date, as well as time it was acknowledged and finally cleared. It also records machinery running hours automatically, which is available on the printer at any time.

The Microwatch is a microprocessor-based, 32-channel alarm system. It allows alarms to be programmed by the user on an internal keyboard.

The FM 1000 is a microprocessor-based fuel management system, said to have one-tenth of a gallon accuracy. It indicates the fastest efficient speed and most efficient speed.

Booth No. 610

Circle 18 on RSC

## ESGARD

Esgard, Inc. of Lafayette, La., manufactures bio-compatible, vegetable-based corrosion coatings, Bio-Gel and Bio-Float, which are said to offer long life and economical, durable protection of wet and dry internal areas in all types of marine vessels. Common features of the Bio products include: absence of solvents or petroleum products, 450 F flashpoint, non-flammability, and resistance to a wide range of acids, alcohols, and hydrocarbons.

Other products include self-priming enamels, wire rope and cable lubricants, removable inventory storage coatings, flange protection systems, and long-term tubular coatings.

Booth No. 606

Circle 83 on RSC

## FARBOIL

Farboil Company intends to emphasize two products in its display—Wetsall and Ballastite. Wetsall is an anticorrosive primer formulated to be applied over damp and rusty surfaces. Because Wetsall primers have low surface tension and penetrating properties, moisture and air are displaced and tightly adhering rust is penetrated. Rust penetration is so complete and effective that the rust becomes an integral part of the coating. This primer eliminates the need for costly sandblasting and thorough surface preparation.

Ballastite coatings, which are inorganic-organic complexes that are platelet and polar, insure good anticorrosive properties and a minimum of water transmission. They are provided in both a sprayable and flotation grade, and excellent adhesion is obtained to rust and mill scale.

Booth No. 103

Circle 19 on RSC

## GENERAL ELECTRIC

General Electric Diesel Power Products will display a cutaway cross section of the fuel-efficient, 4-stroke cycle GE marine diesel engine. The working cutaway shows GE's unitized cylinders, one-piece alloy cast iron frame, high-efficiency stainless steel manifold, forged steel cylinder heads, and articulated rod construction.

The cutaway engine also demonstrates additional features for reliable operation and ease of maintenance. Engine components such as the three-ring cutback crown piston, grooveless main bearings, and cylinder head with welded-in valve seats will also be on display.

General Electric's customer training facility, 48 hours or free parts commitment, and customer service support capabilities will also be represented at the exhibit.

Booth Nos. 412 & 501

Circle 20 on RSC

## HILMAN

Hilman Incorporated will be exhibiting its extensive line of rollers that are used to move barges, supply vessels, and giant modules. Now the conveyance means of many shipbuilders, the rollers are frequently used in the launching stage as well, and can be supplied with stainless steel on the critical parts of the roller chain to prevent corrosion.

All Hilman rollers incorporate the endless chain principle, whereby the rolls rotate about the center plate of the frame. Taking the place of an axle, this creates a faster, smoother, more efficient way of moving heavy weights than any other surface moving method.

The Hilman roller is a low-profile device that has a low coefficient of friction, thus can be rolled with a minimum of force. There are no bearings that would require maintenance; therefore, under less than ideal conditions, the rollers are virtually free of maintenance. This coupled with the high durability, makes their life expectancy extremely favorable.

Booth No. 607

Circle 21 on RSC

## INDIANA PORT COMMISSION

The Indiana Port Commission operates two public port facilities on the Ohio River—Southwind Maritime Centre and Clark Maritime Centre.

Southwind, at Mt. Vernon, Ind., continues its pattern of growth with 1983 tonnage figures of 1,877,122 up 12 percent over 1982. Dominant cargoes handled at this facility were coal, beans, corn, wheat, grain by-product, pipe, and fertilizer. Southwind has more than 600 acres available for lease, with full road and rail connections.

Clark Maritime Centre at Jeffersonville is Indiana's newest port complex, scheduled to come on-line in the fall of this year. With excellent market geography and rail access, interest in Clark from potential maritime and industrial tenants has been extraordinary.

Booth No. 304

Circle 22 on RSC

## ISL

ISL (Industrial Service Laboratories) Corporation of St. Louis will be displaying electronic test equipment and controls. The instrumentation will include temperature monitors and controls, portable temperature indicators, diesel engine thermocouples, tachometer generators, tachometer indicators, hand-held tachometers, portable voltmeters, ammeters, ohmmeters, calibrators and panel meters.

ISL is involved in the sale, service, and calibration of these instruments and many more. A val-

uable 320-page instrumentation handbook will be given to all interested show attendees. Technical personnel will be at the stand to discuss particular applications.

Booth No. 716

Circle 23 on RSC

### JEFFBOAT

As America's largest inland shipbuilder, Jeffboat, Incorporated of Jeffersonville, Ind., has not let a depressed barge and towboat market hamper its sales efforts in the marine industry during 1984. By capitalizing on the yard's capabilities and skilled work force, Jeffboat has successfully pursued prospects in the non-traditional marine market. The yard has been awarded contracts to build another 207-foot oceangoing cruise ship, a 300-foot dinner/theater showboat for Opryland USA, seven U.S. Navy side-loadable warping tugs, a coastal oil tanker, and lock bulkheads for the U.S. Army Corps of Engineers.

This diversity typifies Jeffboat's management philosophy, which is full utilization of plant and personnel. The yard consists of 90 acres along the Ohio River, and the employment level is approximately 800. The Marine Repair Division maintains four drydocks, the largest being 3,000 tons, and a 50-ton-capacity floating crane.

Recent major capital investments include an additional automatic blast and paint steel processing unit, a 15-ton magnetic steel-handling gantry crane, and a new 40-foot shaft lathe that expands Jeffboat's machine shop capabilities.

Booth No. 111

Circle 24 on RSC

### KOCH-ELLIS

Koch-Ellis Barge and Ship Service recently announced the completion of a totally new RO/RO facility created to handle the increasing demand for cleaning, gas freeing and light repairs for all standard types of containers in both 20- and 40-foot lengths. Koch-Ellis also handles various sized tank trailers.

The facility is large enough to clean from 15 to 20 units a day, depending on size and needed cleaning procedures, and can work on as many as four units at one time. Koch-Ellis is EPA certified and is capable of handling most varieties of bulk liquid cargo.

Koch-Ellis's location, at mile 104 of the Mississippi River, or 2012 River Road, in Marrero, La., is easily accessible from the nearby New Orleans harbor area.

Booth No. 502

Circle 84 on RSC

### LOAD-OUT TECHNOLOGY

Load-Out Technology & Systems, Inc. announces a breakthrough in barge loading, all the way from hand operation, in use since Noah's time, to operator-initiated computer control.

Circle 347 on Reader Service Card ►

The firm offers a patented automatic barge loadout system, using digital signals and computer-controlled functions to automatically direct the action of the overhead chute and dockside winch.

The control equipment will load barges perfectly level in both the port-to-starboard and fore-to-aft planes, to a predetermined draft depth, eliminating the need for overhead control towers, deck-

hands, experienced loadout personnel, and more.

Booth No. 509

Circle 25 on RSC

### M.A.N.-B&W

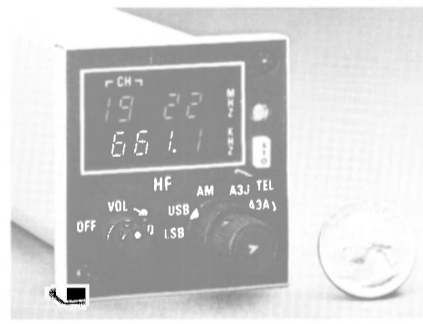
The new four-stroke, heavy-fuel L58/64 engine will be produced as in-line units with six, seven, eight, and nine cylinders, providing a power range (mcr) from 9,900 to 14,850 bhp.

During the development of the L58/64 engine, particular emphasis was placed on the following: low fuel consumption; high reliability in unrestricted operation; simple and easy maintenance; and adaptability to varying operating and environmental conditions as well as fuel ignition qualities.

(continued on page 44)



## IT TAKES A SMART RADIO TO MAKE HF/SSB COMMUNICATIONS EASY.



HF/SSB communications can put you in touch with a station thousands of miles from your transmitter. But with propagation difficulties and outdated radio designs to deal with, it's no secret that all this often takes more effort than it should.

Enter King Radio with the KMC 95 — the first HF/SSB unit designed from the ground up to take advantage of the new technology which has come out of the microcomputer revolution.

King's design team had two objectives. One, to create a user friendly unit that would make the life of the HF radio operator easy. And two, create a reliable unit that would work in any conceivable environment.

This dual objective was achieved with the use of advanced computers on chips of silicon. In fact, the KMC 95 has two computers on chips and five memory chips as well. This creates a "smart" unit which performs many of the duties previously handled by the radio operator (for example, remembering frequencies). Three different optional remote control units are also "smart", and are therefore fully capable of operating all features of the transceiver.

Here are some of the ways you benefit from King's use of the latest technology:

#### Operator Convenience

- All 176 ITU Radiotelephone channel frequencies are stored permanently in non-volatile memory.
- The memory also provides for storage of 99 user programmable semi-duplex channels. (This is standard with the KMC 95, not an option which costs extra as with some other radios.)
- Keyboard entry provides easy access to 280,000 frequencies in the 2 to 30 MHz range.

#### Reliability

- Extensive use of microcomputers reduces parts count to reduce failures.
- Top quality electronic components used throughout the radio.
- Zinc diecast chassis provides durability and keeps the component parts of the radio from interfering with one another electrically.

#### Installation Flexibility

- Three optional remotes come in different sizes to suit any mounting requirement. The smallest remote has a front panel only 2-1/4 inches square.
  - Two fully automatic antenna coupler systems can combine with practically any size or type antenna you might prefer.
  - Private listening available with an optional telephone headset.
- All the convenience and reliability adds up to one thing: an HF/SSB radio that is easier to use than you ever imagined possible, and a radio you can depend on when you need it most.

For more information on how the KMC 95 can make your life easier when it comes to long range communications, contact: Sales Manager, KMC 95 King Radio Corporation, 400 North Rogers Road, Olathe, Kansas 66062 • (913) 782-0400 • Telex WUD (0) 4-2299 Cable: KINGRAD

**KING**

Tomorrow's Electronics Today



## MAN-B&W

(continued from page 43)

In addition to high operating efficiency, the 58/64 engines will provide excellent waste heat recovery opportunities. Exhaust gas temperature downstream of the turbocharger will be 660 F over a broad operating range. In a number of applications, this means that the at-sea electrical load can be produced by the waste heat recovery system instead of an auxiliary generator, resulting in additional fuel savings.

Booth No. 713

Circle 85 on RSC

## MACCAFERRI

Gabions, stone-filled baskets, were used some 2,200 years ago in China to control rivers for navigation and irrigation. Then, wickerwork baskets, Zhulong, were used where now zinc-coated woven steel wire is employed, additionally protected with PVC when used in corrosive conditions.

On the Mississippi, a major gabion-lined spillway at the Old River Control Structure helps to maintain river levels at the desired heights. For that structure, thousands of tons of stone were transported long distances entirely by barge.

Gabions have many uses on inland waterways worldwide, from canals of some age such as England's Manchester Ship Canal to smaller projects such as the Cape May Canal in New Jersey, a vital link in the coastal waterway system.

Whether the structure is a river wall, a revetment, a yacht marina,

or even a hovercraft ramp, Maccaferri can supply the proper gabions.

Booth No. 404

Circle 26 on RSC

## MEDART MARINE

Medart Marine Supply will feature a wide variety of products that the company distributes, including Nabrico winches and castings, Perko running lights, Cal-June flotation devices, ACR lights, Wellington Puritan and Crowe rope, Stearns lifevests, Ray Jeff hand radios, Morse Pushnees, and Husky trash pumps.

Booth No. 407

Circle 27 on RSC

## MIRPLEES BLACKSTONE

Mirrlees Blackstone (USA) Inc., a Hawker Siddeley company, will be exhibiting at the Inland Waterways Show for the first time this year. Mirrlees manufactures diesel engines for marine and industrial applications in a power range from 180 to 12,000 bhp in a number of model types.

The company's exhibit will emphasize engine models most suited for new construction and retrofit of medium- to high-horsepower river towboats. These models include the ESL MK2 range of up to 1,620 bhp, and the K Major MK3 line of engines with ratings up to 12,000 bhp.

The low specific fuel consumption of this range of engines and their long experience and capability to burn residual fuels will be highlighted at the Mirrlees exhibit.

Booth No. 508

Circle 28 on RSC

## MONARK BOAT

MonArk Boat Company of Mon-

ticello, Ark., a leading producer of all-welded aluminum workboats, will be displaying new products, designs, and models.

A typical MonArk design is the 32-foot harbor service launch delivered recently to Zuccala Harbor Service in Boynton Beach, Fla. This boat is being used as an aid to navigation and service launch in the Ft. Lauderdale area.

Booth Nos. 209 & 305

Circle 29 on RSC

## NEESE INDUSTRIES

Neese will exhibit a complete line of foul weather gear, designed to give maximum protection against not only the elements, but also most marine and industrial applications. Garments are sized for comfort and mobility when worn over cold weather wear.

All garments are guaranteed for one full year from date of purchase against defects in materials and workmanship, or return to Neese for replacement.

Booth No. 208

Circle 30 on RSC

## NORTH CAROLINA TWINE

North Carolina Twine & Cordage, Inc. is a manufacturer of polypropylene and nylon ropes for marine and industrial applications. High-quality, three-strand twisted ropes and leaving line, as well as braided ropes are available. All polypropylene rope is made from monofilament yarns manufactured at the company's plant in Mt. Airy, N.C.

Booth No. 714

Circle 31 on RSC

## PORTER COATINGS

Porter Coatings Division of Por-

ter Paint Company will display its high-performance protective coatings, including Zinc-Lock® and the Wintercure/Fast Dry Systems. Technical personnel will be on hand to discuss specific corrosion problems and to recommend coatings systems.

Booth No. 703

Circle 32 on RSC

## QUINCY COMPRESSOR

Quincy Compressor Division of Colt Industries will display a base-mounted Model D 325, 5-horsepower compressor.

Quincy two-stage compressors are specified for shipboard use by the U.S. Government, including the Navy and Coast Guard. The specific features are pressure lubrication, high-pressure (up to 500 psig) capability, air-cooled, simplicity of maintenance, low oil level protection, oversize Swedish steel disc valves, etc.

Booth No. 315

Circle 33 on RSC

## SMITH AND WEST

Smith and West Manufacturing will feature its Touch and Go Safety Systems, which were designed by a licensed pilot for use on the inland waterways. This system eliminates the need to place men in hazardous locations should an emergency require turning the boat loose. It is designed to release simply by depressing switches in the pilothouse. Timing is often a crucial aspect in preventing boat damage, and this system allows the pilot to retain control of a tow as long as possible.

Releasing the face wires not only eliminates the cost of replacing them but also allows the boat to reface immediately, which can be critical to preventing barge damage. The system incorporates a release mechanism for each face wire as well as separate controls, thus eliminating the possibility of a complete malfunction. The release mechanism can also be operated manually in case of electrical failure.

Booth No. 309

Circle 34 on RSC

## SPERRY

Sperry Corporation of Great Neck, N.Y., one of the world's largest commercial maritime suppliers of navigation and guidance systems, has recently introduced a new line of vessel traffic surveillance (VTS) systems using a new computer-controlled console that provides full-color graphics, a touch-sensitive screen for control functions, and harbor data management capabilities.

Sperry has also developed new communications links to send and receive data from remote radar sites using low-cost, voice-quality cable or microwave hookups.

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a full line of Foam-  
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INDUSTRIES

Marine Products Division

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Sperry has also delivered and installed a number of new SRP-2000 ship control systems, which combine both ship control and navigation functions at a single console.

The company has also become involved recently in the development, installation, and servicing of complete electronics systems for commercial ships.

Booth No. 601

Circle 86 on RSC

### SVERDUP & PARCEL

Sverdup & Parcel and Associates, Inc. is a multi-disciplined firm providing engineering, architectural, planning, and construction management services to developers along the inland waterways. These services include preparation of economic and market feasibility studies, master plan developments, preparation of designs and construction documents, and construction engineering services of maritime facilities.

Where time and cost schedules are critical, design/build services are available. The firm also per-

forms specialized investigations of damage to facilities, identifying necessary repairs and costs for restoration to operational condition. The company's St. Louis and Nashville offices are in the heart of the inland waterway system to provide the full range of specialized engineering services necessary for successful inland waterway facility developments.

Booth No. 406

Circle 35 on RSC

### TEXAS INSTRUMENTS

Texas Instruments of Dallas recently introduced the TI 9900 I Loran C navigator, a complete Loran C-based navigation system with the performance, features and accuracy of the popular T-9900, plus an exceptional array of additional capabilities.

The TI 9900 II features 100 waypoints that can be entered at time differences or latitude/longitude coordinates. Trips of up to 50 legs can be stored, with reverse capabilities. A unique trip planning function allows the user to com-

pute course and distance between two waypoints without receiving a Loran signal. Additional capabilities of the system include automatic waypoint sequencing and the display of range and bearing to the next waypoint as each one is passed.

Booth No. 608

Circle 87 on RSC

### TURBINE SPECIALTIES

The exhibit of Turbine Specialties/Gulf Coast Division will feature recent plant expansion and capabilities in the overhaul and remanufacturing of Electro-Motive Division turbochargers, as well as most other makes of large marine and industrial diesel engine turbochargers. The company specializes in the repair and rebuilding of American- and foreign-made turbochargers—its only business.

Booth No. 711

Circle 36 on RSC

### VOLVO PENTA

Volvo Penta of America, Rockleigh, N.J., has introduced new configurations of its six-cylinder

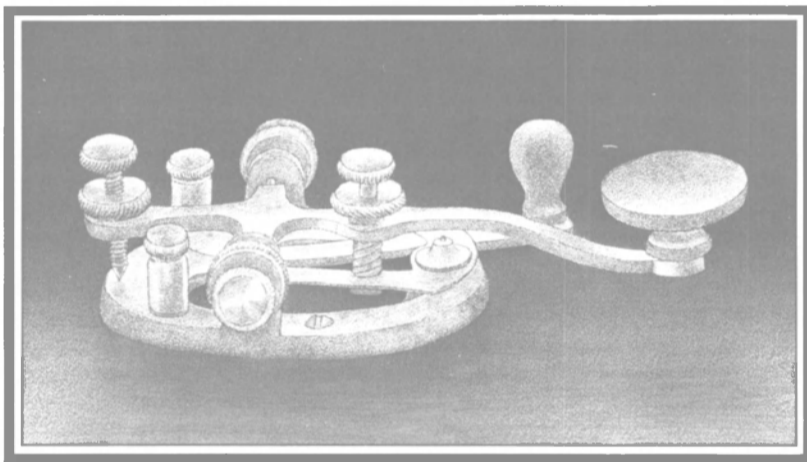
diesel engines. The new turbocharged/aftercooled version of the 5.48-liter six-cylinder engine is designated TAMD60C. Horsepower has been raised to 250 bhp at 2,500 rpm for the light-duty version, and 210 bhp at 2,500 for the medium-duty model. New this year is a continuous output rating of 177 bhp at 2,200 rpm.

The latest configuration of Volvo's 6.73-liter, six-cylinder turbo/aftercooled engine is the TAMD70E, rated 300 bhp at 2,500 rpm. Also available is an intermediate rating of 270 bhp at 2,500 rpm, or 211 continuous bhp at 2,000 rpm. Both the TAMD60 and 70 are available with heat exchangers or in keel-cooled modes.

Volvo's largest engine, the turbocharged and aftercooled 11.9-liter TAMD121C, has had a series of modifications.

New pistons, liners, connecting rods, and turbocharger all contribute to the 121C's light-duty rating of 408 bhp at 2,000 rpm. Medium- and continuous-duty ratings are

(continued on page 46)



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Nav-Com has the background and experience to develop complete systems that can include every level of communications necessary for today's vessel management needs. Electronic telephone systems, complete with hailing and paging. Satellite communications. Computer work stations such as our own Busiship™ system. All of these elements can be integrated into a complete package, or individual systems can be provided.

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Put flexible reach rods on remote valves.

## And save more than half the time and costs of installing rigid rods.

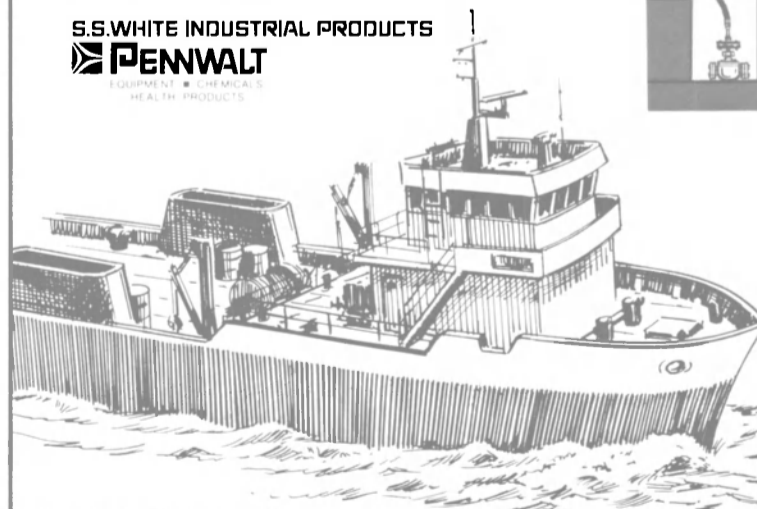
Use S.S. WHITE Industrial™ Heavy Duty Flexible Reach Rods for safe remote control of valves in hazardous or inaccessible areas. Install them for smooth manual operation of valves from distances up to 40 feet away or more. And enjoy new design freedom. Ease of installation. Less maintenance. Safe, reliable operation. And big savings.

Route these flexible rods around curves and over or under obstacles. They require no additional expensive operating gear such as universal joints or right angle gear boxes. Flexible reach rods absorb shock and vibration and stand up to abrasion, abuse and corrosion. They're pre-lubricated, and the only maintenance required is once-a-month operation.

S. S. WHITE Industrial Heavy Duty Flexible Reach Rods are available in standard lengths from 3 to 36 feet and in three sizes to fit valves from 3/4" to 16" in diameter. Other lengths are available on request.

For flexible "heavy duty" reach rods see your local authorized S. S. WHITE distributor. Or contact S. S. WHITE Industrial Products, 151 Old New Brunswick Road, Piscataway, NJ 08854, or call 201-752-8300. TELEX: 833-477; FAX: 201-752-8315.

S.S. WHITE INDUSTRIAL PRODUCTS  
**PENWALT**  
EQUIPMENT • CHEMICALS  
HEALTH PRODUCTS



## Volvo Penta

(continued from page 45)

387 at 1,900 rpm and 367 bhp at 1,800 rpm. The engine uses 159 grams of fuel per bhp hour at the continuous rating.

Booth No. 604

Circle 88 on RSC

## WATERCOM

Watercom—Waterway Communications Systems, Inc.—is a fully automatic telephone system including management information services for traffic on the Mississippi, Ohio, and Illinois Rivers and many of their major tributaries, and on the Gulf Intracoastal Waterway.

It is a private radiotelephone service that provides fast, reliable, direct two-way communications between company and vessel, vessel and shore, and vessel-to-vessel.

Booth No. 413

Circle 37 on RSC

## WAUKESHA ENGINE

Waukesha Engine Division of Dresser Industries will feature displays and information of its new AT25 high-output, medium-speed diesel series. Capable of operating on economical heavy fuel, these 250-mm bore engines in V-12 and V-16 models and in-line 6- and 8-cylinder configurations feature rugged, compact construction, good access to components for ease of service, low fuel consumption, and maximum interchangeability of parts between models for easier maintenance and smaller parts inventories.

Available for ship's propulsion and electrical service, the AT25 line is rated from 1,800 to 4,800 bhp at 1,000 rpm on distillate fuel, 1,620 to 4,320 bhp at 1,000 rpm on heavy fuel, and up to 3,360 kw electric.

Also included in Waukesha's display will be information on the Waukesha/Scania line of efficient, dependable marine diesels. This line is made up of four in-line 6-cylinder versions and two V-8 models, two of which are available in turbocharged/intercooled configurations.

Booth No. 113

Circle 38 on RSC

## WARTSILA

Wartsila Diesel of Finland, one of the world's leading manufacturers of medium-speed diesel engines, will feature its "real" heavy fuel engine types Vasa 32 and Vasa 22HF.

The Vasa 32, the largest of the Wartsila heavy fuel engines, is one of the most popular medium-speed propulsion and auxiliary diesels. It is manufactured in seven different cylinder versions—four V-form and three in-line designs—covering the output range from 2,010 to 9,180 bhp at 720-800 rpm.

The Vasa 22HF is the smallest heavy fuel engine on the market. Its output range is 720-3,480 bhp

at 900-1,200 rpm, provided by two V-form and three in-line cylinder versions. Long-term service experience with the Wartsila heavy fuel engines has confirmed that they are capable of burning the lowest fuel qualities of the future. Today the entire Wartsila heavy fuel engine range is released for 7000 sec. Redwood 1 at 100 F.

Booth No. 403

Circle 39 on RSC

## S.S. WHITE

S.S. White Industrial™ Products will feature its heavy-duty, flexible reach rods, which provide for remote valve control in hard-to-reach, inaccessible, hazardous, or unsafe areas. Installation is quick and easy, even though the route to follow may be extremely complex, with multiple bends.

The U.S. Coast Guard has accepted flexible reach rods for use in ballast, oil, and fuel tanks. In addition, the American Bureau of Shipping has found reach rods suitable for use in all piping systems and tanks on vessels classed by the Bureau. Lloyd's Register of Shipping has also approved the use of S.S. White flexible reach rods for controlling forepeak suction valves on all vessels under its classification.

Booth No. 402

Circle 40 on RSC

## Worthington

Worthington's redesigned line of general-purpose end-suction pumps, with capacities to 1,500 gpm, is covered in a new brochure.

The cast-iron pumps, designated as the D-800 line, are available in 19 sizes, frame-mounted or close-coupled. The pumps are designed for minimum operating and maintenance costs.

The D-800 has applications in all industries, including process, power generation, and HVAC systems. Liquids pumped include water, solvents, light oils, noncorrosive chemicals, coolants, and brine. The pumps will deliver liquid to heads of 400 feet (100 meters).

Booth No. 110

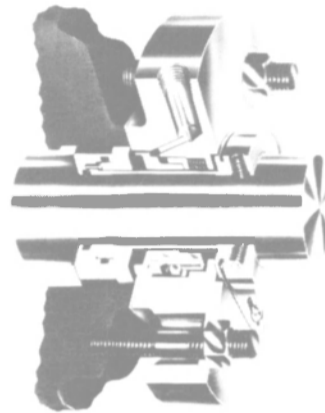
Circle 89 on RSC

## CDI Marine Awarded \$1.5-Million Navy Order

CDI Marine Company, headquartered in Jacksonville, Fla. was recently awarded a \$1,503,273 two-year contract from the Navy to furnish engineering and technical services in support of main and auxiliary gas, turbine, diesel and power transmission and ancillary equipment. The project will be managed at CDI Marine Company's Philadelphia area facility located in Voorhees, N.J.

## Literature Available On New Mechanical Pump Seals From Drew

Drew Ameroid® Marine has introduced a new design series of replacement seals to fit most standard ship pumps. The AMERSEAL® 10 mechanical seals are available through nearly all major ports worldwide for fast, economical installation. They are designed for versatility and reliability in fit and are stocked in the most popular sizes to provide fast service.



AMERSEAL 10, pictured above, is cartridge-mounted with a universal gland for easy installation.

AMERSEAL 10 mechanical seals are cartridge-mounted and preset at the factory so that upon installation common misalignment errors are eliminated. They are non-fretting and self-squaring. The universal design of the gland plate allows the seal to adjust to fit the bolt circle of existing pumps, eliminating the need for machining special hardware. Pumps with identical shaft sleeve diameters, but different bolt circles, are therefore accommodated with one seal.

AMERSEAL 10 is hydraulically balanced for use in high or low pressures. During service, hydraulic pressure activates a piston device, forcing the springs into their drilled recesses. This seals off the springs from clogging deposits, allows the hydraulic pressure to align the stationary face to shaft center-line, and eliminates spring fatigue. Since the seal remains stationary while the shaft rotates, it is not subject to stress of centrifugal forces.

Made of the highest quality materials, AMERSEAL 10 is built for endurance and, because of the design, repairs are easily accomplished at minimal cost, using a repair kit.

Seals are pressure rated to 23.8 kg/cm<sup>2</sup> and temperature rated to 204 degrees C. Sizes are inventoried to meet all popular pump shaft measurements, from shaft diameters of 30 mm to 65 mm and 1 1/8 inches to 2 9/16 inches.

For free literature and further information,

Circle 45 on Reader Service Card

## Midland Enterprises' President Geary Speaks Against CSX/ACBL Merger



J.D. Geary

"I'm a lot more optimistic about winning today than I was 10 months ago," J.D. Geary said, referring to the outcome of the CSX/ACBL merger case. Mr. Geary, president, Midland Enterprises, addressed the Cincinnati Coal Exchange on the merger topic at the Queen City Club.

CSX, a major railroad holding company, acquired Texas Gas, owner and operator of ACBL, last year. Mr. Geary reminded the audience that the Panama Canal Act of 1912 prohibits railroads from buying water carriers unless it can be shown the combination will not reduce competition and is in the public interest. Based upon this, Mr. Geary said he believes the ICC should focus on three key issues surrounding the acquisition. First, is there competition between CSX and ACBL? Second, will railroad ownership lessen the competition? Finally, will the acquisition be in the public interest?

Mr. Geary asserted there is definitely competition between CSX and ACBL. Referring to this competition he stated, "We got them to admit under cross examination that there is competition between ACBL and the railroads."

"The merger will, in fact, lessen competition," he continued. "When you take the second largest railroad, the largest mover of coal, merging with one of the largest, if not the largest barge line, you have significantly affected competition. You've lessened it. And there isn't any public interest I can find that would suggest the ICC should approve it."

Mr. Geary observed that if the merger is approved, the inland waterways industry will be drastically affected. "I would predict that in a relatively short time—and I don't know whether that means five years or 20—certainly our industry as we know it today will have been affected," he said. "And it will shrink."

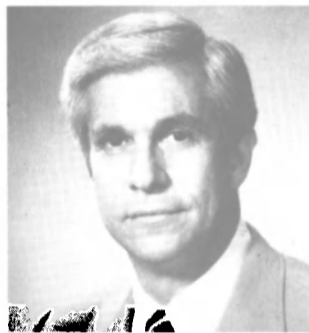
Speaking on the intermodal issue, he said there are no benefits today that cannot be obtained under the present system. "There's nothing they propose to do that can't be done under the present situation we operate under," he



said. "They don't have to own a barge line."

In closing, Mr. Geary said he did not want to be too optimistic because "that's usually when you get fooled." He mentioned that a final decision on the oral arguments recently held before the ICC should be issued in late August. Emphasizing the importance of the decision, he referred to the merger as a "landmark case" and concluded by saying, "I hope we prevail."

### Riley-Beaird Promotes James E. Oliver



James E. Oliver

James E. Oliver has been promoted to manager, Maxium® Silencer Products. Starting with Riley-Beaird in 1960, his Maximum experience has been as sales engineer, applications engineer, product manager, and senior engineer, special projects. His new responsibilities include marketing and engineering of all Maxium Silencer Products. These include industrial silencers, catalytic converters, and heat recovery equipment.

He has a Bachelor of Science degree from Louisiana State University.

### Beardsley Appointed Assistant Manager At Moran Towing

David A. Beardsley has been appointed assistant manager of the construction and repair department of Moran Towing and Transportation Co., Inc. by Thomas E. Moran, president of the company.

Mr. Beardsley's appointment became effective on June 25, and he will report to the manager of construction and repair, W. Anthony Watt.

A 1974 graduate of the New York State Maritime College at Fort Schuyler in the Bronx, with a Bachelor of Engineering degree and a major in marine engineering, Mr. Beardsley holds a U.S. Coast Guard license as chief engineer, motor vessels, and a third assistant engineer, steam vessels. He has sailed as chief engineer with Circle Line of New York, and on Exxon Corporation's tugboats.

His first assignment with Moran was as a trainee on the Esther Moran, going on in 1975 to become chief engineer on the Amy Moran. He came ashore with the company in 1976 as port engineer, and took over the position of shipyard manager in 1979.

### \$10.9-Million Increase To General Dynamics For Ohio-Class Sub

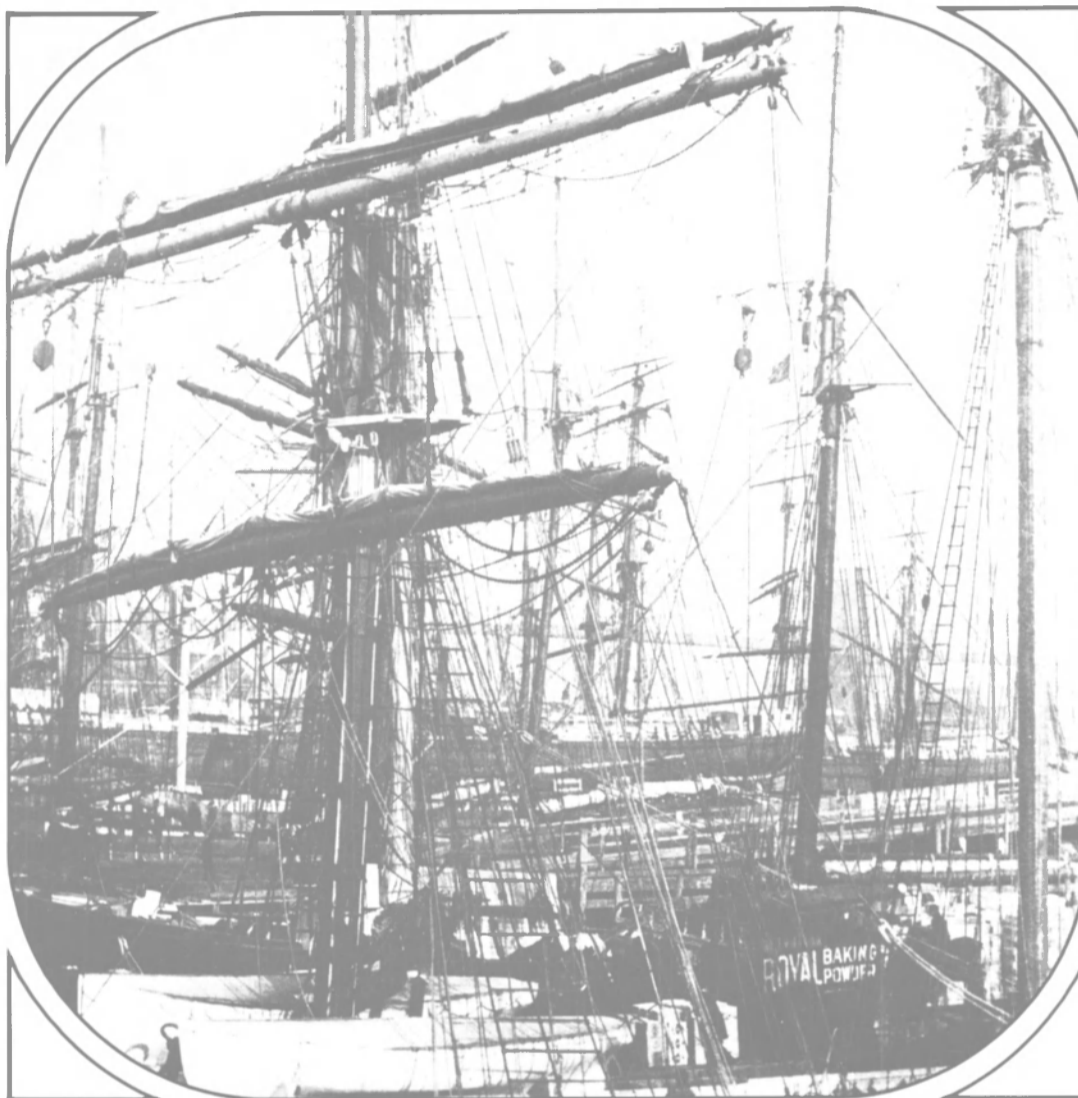
General Dynamics, Electric Boat Division, Groton, Conn., is being awarded a \$10,900,000 face value increase to a previously awarded cost-no-fee contract for long lead time material for the SSBN-737

Ohio class submarine for TY-85. The Naval Sea Systems Command, Washington, D.C., is the contracting activity.

### Westinghouse Awarded \$15.7-Million Increment

Westinghouse Electric Corpora-

tion, Machinery Technology Department, Large, Pa., is being awarded a \$15,750,225 face value increase to a previously awarded cost-plus-fixed-fee contract for machinery studies and integration engineering level of efforts. The Naval Sea Systems Command, Washington, D.C. is the contracting activity.



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## Krupp Atlas Has Major Orders For Atlas Polarfix — Literature Available

The U.S. Army Corps of Engineers is one of several major U.S. and European survey and port organizations which have ordered Krupp Atlas Elektronik's new Polarfix combined range/azimuth laser based dynamic position fixing system. The Corps has commissioned a system for general in-shore survey work in the Delaware area.

Among leading European authorities which have ordered systems is the Port of Huelva in Spain. It plans to carry out major harbor and channel approach surveys using Polarfix interfaced to Desco 20 echosounders and an Atlas SUSY 30/16 automated hydrographic survey system for the processing of both on and off-line data. The combination of Polarfix, Desco 20 and a SUSY 30 system also forms the basis of a fully automated Atlas survey configuration scheduled for delivery later this summer to the Faroese gov-

ernment survey authority, Landsingenioeren.

Newly developed by Krupp Atlas Elektronik, the Polarfix system is designed for short-range positioning applications. Using a single shore-based tracking station linked to onboard telemetry facilities, combined tracking and measuring functions are fully automatic. The system has an accuracy of 0.2m per km of measured range over distances of 5km or beyond.

For further information,  
Circle 56 on Reader Service Card

## New Brochure Available From American Standard Heat Exchanger Repair

American Standard Heat Exchanger Repair (ASHER), has made available a brochure on the company's new facility in Elizabeth, N.J., which has complete capability to repair or rebundle, retube or replace parts.

Titled "We Get Your Shell & Tube Heat Exchangers Back Into Action," the publication discusses

the company's ability to meet any need, and to handle the casualties of customers' daily production battles in the fastest possible turnaround time. ASHER's commitment to both quality and service is pointed out, and because of this they operate at full alert 24 hours per day, seven days per week.

The brochure contains various pictorial representations, along with a list of facility components and a map showing ASHER's exact location in Elizabeth.

For more information and a free copy of the brochure,

Circle 68 on Reader Service Card

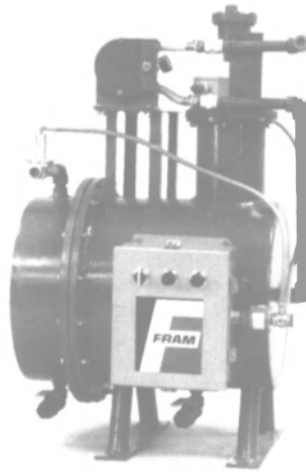
## Telesystems Names Perri As Director of Echo Control Development

COMSAT TeleSystems, Inc. has announced that Michael P. Perri has been promoted to the position of director, echo control development. In this capacity, he will be responsible for all development activities relating to the company's analog, digital, and acoustic echo control product lines.

Since joining TeleSystems in 1983, Mr. Perri has served as manager of echo control development. Previously he held positions with Conklin Instrument Corporation, Rockwell-Wescom, Inc., and GTE Automatic Electric. He received his BSEE from the University of Illinois.

COMSAT TeleSystems, Inc., located in Northern Virginia, designs, manufactures, markets and provides worldwide service and support for a complete line of advanced analog and digital signal processing equipment and systems.

## Fram Offers 20-Page Color Brochure On Its CPS-3 Marine Separator



A new 20-page color brochure describing the Fram CPS-3 marine separator is available free from Fram Industrial Filtration & Separation. The CPS-3 is a highly efficient coalescing plate separator designed especially for separation of oil and solids from shipboard bilge water. It is ideally suited for retrofit on existing vessels due to the ultra-compact size of the unit.

The brochure contains text, color illustrations, photos, drawings and graphs fully describing construc-

tion details, performance records, customized configurations, gravity flow systems, retrofitting and pressurized systems.

The CPS-3 exceeds IMO standards and is U.S. Coast Guard approved. The unit will process 3 gallons per minute to purities of 15-ppm oil content or less, with no costly filter elements or cartridges that result in hazardous waste disposal.

It is designed for manual or fully automatic operation, and requires very little maintenance. Only periodic cleaning of the plate packs is required for normal operation. The unit also eliminates the need for any holding tanks, and the need for waiting in line for discharge to an on-shore facility.

For additional information and a free copy of the brochure,

Circle 49 on Reader Service Card

## RCA Corporation Awarded \$11.4-Million Contract

RCA Corporation, Government Communications Systems, Camden, N.J., is being awarded an \$11,451,500 firm-fixed-price contract plus an option for three shipsets of the Integrated Voice Communications (IVC) system for FY-83 CG-47 class ships with associated data, repair parts, installation, checkout spares, engineering services and test equipment. The Naval Sea Systems Command, Washington, D.C. is the contracting activity.

## Aqua-Dyne Offers Brochure On Jet-Blasting Equipment

Aqua-Dyne Corporation of Houston, Texas, has published a 12-page color brochure on their high-pressure jet-blasting equipment used as an industrial surface cleaning tool. Handsomely wrapped in a panoramic view of the Grand Canyon with the caption "Nature took millions of years to cut and wash the earth with water," the cover serves as a picturesque premise on which the brochure draws a point: utilizing the performance characteristics of water at ultra-high pressure, Aqua-Dyne-manufactured jet-blasting equipment works economically using fresh or salt water to cut and wash away, in seconds, most natural and man-made materials.

Surfaces and materials that can be cut and washed with Aqua-Dyne jet-blasting equipment are listed, such as tubes, pipes, plain surfaces, tanks, etc., and there are photos of the equipment actually being used, as well as various Jet-Blaster models of Aqua-Dyne-manufactured systems shown in color with specification data given for each. Aqua-Dyne pumps are also discussed with cutaway drawing and photo, and there are some 18 Aqua-Dyne accessories illustrated with color photos along with a description of each.

For more information and a free copy of the brochure,

Circle 51 on Reader Service Card

## MAIN IRON WORKS, INC. REPAIR SERVICE

SERVING TUGS, PUSHERS, TOWBOATS, CREWBOATS, SUPPLY BOATS, INLAND & OFFSHORE BARGES



3500 Ton Dock  
200' x 100'  
90' Between  
Wing Walls

1500 Ton Dock  
160' x 80'  
70' Between  
Wing Walls

850 Ton Dock  
60' x 150'  
50' Between  
Wing Walls

300 Ton Dock  
50' x 80'  
40' Between  
Wing Walls

### HISTORY

Founded in 1948, Main Iron Works, Inc.'s current facilities are available for construction of new vessels ranging in size from 45' to 250' in length. Dry docking and a full range of repair services are also available, including a complete machine shop facility, sandblasting and painting services.

With over thirty years experience and our record of service to the towing industry, Main Iron Works, Inc. is ready to serve the needs of our past, present and future clients.

### GENERAL SERVICES

Air control mechanics  
Electrical repairs, trouble shooting  
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Sandblasting and Painting  
Complete machine shop service  
A.B.S. approved for stainless steel  
Cladding on main shafts  
Complete wood working shop

### Four Dry Docks:

300-Ton Capacity  
850-Ton Capacity  
1500-Ton Capacity  
3500-Ton Capacity completed 1st qtr. 84

All of the services listed above are available on a 24-hour basis, seven days a week. Quotation and price schedules are available upon request.

Located at 50 Mile Marker  
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LeRoy Molaison • Henry Brunet  
Otto Hughes • Wayne Piazza  
(504) 876-6302 • (504) 525-4020

### Machine Shop:

Lathes: Capacity in feet — 36 Feet  
Swing in inches — 30 Inches

### Wet Slips:

Three slips available for your boats or barges to tie up while repairs or supplies are being completed.

### Shaft Storage Rack:

To avoid costly delay in waiting for transport of shafts, we provide our customers storage for their spare main shafts and rubber shafts

### Inventory:

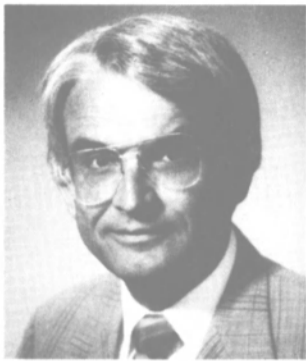
Along with our parts inventory, we keep a stock of steel plates, pipe, angles, flat bars, and channels, all American Bureau of Shipping approved.

We also have a supply of forgings and bar castings which enable us to supply your needs efficiently.

### Crane Service:

100 Ton Fixed Stiffleg for Offloading and Loading Supplies.

## Godfrey Promoted At Maxim Evaporator



Norman B. Godfrey

Norman B. Godfrey has been promoted to manager, Maxim® Evaporator Products. Joining the company in 1972 after 12 years of prior industry experience, Mr. Godfrey has been responsible for Marine Evaporator Products. He will now be in charge of marketing and engineering of all of the evaporator products, which includes marine and land-based evaporators, heat transfer products, strainers, and distillate fuel systems.

Mr. Godfrey's education includes a Bachelor of Science in mechanical engineering from Clarkson College in Pottsdam, N.Y.

## Ferrous Announces FMS, System For Administering Catalyst Into Fuel Oil — Literature Available

Ferrous Corporation, Bellevue, Wash., a manufacturer of combustion catalyst for marine diesel and boilers has developed a complete system for administering catalyst into the fuel oil. The Ferrous Marine System (FMS) provides the user with a proportioning pump, depulsing unit and 24-gallon day-tank for injecting Ferrous FE-4 Catalyst into the fuel oil at a ratio of one gallon per 3,000 gallons of fuel. The FMS automatic injection system mixes the fuel and catalyst with a minimum of effort and maintenance and a high degree of reliability. The standard FMS package also includes a 90 gallon storage tank.

The FMS proportioning pump allows accurate proportioning of FE-4 Catalyst from the catalyst daytank into the fuel line. It is powered by a variable stroke, oil driven, diaphragm pump. The standard pump operates on 115 VAC. DC and multiphase pump motors are available on special order. The pump comes in various output capacities, measured in gallons per minute or hour, to meet virtually any fuel oil flow requirement.

The FMS Depulsing Unit is designed to smooth out the pumping pulses in the flow from the catalyst proportioning pump to the fuel oil line.

The FMS Daytank incorporates a sightglass and measuring markings which allows easy on-board calibration. The daytank permits monitoring the addition of catalyst

to maintain a constant "fuel to catalyst" ratio.

The FMS includes a pump mounting plate measuring 12 by 14 by 3 inches; the daytank measures 15 by 15 by 32 inches. The system includes an in-line filter, pressure gauge and a spring-loaded in-line check valve as well as operating and installation manuals.

For free literature containing full information about the FMS System and Ferrous FE-4,

Circle 67 on Reader Service Card

## Philip Burguieres Named National Ocean Industries Association Chairman

Philip J. Burguieres has been elected chairman of the board of the National Ocean Industries Association (NOIA) for 1984-85. He is president and chief operating officer of Cameron Iron Works, Inc. of Houston. With 425 member companies, NOIA is the only national trade association representing all facets of the offshore and ocean-oriented industries engaged in the economic development and use of marine resources.

Other officers elected at the Association's 12th Annual Meeting held recently in Washington, D.C., are: vice chairman, R. Nelson Crews, president and COO of Raymond International, Inc., Houston; treasurer, C.D. Paget-Clarke, senior vice president of Oceaneering International Inc., Houston; assistant treasurer, Ardon B. Judd Jr., staff vice president and Washington counsel of Dresser Industries, Inc., Washington, D.C.; and secretary, Robert G. Burke, editor, Offshore magazine, Houston.

Charles D. Matthews and Phillip A. Clark were re-elected president and vice president, respectively, of the Association, and will continue to direct NOIA activities from the Washington office.

C. Robert Palmer, chairman, president, and CEO of Rowan Companies Inc. of Houston, having just completed an outstanding and productive term as NOIA chairman, will remain on the board for the next three years in the position of past chairman, joining past chairmen James R. Lesch, chairman and CEO of Hughes Tool Company, Houston, and Edward A. Wardwell, chairman of Oceaneering International.

## Litton Industries Awarded \$7.4-Million Contract

Litton Industries Incorporated, Ingalls Shipbuilding Division, Pascagoula, Mississippi, is being awarded a \$7,490,730 face value increase to a previously awarded cost-plus-fixed-fee contract for an extension of lead yard technical and engineering services for the Aegis shipbuilding program. The Naval Sea Systems Command, Washington, D.C., is the contracting activity.

## UNIPAR Offers Literature On Diesel Power Packs, Parts And Components

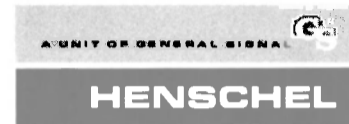
UNIPAR, Inc., a division of National Marine Service, Inc., has made available literature that highlights the 40,000-square-foot facility the company has in St. Louis, Mo., to provide the diesel engine power packs, parts and components that industry requires.

The literature points out that robotics, monorails and accumulating conveyors in UNIPAR's

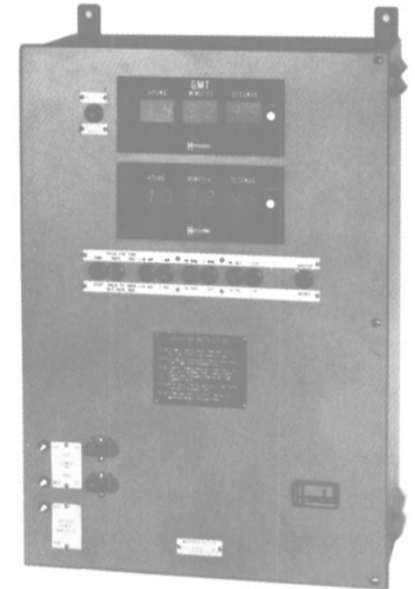
semi-automated process play major roles in the company's commitment to quick service and quality products at competitive prices. The semi-automated line of work stations are well illustrated with black-and-white photographs, and there is a discussion of each process along the way through the final work station.

For more information on UNIPAR's diesel engine power packs, parts and components,

Circle 74 on Reader Service Card



# Digital Master Clock System



The Henschel Digital Master Clock System provides a synchronized display of time in various shipboard locations. The master clock displays both local time and Greenwich Mean Time (GMT). This crystal controlled, microcomputer based master clock transmits multiplexed time (hours, minutes and seconds) and date (month, day and year) information to a maximum of 40 remote repeater clocks and/or data and bell loggers.



The remote repeater clocks display either local time or GMT in various mounting configurations to suit most applications. Time is continuously

displayed on both the master and repeater clocks by red, 6 digit LED displays, easily viewed up to 25 feet away. The date is displayed on the master clock by use of a front panel switch. This calendar function is set to maintain the correct date for changes in month, day, year and leap year.

Battery back-up is provided to maintain both time and date in the master clock and in a few selected repeater clocks during any loss of input power.

Clock accuracy is maintained independent of the input power frequency by a self-contained crystal oscillator. Time and date are easily set by means of pushbuttons on the front panel. When changing time zones, hours may be changed independently of minutes and seconds so that time accuracy is not lost.



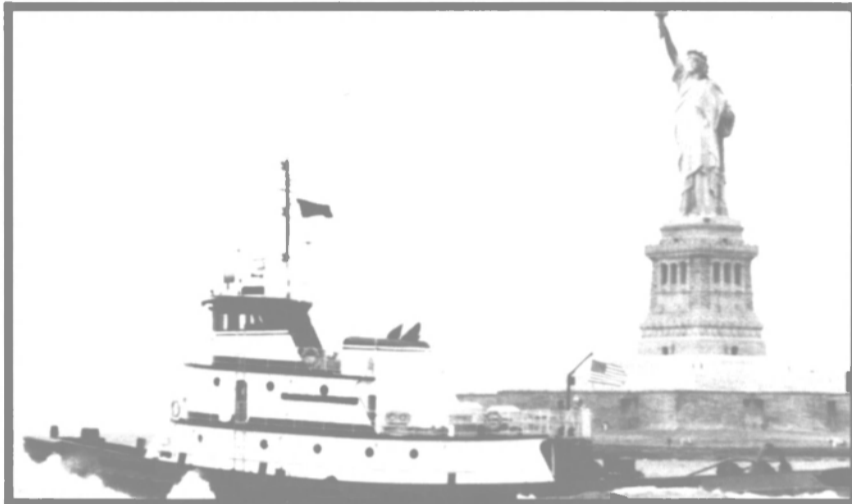
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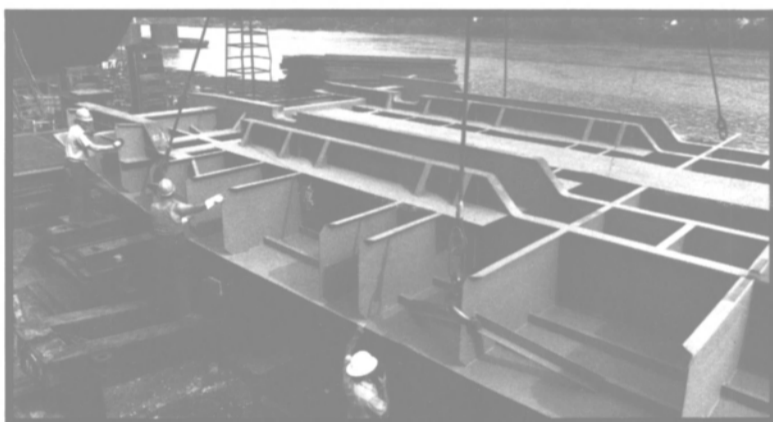


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MR



The two Dillingham barges being towed to Alaska by tug Richard Foss.

## Dillingham Delivers Massive Bridge Construction Materials To Alaska By Tandem Barge Tow

Dillingham Maritime Services, Seattle, Wash., recently delivered all the materials, except for poured-in-place concrete, for seven separate highway bridges at four different construction sites in Anchorage, Alaska. The 6,000 ton cargo was carried from Seattle via water on a tandem tow of two barges, which also included specially-equipped tractors and dollies used to off-load the material in Alaska.

"The tandem barge demonstrated the efficiencies that are possible when delivering very large, very bulky cargo," said **Blain Eliot**, Dillingham's Pacific Northwest manager.

The cargo included 56 concrete beams, each weighing between 63 and 88.5 tons and measuring up to 137 feet 8 inches in length; 12 massive steel truss bands, weighing between 72.5 and 132 tons apiece; 141 tons of steel rebar; three tractors and heavy-lift dollies; miscellaneous building materials and a Manitowoc 4100 crane.

The two Dillingham 286 Class barges, each measuring 286 feet long with a carrying capacity of 7,000 dwt, were towed to Alaska by the 3,000-horsepower oceangoing tug Richard Foss. After arriving in Anchorage, the cargo was transported six miles to its destination by the V. Van Dyke tractors and dollies.

"It was necessary to bring the specially equipped tractor and heavy-lift dollies to Alaska, because they are ideal for transporting the long and heavy beams to the construction site," said Mr. **Eliot**. The tow, for the Swalling Construction Co., Inc., of Anchorage, brought materials for the Minnesota Drive Extension project.

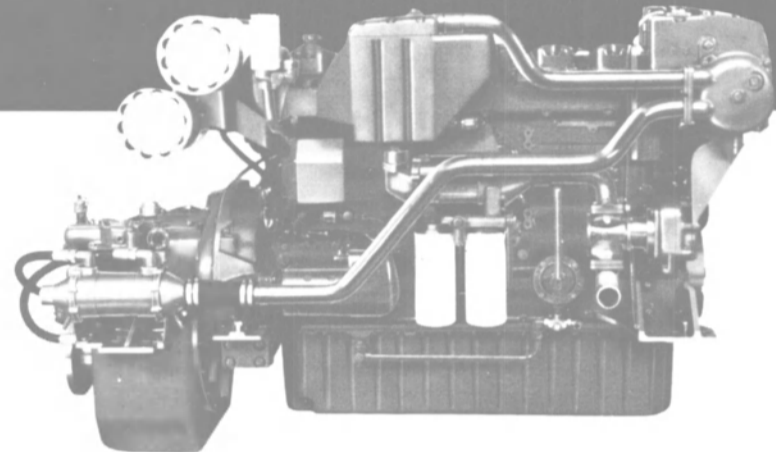
Dillingham Maritime Services is a Dillingham Maritime Company. Other Dillingham Maritime companies include Foss Launch & Tug Co. and Foss Alaska Line, both based in Seattle; Ocean Transportation Services, Inc., Houston, Texas; Pacific Towboat, Long Beach, Calif.; Dillingham Tug and Barge and Young Brothers Limited, headquartered in Honolulu.

### Guam Line To Construct Two Containerships

Guam Line, Inc., has signed a letter of intent with Osaka International Shipping Co., Ltd. to construct two containerships.

These vessels of about 7,900-dwt will carry 201 FEUS at a service speed of 16 knots. Of the 201 containers 45 will be refrigerated. Both ships will be U.S.-flag, built under ABS class and in complete compliance with U.S. Coast Guard requirements.

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### The TAMD 121 C, a turbo charged in-line six fitted with aftercooler.

Ask commercial operators who use a Volvo Diesel work engine how they rate it for steady reliable operation, operating economy and easy maintenance.

They'll relate to the engineering fine points that Volvo pioneered in diesel technology, by talking about extended range and lower fuel bills. And while low fuel consumption is a major engine consideration, you'll probably hear more about the fact that a Volvo Diesel is designed and manufactured as a marine work engine.

Engineering detail becomes evident when you size up the compact in-line six cylinder Volvo Diesel. Advanced metallurgy and precise engineering have been combined to help produce a diesel with low noise and vibration levels.

Installation costs can be kept down since a Volvo Diesel comes off the production line as a marine work engine, ready to go in to a boat. The uncomplicated engine design and a generous number of power take offs allow you to fit extra equipment (compressors, bilge pumps, hydraulic pumps, etc.) easier.

Easy maintenance features can help you lower your operating costs. Since the Volvo Diesel was built as a marine diesel, you'll find easy accessibility for cleaning, repair or replacement. And if you're in need of parts or service you have a well developed network of Volvo representatives, independent distributors and dealers in North America and 120 other countries backing you up.

Take stock in what operators who power with a Volvo Diesel say. Specify a Volvo Diesel when you build or repower.

Continuous flywheel power			Specific fuel consumption* at 270 kW, 1800 r/min	
kW	hp	r/min	g/kWh	lb/hph
270	367	1800	217	352

\*These results are obtained under laboratory and ideal conditions. Not necessarily obtainable under normal use. Fuel consumption may vary according to hull type, weight, speed, prop application, sea conditions, type of operation and maintenance. Note: Illustrated engine fitted with optional equipment.

### Marine work engines in a power range from 65 to 408 hp.

U.S. Distributors are located in California, Connecticut, Florida, Hawaii and the state of Washington. Canadian Distributors are located in British Columbia, Newfoundland, Nova Scotia, and Ontario.

If you need information, specifications or assistance for a Volvo Diesel contact:  
Commercial Marine Manager, Volvo Penta of America, P.O. Box 927, Rockleigh, NJ 07647. (201) 767-4837

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**St. Augustine Shipbuilding  
Vessel For Caribbean Service  
Designed By DeJong & Lebet**

The M/V Delmar L., recently constructed at St. Augustine Shipbuilding Corporation, is the latest of many vessels designed by the Jacksonville naval architectural firm of DeJong & Lebet, Inc., for operation in the Caribbean.

The Delmar L. operates between the island of Andros, Nassau and the United States mainland, carrying a variety of cargoes. Below deck, she can carry 350 cubic feet of frozen cargo, 350 cubic feet of refrigerated cargo, 3,500 cargo feet of dry cargo, 9,200 gallons of number 2 diesel oil and 7,600 gallons of gasoline.

By raising the living quarters, the entire



main deck can be utilized for cars, trucks and trailers; either 10 automobiles or seven automobiles and two 20-foot trailers.

A bow ramp provides for RO/RO capability while dry cargo can be brought onboard either through removable bulwark sections or by means of a five-ton hydraulic crane.

Special deck structure and 2-inch wood planking over the deck allow for the carriage of heavy deck cargo with concentrated loadings.

The single GM 8 V-71 N main engine provides for a service speed of 9½ knots at a fuel consumption of 12 gallons per hour.

The upper deck accommodates quarters for a crew of eight, galley, mess and pilothouse.

Principal dimensions are as follows: length overall of 82 feet; molded beam of 24 feet, depth of 11 feet and a loaded draft of 6 feet 6-inches.

The vessel was designed and constructed in accordance with the Bahamian Merchant Shipping Rules.

The Delmar L. is the fifth vessel designed by DeJong & Lebet, Inc. in recent years to provide versatile and economic service in the Caribbean region.

For full details on St. Augustine's capabilities and services,

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Contact:

Jerry Harper  
Show & Conference Coordinator  
The International Inland Waterways Show  
818 West Main Street  
Louisville, Kentucky 40202  
Phone: 502-587-8655

**CIME Technical Seminar Hosted  
By Vancouver, B.C. Branch**



The Canadian Institute Of Marine Engineers Vancouver Branch hosted a technical paper meeting in May at the Sheraton Villa Inn in Burnaby, B.C. Canada. The guest speaker was **Bob Lowden**, sales manager of Pumps & Power Ltd., Vancouver, B.C. The topic of discussion was the Ship Service Pump—an Overview of Pump Types and Their Applications. Mr. **Lowden** reviewed some of the basic principles of basic pump types, the characteristic curve and information which can be gleaned from the curve.

Centrifugal pumps were then discussed in more detail, with slides showing the various types available and their application. Positive Displacement pumps were next discussed and the applications and limitations reviewed.

Pumps & Power were kind enough to provide a table top display of some of the marine centrifugals they manufacture in Vancouver, and a variety of impellers designed for various applications.

Also displayed were several cutaway models of Internal Gear Pumps, and the business end of a Progressing Cavity pump, the shape of which resembles a pigs tail curve and which drew some interesting comments.

Considerable discussion followed the presentation involving questions from the floor and the meeting terminated with a presentation of a gift to Mr. **Lowden** by the branch chairman, **Peter Hansen**.



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Principals at the Antares naming ceremony were (L to R): Gen. **Wallace H. Nutting**, USA, principal speaker and Commander-in-Chief of the U.S. Readiness Command; **Mrs. Nutting**, the ship's sponsor; **Mrs. Paul D. Hurst**; **Mrs. Albert Bossier**; Col. **Eugene C. Schoultz**, USMC, Commander of the Naval System Command, Department of the Navy, Washington. At rear are Capt. **Paul D. Hurst**, USN, Supervisor of Shipbuilding-New Orleans; and **Albert Bossier**, president of Avondale. Flower girl is **Miss Elizabeth Carriere**.

## AVONDALE DELIVERS FAST SEALIFT SHIP USNS ANTARES TO MSC

The Fast Sealift Ship (FSS) USNS Antares (T-AKR-294) was dedicated in ceremonies held recently at Avondale Shipyards, Inc. near New Orleans, and delivered to the Military Sealift Command about two weeks later. This is the first of three SL-7 containerships that Avondale is converting for the MSC. The FSS ships will provide for the rapid deployment of heavy mechanized Army combat and support equipment and supplies, as well as providing sealift capability for the Marine Corps, Air Force, and Navy.

The Antares has an overall length of 944 feet, a beam of 105.6 feet, and displacement of 55,372 long tons. She was built as the Sea-Land Galloway at the A.G. Weser yard in Bremen, West Germany, in 1972. Her 120,000-shp, twin-screw propulsion plant comprises General Electric steam turbines and gears, and two Foster Wheeler boilers.

The capabilities of the Antares and other Fast Sealift Ships include: 33-knot transit speed, roll-on/roll-off handling of cargo, and self-sustaining lift-on/lift-off, by means of twin 35-ton and 50-ton cranes, of vehicles and helicopters. The vessels are able to land helicopters, and load a mixture of tanks, helicopters, wheeled vehicles, and containerized or palletized cargo.

The conversion of the Antares included, in part, the modification of existing container storage areas to accommodate various new decks including a helicopter flight deck, the installation of the 35-ton and 50-ton twin cranes, the fitting of two sideports and various platforms and ramps to support RO/RO operations.

Avondale utilized state-of-the-art techniques for zone outfitting in the conversion ef-

fort. Structural modules were outfitted with piping, ductwork, electrical wireways, and equipment prior to being erected at the building site.

The Navy names special amphibious support cargo ships such as the Antares after celestial bodies. The Fast Sealift Ships of the T-AKR Class are named after brilliant stars, and the Antares (T-AKR-294) is named after the brightest star in the southern sky, in the constellation Scorpius.



Fast Sealift Ship USNS Antares has been delivered to MSC by Avondale. She is first of three former SL-7 containerships being converted by the New Orleans shipyard.



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**Todd Pacific Shipyards  
Launches And Dedicates  
Guided Missile Frigate Ford**

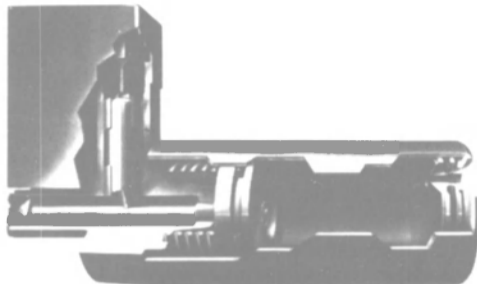


Todd Pacific Shipyards Corporation, Los Angeles Division, recently launched and dedicated the guided missile frigate Ford (FFG-54) at ceremonies at Todd's San Pedro facilities. Pictured speaking is **Robert C. McFarlane**, Assistant to President **Reagan** for National Security Affairs, who affirmed the Administration's commitment to build up the

Navy's fleet and described how the Ford will contribute to that objective.

The Ford is the 15th guided missile frigate built at Todd-Los Angeles. Completion is expected in approximately 11 months, 14 weeks ahead of schedule.

**TEP 3000 Turbocharger  
Injector Pump Extends  
Turbocharger Life  
— Literature Available**



Lack of lubrication, both at start-up and shut-down, is the major cause of turbocharger failure. Oil starvation to the turbocharger bearings at start-up is due to the lag time associated with the oil pump reaching rated pressure and output and the turbocharger's immediate need for lubrication. Likewise, since the turbocharger is the last to receive lubrication at start-up, it is the first to lose lubrication at shut-down.

The TEP 3000 turbocharger injection pump solves both the start-up and shut-down problems. The TEP 3000 is precision engineered,

has undergone stringent evaluation by the Ministry of Defense and General Motors in England and is approved as standard equipment on all NATO turbocharged tactical vehicles and generator sets. Approvals from major engine manufacturers indicate no conflict with warranty.

The TEP 3000 is a two-stage pump that operates via a high tensile steel compression spring which preloads the whole assembly and pushes the piston forward to discharge oil under pressure to the turbocharger bearings. At start-up oil is injected into the turbocharger bearings at 15 psi for a period of two minutes, preventing lubricating starvation and bearing failure.

Immediately on engine shut-down and loss of oil pressure, oil is discharged at 20 psi for approximately two minutes, cooling and lubricating the turbocharger bearings during this critical time.

Once the piston has injected oil for two minutes at shut-down, the locking pin engages the solenoid and the piston is secured in stage one, ready for the next starting cycle.

The TEP 3000 can be installed in less than an hour and all necessary hardware, hoses, fittings, and brackets are included. It is fully compatible with all engines and turbochargers.

The TEP 3000 is manufactured in England and imported to the U.S. by Lubrication Consultants, Inc., Houston, Texas. The TEP 3000 is patented and fully warranted for two years against manufacturer's defects in materials and workmanship. The price is \$395.

For further information and free literature,

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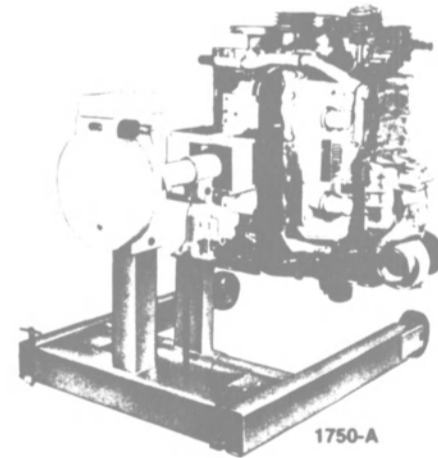


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## New IMA Report Available Analyzing U.S. Navy Overhaul Market

The U.S. Navy has budgeted over \$6 billion for ship repair and alteration in 1985. Between 30-40 percent of this budget will flow through commercial shipyards. This is an obviously interesting market. It offers many business opportunities to shipyards and equipment manufacturers. It is also a complex, dynamic market.

**Current Players**—Navy owns and operates eight naval shipyards, three ship repair facilities and a variety of specialized repair depots. These facilities employ about 100,000 workers and perform about 65 percent of the ship maintenance. The remaining 35 percent is shared by about 30 commercial shipyards. Numerous firms are involved in refurbishing equipment and supplying new components.

**Projected Market**—The projected 1985 budget for Navy ship maintenance is an increase of 45 percent over 1982. Overhauls decrease from 63 to 56, but projected selected restricted availabilities and phased maintenance availabilities greatly increase.

MSC's maintenance and alteration budget has grown from \$240 million in 1983, to a proposed \$319 million in 1985. Over 35 ship overhauls are planned over the next 12-18 months.

**Maintenance Strategy**—The traditional practice of taking a ship out of service for a 5-20 month overhaul every 3-5 years has changed. In its place are three new maintenance approaches:

- **engineered/extended operating cycle**—which provides for extending overhaul intervals to 5-8 years, with short depot availabilities scheduled between overhauls
- **progressive maintenance**—which essentially aims to eliminate the need for on-board maintenance and regular overhauls by scheduling frequent servicing at specialized maintenance facilities
- **phased maintenance**—a newly introduced concept which uses maintenance approaches found in commercial shipping firms

Market size, its composition, and geographical distribution of opportunities have greatly altered as a result of these new maintenance approaches.

**Managing An Overhaul**—It is a very complex activity with many players. The planning process begins 18-24 months before the overhaul is to start. Numerous organizations within Navy get involved. The Office of Naval Operations coordinates the planning. Fleet Type Commanders determine repair requirements for specific ships. Ship modernization is managed by the Naval Sea Systems Command. Eight naval shipyards, sixteen SUPSHIP offices, and five specialized repair planning offices provide the engineering support.

MSC's ship maintenance planning is much less complex. Its approach is similar to commercial practice. Planning starts 2-4 months before the overhaul is scheduled.

**Contracting Policies**—Decisions concerning homeport policy, private sector allocation, small business set-asides impact heavily on the size of potential market. They determine the amount of work available to prospective bidders, and who will be eligible to bid.

**Qualification**—To repair Navy ships a firm must execute a master ship repair agreement. More than 140 firms have such an agreement with NAVSEA, and over 200 have agreements with MSC. Eight firms have master ordnance repair contracts.

**Foreign Firms**—There is no prohibition against foreign firms repairing Navy ships. Certain technical requirements create obstacles, and special restrictions have been applied to specific situations. Among the top contractors to MSC are several foreign firms.

A complete review of this complex, interesting market is contained in a July 1984 report by International Maritime Associates (IMA). The entire subject is covered in a tightly written, factual marketing guide. The report is 175 pages. It contains numerous tabulations, explains contracting procedures and recommends contacts to follow up for marketing.

The report is available for \$480. This price includes a subscription to four quarterly updates to be published over the next 12 months.

For more information contact **James R. McCaul**, International Maritime Associates, Inc., 1800 K Street, N.W., Washington, D.C. 20006.

## Renk Opens New Plant In South Carolina — Literature Available

To meet the increasing demand for Renk products and service in the U.S., Renk AG of Augsburg and Hannover, West Germany, announces the opening of Renk Corporation, an independent American manufacturing facility in Duncan, S.C.

For more than 100 years, Renk has manufactured special-purpose gear units, bearings, and drive elements. Renk Corporation supplies gears for marine applications, energy plants, cement mills, rolling mills, and the chemical industry. Transmissions are provided for military applications, off-highway construction equipment, and buses. For custom-engineered machines, electric machines, heavy-

duty fans, turbocompressors, and horizontal water turbines, Renk offers various bearings.

Renk AG, with four plants and more than 2,000 employees in Europe and North America, manufactures gears, bearings, and transmissions for the major capital goods industries worldwide. For many years, the company has been a member of the GHH, the largest mechanical engineering group in Europe.

For further information and free literature on Renk products,

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## \$11.1-Million Contract Awarded BIW For The Overhaul Of USS Page

Bath Iron Works Corporation, Bath, Me., is being awarded an \$11,194,527 firm-fixed-price contract for the regularly scheduled overhaul of USS Page (FFG-5). The Naval Sea Systems Command, Washington, D.C. is the contracting activity.

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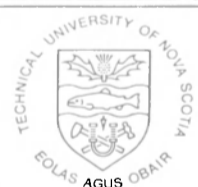
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Forty-five barges are being constructed by Nashville Bridge Company (NABRICO), Nashville, Tenn., for the New York City Department of Sanitation.

Seven of the barges—which are being fabricated from heavy thickness plate steel produced by Republic Steel Corporation at their Gadsden, Ala. plant—have been delivered and are in service in New York.

Each barge is 150 feet by 37 feet by 12 feet 9 inches and has a double hull construction with an inner and outer shell. The barges have a rated capacity of 680 tons of garbage each.

"These barges are unique to New York and are being built to exact specifications," according to **Allen Zang**, president of NABRICO.

Mr. Zang said that 37 different sizes of a special grade steel plate are being used in each barge. In addition, each barge contains approximately 530 tons of steel—80 percent of it being supplied by Republic; about eight miles of welding; and some 1,300 gallons of paint. When empty, each barge weighs approximately 620 tons.

The barges meet the requirements of the American Bureau of Shipping for river and harbor service.

The 45 barges will increase the New York City fleet to 100. Once all the new barges are delivered, it is estimated that at any given time, 30 of the barges will be in the process of being loaded, 30 will be in transit, and 30 will be in the process of being unloaded. This will provide a reserve of 10 barges.

New York officials estimate that by 1986, the Department of Sanitation will be transporting more than 15,000 tons of garbage daily via barge.

NABRICO is a wholly owned subsidiary of The American Ship Building Company, Tampa, Fla. Headquartered in Nashville, the company has been in the marine field for more than 60 years and is primarily concerned with the design, engineering and construction of grain and coal barges, deck barges, liquid tank barges and cement barges for river and ocean service as well as drydocks and towboats.

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## Rauma-Repola Delivers 225-Foot Salvage Tug To Soviet Union

The Rauma-Repola shipyard in Uusikaupunki, Finland, earlier this year handed over to its Soviet trading partner, V/O Sudoimport of Moscow, a type SB 406 ocean-going salvage tug, the 14th ocean-going tug delivered by that yard to the USSR. Construction of the series started in 1976; four 3,500-bhp vessels were completed in 1977-79, and nine in the 1980s. The new 7,800-bhp SB 406 tug is bigger, more powerful, and more comprehensively equipped than the previous vessels. A second SB 406 is under construction.

The Rauma-Repola yards have designed and built more than 160 tugs, the biggest at the Uusikaupunki Shipyard. That yard built a tug as far back as 1895 for what was then Czarist Russia. Powered by a 30-hp steam engine, that vessel was 72 feet long with a beam of 15.5 feet and draft of 3.5 feet.

The SB 406 is powered by two 3,900-bhp diesel engines. Her length is 225.72 feet, beam is 50.85 feet, and draft is 16.73 feet. She has twin screws and a bow thruster. The strength of her ice reinforcement is shown by the UL1 classification given her by the USSR Register of Shipping, a rating exceeding even the highest Finnish ice class.

The new tug is the product of collaboration in many ways. Design and construction were based on Rauma-Repola's own know-how and on the experience gained in foreign markets. V/O Sudoimport is very strict in insuring that the final product corresponds to the original designs. It also knows exactly what makes a good tug. This presents the builder with the challenge of carrying out the plans scrupulously.

She has ultramodern diving, pumping, and fire-extinguishing equipment needed for rescue and salvage operations. Using the pinpoint accuracy of her four water-foam monitors, the SB 406 can take shelter behind her own water screen while putting out fires on other vessels up to 260 feet distant. One of the monitors is telescopic, and can be raised hydraulically to a height of about 100 feet. The tug also has equipment for the dry powder extinguishing that has proved most effective for fires aboard tankers.

Using the special equipment on board, salvage diving and technical work can be carried out up to a depth of almost 200 feet. The tug has two diving stations, and both a fixed and a portable decompression chamber.

Towing is one of the SB 406's main operations. She is equipped with two Rauma-Repola winches, one pulling 60 tons and the other 30 tons. The 2.20-inch and 1.57-inch diameter towing cables are 2,460 feet long. The towing hook, designed and developed in collaboration with the supplier, can be remote-released from the tug's stern control room.

There is a fast-acting, 5-ton articulated-boom crane installed on the stern deck; this is used for various hoisting jobs. The crane can withstand rolling caused by even the heaviest swell. It can be used for the lifting operations involved in diving work, and carries a "basket" for lifting up to eight people at a time from the water.

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Capt. Astad Company, Inc., P.O. Box 53434, New Orleans, La. 70153  
ECO Inc., 1036 Cape St. Claire Center, Annapolis, MD 21401  
Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004

## 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., 535 Madison Ave., New York, NY 10022  
National Marine Service Inc. (Transport Div.), 1750 Brentwood Blvd., St. Louis, MO 63144

## CARGO HANDLING EQUIPMENT

Alpha Technical Services, Inc., P.O. Box 446, Hamilton, OH 45012  
MacGregor-Navire International, Box 8991, S-40274 Göteborg, Sweden  
MacGregor Navire U.S.A. Inc., 135 Dermody St., Cranford, NJ 07016

## CHOCKING 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

## CLOSURES—Marine

Cornell-Carr Co. Inc., 63 Main St., Monroe, CT 06468  
Mock Manufacturing Inc., 777 Rutland Rd., Brooklyn, NY 11203

## COMPUTERIZED INFORMATION SYSTEMS

Marine Management Systems, Inc., 102 Hamilton Ave., Stamford, CT 06902  
Maritime Data Network, Ltd., 102 Hamilton Ave., Stamford, CT 06902

## CONDENSERS

Riley-Beard, P.O. Box 31115, Shreveport, LA 71130

## CONTROL SYSTEMS—Monitoring

American United Marine Corp., 5 Broadway, Rte. 1, Saugus, MA 01906  
Argo Marine, 140 Franklin St., New York, NY 10013  
ASEA, Inc. 4 New King St., White Plains, NY 10604  
Autronica Marine USA, 280 Industrial Pkwy., Northvale, NJ 07647  
Avicon Corp., 7750 East Redfield Rd., Scottsdale, AZ 85260  
Barringer Research, 304 Carlingview Dr., Rexdale, Ontario, Canada M9W5G2  
Biospherics Inc., 4928 Wyacondo Rd., Rockville, MD 20852  
Bowmar/Alli, Inc., 531 Main St., Acton, MA 01720  
Cooper Energy Services, Mount Vernon, OH 43050  
Eldec Corp., P.O. Box 100, Lynwood, WA 98036  
Louis C. Eitzen Co., P.O. Box 1210, Glenwood Springs, CO 81602  
Ergon, Inc., P.O. Drawer 1639, Jackson, MS 39205  
Failsafe Motor/Generator Protector, Marine Safe Electronics Ltd., 101 Jar-din Dr., Unit 24/25, Concord, Ontario, Canada L4K 1B6  
Fluidyne, a Div. of Electrodata Inc., P.O. Box 11366, Santa Rosa, CA 95406  
Grumman Aerospace, 111 Stewart Ave., Bethpage, NY 11714  
ITT Mockay, 441 U.S. Highway #1, Elizabeth, NJ 07202  
Indikon Corp., 26 New St., Cambridge, MA 02138

Kongsberg North America Inc., 400 Oser Ave., Hauppauge, NY 11738  
Leslie Co., 401 Jefferson Rd., Parsippany, NJ 07054  
Marine Moisture Control Co., 60 Inip Dr., Inwood, NY 11696  
Maritime Protection A/S, Box 100, N-4620 Vagsbygd, Norway  
Megastystems, Inc., 1075 N.W. 58th Street, Boca Raton, FL 33431  
National Control Systems, Inc., 827 Hanley Industrial Court, St. Louis, MO 63144

Nav-Vue, Inc., P.O. Box 1175, Huntsville, TX 77340  
Norske Teletron A/S, Drammensveien 126, Oslo 2, Norway  
Offshore Technology Corp., 578 Enterprise St., Escondido, CA 92025  
Pandel Instruments Inc., 2100 N. Hwy. 360, Grand Prairie, TX 75050  
Propulsion Systems, Inc., 21213 76 Ave., Kent, WA 98032  
Seaworthy Systems Inc., 36 Main Street, Essex CT 06426  
Teleflex Inc., 771 First Ave., King of Prussia, PA 19406  
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062

Valmet Automation A.S., P.O. Box 130, N-3430, Spikkestad, Norway  
Wesmar Marine Systems Div., 801 Dexter Ave. N., Box CI9074, Seattle, WA 98109

## COUPLINGS

Camlock Flange Sales Corp., 60 Inip Dr., Inwood, NY 11696  
SKF Steel, 20 Tower Lane, P.O. Box 745, Avon, CT 06001

## CRANES—HOISTS—DERRICKS—WHIRLIES

American Hoist & Derrick Company (AMHoist), St. Paul, MN 55107  
Appleton Marine, P.O. Box 2339, Appleton, WI 54913  
ASEA Stal-Laval Inc., 525 Executive Blvd., Elmsford, NY 10523  
Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081  
Chester Hoist Division, Monogram Industries, P.O. Box 229, Lisbon, OH 44432  
Grove Manufacturing Co., P.O. Box 21, Shady Grove, PA 17256  
HIAB Cranes & Loaders Inc., R.D. 22 Interchange Place, York, PA 17404  
Hertz Equipment Rental Corp., 7 Entin Rd., Bldg # 2, Parsippany, NJ 07054  
Machinexport, 35 Mosfilmovskaya Ul., 117330 Moscow, U.S.S.R.  
Marine Travelift, Inc., 49 E. Yew St., Sturgeon Bay, WI 54235  
National Crane Corp., 11200 North 148 St., Waverly, NE 68462  
National Supply Company, 1455 West Loop South, Houston, TX 77027  
J.D. Neuhaus, Hebezeuge, D5810, Witten Heven, West Germany  
Superior-Lidgerwood-Mundy Corp., 1101 John Ave., Superior, WI 54880

## DECK MACHINERY—Cargo Handling Equipment

Argo Marine, 140 Franklin St., New York, NY 10013  
Marine Technical Associates, 195 Patterson Avenue, Little Falls, NJ 07424  
Markey Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134  
Murdock Engineering Company, P.O. Box 2278, Irving, TX 75061  
Schoellhorn Albrecht, Div. of St. Louis Ship, 3460 So. Broadway, St. Louis, MO 63118

## DECKING—GRATING

International Grating, Inc., 7625 Parkhurst, Houston, TX 77028  
Selby, Battersby & Company, 5220 Whiby Ave., Philadelphia, PA 19143  
J.E. Steigerwald Co., Inc., 5515 Belair Rd., Baltimore, MD 21206

## DIESEL ACCESSORIES—CYLINDER LINERS

B & W Marine Service, 50 Broadway, New York, NY 10004  
General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, Massachusetts 02360  
Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, NY 11231  
Haynes Corporation, P.O. Box 179, Jackson, MI 49204  
Van der Horst Corp. of America, 314 Penn Ave., Olean, NY 14760

## DIESEL ENGINE—Spare Parts & Repair

Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, NY 11231  
Powerway, 46G Worthington Drive, St. Louis, MO 63141

## ELECTRICAL EQUIPMENT

Argo Marine, 140 Franklin St., New York, NY 10013  
Jergens Inc., 19520 Nottingham Rd., Cleveland, OH 44110  
Marine Electric RPD, Inc., 666 Pacific St., Brooklyn, NY 11217  
Valad Electric Heating Corporation, 162 Wildey St., Tarrytown, NY 10591  
Ward Leonard Electric Co., 31 South St., Mt. Vernon, NY 10550  
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

## EMULSIFICATION SYSTEMS

Cleanodan A/S, N. American Agents, American United Marine Corp., 5 Broadway, Route 1, Saugus, MA 01906  
Fire-Brite, Hoffer Manufacturing Co., Inc., 3749 Progress Rd., Norfolk, VA 23502

## EQUIPMENT—Marine

American General/Levin Corp., 445 Littlefield Ave., So. San Francisco, CA 94080  
Argo Marine, 140 Franklin St., New York, NY 10013  
ASEA Stal-Laval Inc., 525 Executive Blvd., Elmsford, NY 10523  
Band-It Division, Houdaille Industries, Inc., P.O. Box 16307, Denver, CO 80216

Thomas Coudon Associates, 6655 Amberton Dr., Baltimore, MD 21227  
Fitz-Wright Suits Ltd., 17919 Roan Pl., Surrey, B.C., Canada V3S 5K1  
Genstar Stone Products Company, Executive Plaza IV, Hunt Valley, MD 21031

Harvey's Commercial Marine Div., 2505 S. 252nd St., Kent, WA 98032  
b.v. Holmatro Industrial Equipment, P.O. Box 33, 4940 aa Raamsdonksveer, Holland

Imperial Manufacturing Co., P.O. Box 4119, Bremerton, WA 98312  
Juniper Industries Inc., 72-15 Metropolitan Ave., Middle Village, NY 11379  
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550  
Maritime Power Corp., 200 Henderson Street, Jersey City, NJ 07302  
John P. Nissen, Jr. Company, Glenside, PA 19038  
Stal-Laval Turbin AB, S-612 20 Finspong, Sweden

## EVAPORATORS

Alfa-Laval, Inc., Dept. MR-2, 2115 Linwood Ave., Fort Lee, NJ 07024  
Aqua-Chem Inc., P.O. Box 421, Milwaukee, WI 53201  
MECO (Mechanical Equipment Company, Inc.), 861 Carondelet St., New Orleans, LA 70130  
Riley-Beard, P.O. Box 31115, Shreveport, LA 71130

## FANS—VENTILATORS—BLOWERS

American United Marine Corp., 5 Broadway, Rte. 1, Saugus, MA 01906  
Argo Marine, 140 Franklin St., New York, NY 10013  
Gaylord Industries, Inc., P.O. Box 558, Wilsonville, OR 97070  
Hartzell Fan, Division of Castle Hills Corp., 901 S. Downing St., P.O. Box 919, Piqua, OH 45356  
Joy Manufacturing Company, 338 So. Broadway, New Philadelphia, OH 44663

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

## FENDERING SYSTEMS—Dock & Vessel

Hughes Bros., Inc., 17 Battery Place, New York, N.Y. 10004  
InterTrade Industries, 15301 Transistor Lane, Huntington Beach, CA 92649  
Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062  
Samson Ocean Systems, Inc., 99 High St., Boston, MA 02110  
Seaward International, Inc., 6269 Leesburg Ave., Falls Church, Va. 22044

## FILTERS

Dahl Manufacturing, Inc., 2521 Railroad Ave., Ceres, CA 95307  
Mueller Steam Specialty, P.O. Box 1569, Lumberton, NC 28359  
Wm. W. Nugent & Co., P.O. Box 948, Skokie, IL 60076

## FINANCING—Leasing

A.G. Becker Paribus Inc., 2 First National Plaza, Chicago, IL 60670  
Gulf Western Leasing Corp., 1500 City West Blvd., Suite 300, Houston, TX 77047  
Yegen Marine, P.O. Box 25504, Ft. Lauderdale, FL 33320

## FIRE PROTECTION, DETECTION, & ALARM SYSTEMS

EEV, Inc., 7 Westchester Plaza, Elmsford, NY 10523  
Gulf Publishing Company Video (Firefighting Videotape), P.O. Box 2608, Houston, TX 77001  
Walter Kidde, Walter Kidde Dr., Wake Forest, NC 27586  
Wormald Fire Systems, One Stanton St., Marinette, WI 54143

## FUEL OIL/ADDITIVES—Analysis & Combustion Testing

Ferrarus Corporation, 910 108th N.E., P.O. Box 1764, Bellevue, WA 98009  
Fuji Trading (America) Ltd., 17 Battery Place, New York, NY 10004  
McTigue Industries Inc., 1615 9th Ave., Bohemia, NY 11716  
U.S. Borax, 3075 Wilshire Blvd., Los Angeles, CA 90010

## FURNITURE

Bailey Carpenter & Insulation Co., 74 Sullivan Street, Brooklyn, N.Y. 11231  
Comfort-Mote, Inc., 7988 NW 56th Street, Miami, FL 33166

## GALLEY EQUIPMENT

Argo Marine, 140 Franklin St., New York, NY 10013  
Insinger Machine Co., 6245 State Rd., Philadelphia, PA 19135

## GANGWAYS

Rampmaster Inc., 9825 Osceola Blvd., Vero Beach, FL 32960

## HATCH & DECK COVERS—Chain Pipe

Camlock Flange Sales Corp., 60 Inip Dr., Inwood, NY 11696  
Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207  
Marine Moisture Control Co., 60 Inip Dr., Inwood, NY 11696  
MacGregor-Navire International, Box 8991, S-40274 Göteborg, Sweden  
MacGregor Navire U.S.A. Inc., 135 Dermody St., Cranford, NJ 07016  
Mock Manufacturing Inc., 777 Rutland Rd., Brooklyn, NY 11203  
J.E. Steigerwald Co., Inc., 5515 Belair Rd., Baltimore, MD 21206

## HEAT EXCHANGERS

Alfa-Laval, Inc., Dept. MR-2, 2115 Linwood Ave., Fort Lee, NJ 07024  
American Standard Inc., Heat Transfer Div., Buffalo, NY 14240  
Riley-Beard, P.O. Box 31115, Shreveport, LA 71130

## HULL CLEANING

Butterworth Inc. (USA), 3721 Lapas Dr., P.O. Box 18312, Houston, TX 77223-9989  
Butterworth Systems (UK), 123 Beddington Lane, Croydon CR9 4NX, England

Gulf International Divers, P.O. Box 1342, Gretna (New Orleans), LA 70052  
Pacific Maine Services, Berth 10, Pier A, Long Beach, CA 90802  
Performance Hull Cleaning Services, Inc., P.O. Box 655, New Orleans, LA 70059-0655

Petrochemical Services, Inc., 3820 Dauphine St., New Orleans, LA 70117  
Phosmarine Equipment, 21 Bd. de Paris, 13002, Marseille, France  
Seaward Marine Services, Inc., 6269 Leesburg Pike, Falls Church, VA 22044  
Stark Services B.V., P.O. Box 2013, 7750 CA Hengelo, Holland  
Taylor Diving & Salvage Co. Inc., 701 Engineers Rd., Belle Chasse, LA 70037

## HYDRAULICS

Aerogrip Corp., 1130 Maynard Road, Jackson, MI 49202  
Del Gavio Marine Hydraulics Inc., 207 W. Central Ave., Maywood, NJ 07067  
HRS, Inc., 3334 Victor Court, Santa Clara, CA 95050  
Hydronautics, 6338 Lindmar Drive, Goleta, CA 93017  
Washington Chain & Supply, Inc., P.O. Box 3646, Seattle, WA 98124

## INERT GAS—Generators—Systems

Camar Corp., 186 Prescott St., Worcester, MA 01605  
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, NJ 07039  
Maritime Protection A/S, N. American Agents, American United Marine Corp., 5 Broadway, Rte. 1, Saugus, MA 01906  
Salwico Inc., 5 Marine View Plaza, Hoboken, NJ 07030

## INSULATION—Cloth, Fiberglass

Bailey Carpenter & Insulation Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231  
Superior Energies, Inc., P.O. Drawer 386, Groves, TX 77619  
Waco Inc., 5450 Lewis Rd., P.O. Box 836, Sandston, VA 23150-0836

## INSURANCE

Adams & Porter, 510 Bering Dr., Houston, TX 77057-1408  
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  
R.A. Fullton & Company Insurance Services, 100 California St., San Francisco, CA 94111  
MGA International, 419 Park Avenue South, New York, NY 10016  
Midland Insurance Co., 160 Water St., New York, N.Y. 10038  
United States P&I Agency, Inc., 80 Maiden Lane, New York, NY 10038

## JOINER—Watertight Doors—Paneling

Advanced Structures Corp., 235 W. Industry Ct., Deer Park, NY 11729  
Bailey Distributors, Inc., 74 Sullivan St., Brooklyn, NY 11231  
Isolamin Panels, c/o Consafe, Inc., P.O. Box 40339, Houston, TX 77040  
Masolite Commercial Division, Dover, OH 44622  
Megador Inc., 441 Lexington Ave., Suite 903, New York, NY 10017  
Simpson Timber Company, Third & Franklin, Shelton, WA 98584  
Walz & Krenzer, Inc., 400 Trabold Road, Rochester, NY 14624

## KEEL COOLERS

R.W. Fernstrum & Co., 1716 Eleventh Ave., Menominee, MI 49858  
Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062

## LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights

ACR Electronics, Inc., P.O. Box 2148, Hollywood, FL 33022  
Keuffel & Esser/Kratos, 20 Whippany Rd., Morrisstown, NJ 07960  
Midland-Ross Corp., Russellstoll Division, 530 W. Mt. Pleasant Ave., Livingston, NJ 07039

Oceanic Electrical Mfg. Co., 157 Perry St., New York, NY 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., 248-264 Third St., Elizabeth, NJ 07206-0434

SSAC Inc., P.O. Box 395, Liverpool, NY 13088

## LINE BLINDS

Stacey/Fetterolf Corp., P.O. Box 103, Skippock, PA 19474

## MACHINE TOOLS

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

## MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING

A-C Brake Co., 308 E. College St., Louisville, KY  
AMT Inc., 2400 N.W. 39th Ave., Miami, FL 33142  
Amermarine USA Inc., P.O. Box 9205, Baltimore, MD 21222  
American General/Levin Corp., 445 Littlefield Ave., So. San Francisco, CA 94080

Essex Machine Works, Essex, CT 06426

Golten Marine Co., Inc., 60 Van Brunt St., Brooklyn, NY 11231

Jered Brown Brothers Inc., 1300 Coolidge, P.O. Box 2006, Troy, MI 48007-2006

Rosan, Inc., 2901 West Coast Hwy., Newport Beach, CA 92663

Scotchman Industries, Inc., P.O. Box 850, Philip, SD 57567-0850

## 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

## MOORING SYSTEMS

Murdock Machine & Engineering Company of Texas, P.O. Box 2278, Irving, TX 75061

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

Adams & Chute, Huntington Road, Newtown, CT 06470  
Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Highway (Suite 1300), Arlington, VA 22202

# BUYERS DIRECTORY

(continued)

Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130  
Bretagne ACB Corp., 344 Camp St., Suite 1000, New Orleans, LA 70130  
Carl G. Brimmekamp & Co., Inc., 102 Hamilton Ave., Stamford, CT 06902  
C.A.C.I., Inc., 1815 No. Fort Myer Dr., Arlington, VA 22209  
C.D.I. Marine Co., 5520 Los Santos Way, Suite 600, Jacksonville, FL 32211  
C.T. Marine, 18 Church Street, Georgetown, CT 06829  
Phillips Cartner & Co., Inc., 203 So. Union St., Alexandria, VA 22314  
Century Engineering, Inc., 32 West Rd., Towson, MD 21204  
Childs Engineering Corp., Box 333, Medfield, Mass. 02052  
John P. Calletti & 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  
Design Associates Inc., 14360 Chef Menteur Highway, New Orleans, LA 70129  
Designers & Planners, Inc., 1725 Jefferson Davis Highway, Suite 700, Arlington, VA 22202  
ECO Inc., 1036 Cape St. Claire Center, Annapolis, MD 21401  
Encon Management & Engineering Consultant Services, P.O. Box 7760, Beaumont, TX 77706  
Fleetweather Ocean Services, Inc., R. # 2, Box 260, Hopewell Junction, NY 12533  
Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050  
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., 66 Long Wharf, Boston, MA 02110  
The Glosten Associates, Inc., 610 Colman Bldg., 811 First Ave., Seattle, WA 98104  
Phillip Gresser Associates, Ltd., 3250 South Ocean Blvd., Palm Beach, FL 33480  
Morris Guralnick Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107  
Hamilton Cornell Associates, Box 188, Snug Harbor Station, Duxbury, MA 02331  
J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048  
Hi-Test Laboratories, Inc., P.O. Box 226, Buckingham C.H., VA 23921  
Hoffman Maritime Consultants Inc., P.O. Box 186, Glen Head, NY 11545  
HydroComp, Inc., 10 Culls Road, P.O. Box 865, Durham, NH 03824  
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  
J.L. Konopasek & Associates, 3523 Scrimshaw Dr., Jacksonville, FL 32217  
James S. Kroger & Co., Inc., 3333 Rice St., Miami, Fla. 33133  
Rodney E. Lay & Associates, 13891 Atlantic Blvd., Jacksonville, FL 32225  
Alan C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063  
John J. McMullen Associates, Inc., 1 World Trade Center, New York, N.Y. 10048  
MacLear & Harris, Inc., 28 West 44 Street, New York, N.Y. 10036  
Fendall Marbury, 1933 Lincoln Drive, Annapolis, MD 21401  
Marine Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114  
Marine Design Inc., 401 Broad Hollow Road, Rte. 110, Melville, N.Y. 11746  
Marine Power Associates, 4475 Mission Blvd., Suite 235, San Diego, CA 92109  
Marine Technical Associates, Inc., 95 River Rd., Hoboken, NJ 07030  
George E. Meese, 194 Acton Rd., Annapolis, MD 21403  
Metritape Inc., P.O. Box 2366, Littleton, MA 01460  
R. Carter Morrell, 715 S. Cherokee, Bartlesville, OK 74003  
NKF Engineering Assoc., Inc., 8150 Leesburg Pike, Vienna, VA 22202  
Nelson & Associates, Inc., 610 Northwest 183rd St., Miami, FL 33169  
New England Engineering & Marine Services, Rt. 2, Box 50, York, ME 03909  
Nickum & Spaulding Associates, Inc., 2701 First Ave., Seattle, WA 98121  
Northern Marine, P.O. Box 1169, Traverse City, MI 49685  
Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114  
PRC Guralnick, 5252 Balboa Ave., San Diego, CA 92117  
Pearlson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33156  
S.L. Petchul, Inc., 1380 S.W. 57th Avenue, Fort Lauderdale, FL 33317  
Precision Systems Engineering, 8248 Eastgate Dr., Mt. Laurel, NJ 08054  
M. Rosenblatt & Son, Inc., 350 Broadway, New York, NY 10013 and 667 Mission St., San Francisco, CA 94105  
Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316  
SEACOR Systems Engineering Associates Corp., 19 Perina Blvd., Cherry Hill, NJ 08003 (Publications Division at Cherry Hill location)  
STV/Sanders & Thomas, Inc., 1745 Jefferson Davis Hwy., Arlington, VA 22202  
Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426  
Seaworthy Engine Systems, 17 Battery Place, New York, NY 10004  
George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007  
Simmons Associates, P.O. Box 760, Sarasota, FL 33578  
R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235  
J.F. Stroschein Associates, 666 Old Country Rd., Garden City, NY 11530  
Richard R. Taubler, Inc., 610 Carriage La., Dover, DE 19901  
Timco, 622 Azalea Road, Mobile, AL 36609  
Tracor Hydraulics, Inc., 7210 Pindell School Rd., Laurel, MD 20707  
Uhlig & Associates, Inc., 8295 SW 188th St., Miami, FL 33157  
Vevey Engineering Works Ltd., CH-1800 Vevey, Switzerland, U.S. Rep. Carl G. Brimmekamp & Co., Inc., 102 Hamilton Ave., Stamford, CT 06902  
Thomas B. Wilson, Associates, 1258 North Avalon Blvd., Wilmington, CA 90744  
Yacht Design Institute, 9 Main St., Blue Hill, ME 04614  
**NAVIGATION & COMMUNICATIONS EQUIPMENT**  
American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526  
Anschutz & Co. GmbH, Postfach 6040, D-2300 Kiel 14, West Germany  
Atkinson Dynamics, Section 6, 10 West Orange Ave., South San Francisco, CA 94080  
CMC Communications Inc., 5479 Jetport Industrial Blvd., Tampa, FL 33614  
COMSAT World Systems, 950 L'Enfant Plaza, S.W., Suite 6151 Washington, D.C. 20024  
Cybernet International, Inc., 7 Powder Horn Dr., Warren, NJ 07060  
A/S Elektrisk Bureau, P.O. Box 98, N-1360 Nesbru, Norway  
Electro-Nav Inc., 840 Bond Street, Elizabeth, NJ 07201  
EPSCO Marine, 550 Wholesalers Parkway, Harahan, LA 70123  
Fleet Marine, 1820 N.E. 146th Street, North Miami, FL 33181  
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080  
Harris Communications (RF Communications), 1680 University Avenue, Rochester, NY 14610  
Henschel Corp., 9 Hoyt Drive, Newburyport, MA 01950  
Hose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631  
Japan Radio Co., Ltd., Akasaka Twin Tower (Main), 17-22 Akasaka 2-chome, Minato-ku, Tokyo 107, Japan  
King Radio Corporation, 400 North Rodgers Rd., Olathe, KS 66062  
Kongsberg North America Inc., 400 Oser Ave., Hauppauge, NY 11738  
Kongsberg Vapenfabrikk, Norcontrol Division, P.O. Box 145, Horten 3191, Norway

Krupp Atlas-Elektronik, 1453 Pinewood St., Rahway, NJ 07065  
Lorain Electronics Corp., 2307 Leavitt Rd., Lorain, OH 44052  
Magnavox Navigation Systems, 2829 Maricopa Street, Torrance, CA 90503  
Magnum Distributors Inc., 1000 S. Dixie Hwy. #3, Pompano Beach, FL 33060  
Nav-Com, Inc., 9 Brandywine Drive, Deer Park, NY 11729  
Navidyne Corp., 11824 Fishing Point Drive, Newport News, VA 23606  
Perko Inc. (Lights), P.O. Box 6400D, Miami, FL 33164  
Rocal-Decca Marine, Inc., 4200 23rd Avenue West, Seattle, WA 98199  
Radar Devices, Inc., 2955 Merced Street, San Leandro, CA 94577  
Radio-Holland USA, Inc., 6033 South Loop East, Houston, TX 77033  
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 Resler Rd., Glen Burnie, MD 21061  
Rivertronics, P.O. Box 247, Godfrey, IL 62035  
Robertson Auto Pilot, 400 Oser Ave., Hauppauge, NY 11738  
Selesmar S.p.A., Casella Postale 9, 50020 Montagnana Val Di Pesa, Firenze, Italy  
Servo Corporation of America, 111 New South Road, Hicksville, NY 11802  
Simrad, Inc., 2208 N.W. Market St., Suite 600, Seattle, WA 98107  
Sperry Corporation, 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  
**OILS—Marine—Additives**  
Exxon Company, U.S.A., Room 2323 AH, P.O. Box 2180, Houston Tx 77001  
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., 535 Madison Ave., New York, NY 10022  
Mobil Oil Corp., 150 East 42 Street, New York, NY 10017  
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 Inc. (USA), 3721 Lapas Dr., P.O. Box 18312, Houston, TX 77223-9989  
Butterworth Systems (UK), 123 Beddington Lane, Croydon CR9 4NX, England  
Centrica, Inc. (Westfalia Separators), 100 Fairway Court, Northvale, NJ 07647  
Dahl Manufacturing, Inc., 2521 Railroad Ave., Ceres, CA 95307  
Hyde Products, Inc. 810 Sharon Dr., Westlake, OH 44148  
Microphor, Inc., P.O. Box 490, Willits, CA 95490  
Marine Moisture Control Co., 60 Inip Dr., Inwood, NY 11696  
National Fluid Separators, Inc., 1239 Hanley Industrial Court, St. Louis, MO 63144  
PACE Maine Systems, Div. of St. Louis Ship, 611 E. Marceau St., St. Louis, MO 63111  
Phoenix Oil Refiner Co., Inc., 330 Hill Ave., Nashville, TN 37210  
**PAINTS—COATINGS—CORROSION CONTROL**  
American Abrasive Metals, 460 Coit Street, Irvington, NJ 07111  
Ameron, 4700 Ramona Blvd., Monterey Park, CA 91754  
Argo Marine, 140 Franklin St., New York, NY 10013  
Bareco, 6910 East 14th St., Tulsa, OK 74112  
A.W. Chesterton Co., Middlesex Industrial Park, Rt. 93, Stoneham, MA 02180  
Chugoku Marine Paints (U.S.A.) Inc., 1290 Ave. of Americas, New York, NY 10104  
CLEMCO, P.O. Box 7680, San Francisco, CA 94120  
"CONSOL" manufactured by Contact Paint & Chemical Co. Inc., 200 S. Franklinton Rd., Baltimore, MD 21223  
Dampney Company, Inc., 85 Paris St., Everett, MA 02149  
Devoe Marine Coatings Co., P.O. Box 7600, Louisville, KY 40207  
Drew Ameroid Marine, One Drew Chemical Plaza, Boonton, NJ 07005  
E.I. Dupont De Nemours & Co., Inc., Nemours Bldg. Rm. N-2504-2 Wilmington, DE 19898  
Esgard, Box 2698, Lafayette, LA 70502  
Eureka Chemical Company, 234 Lawrence Avenue, So. San Francisco, CA 94080  
Glidden Coatings & Resins, Architectural & Maintenance, 925 Euclid Ave., Cleveland, OH 44115  
Grow Group, Inc., 200 Park Ave., New York, NY 10017  
Hempel Marine Paints, Inc., Foal of Currie Ave., Wallington, NJ 07057, 2425 Fountainview, Suite 340, Houston, TX 77057, P.O. Box 10265, New Orleans, LA 70181  
International Paint Company, Inc., 2270 Morris Avenue, Union, NJ 07083  
Jaegle Paint Co., Inc., 1912 Darby Rd., Havertown, PA 19083  
John Marine Coatings Inc., 840 Key Hwy., Baltimore, MD 21230  
Magnus Maritec International Inc., 150 Roosevelt Pl., P.O. Box 150, Palisades Park, NY 07650  
Norton Chemplast, 309-150 Dey Rd., Wayne, NJ 07470  
Palmer Products Inc., P.O. Box 8, Worcester, MA 01490  
Pile-Gard\* Manufactured by Osmose-Marine Div., P.O. Drawer 0, Griffin, GA 30224  
Products Research & Chemical Corp., 5454 San Fernando Rd., Glendale, CA 91203  
Seaguard, 4030 Seaguard Ave., Portsmouth, VA 23705  
Selby, Battersby & Company, 5220 Whiby Avenue, Philadelphia, PA 19143  
Sermatech International, 4401 SermeTel Dr., Moss Point, MS 39563  
**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**  
Cajon Company, 9760 Shepard Rd., Macedonia, OH 44056  
Camlock Flange Sales Corp., 60 Inip Dr., Inwood, NY 11696  
Crowford Fitting Company, 29500 Solon Rd., Solon, OH 44139  
Hydro-Craft, Inc., 1821 Rochester Industrial Dr., Rochester, MI 48063  
Knights Piping Inc., 5309 Industrial Rd., Pascagoula, MS 39567  
Metropolitan Plumbing Supply Corp., 5000 Second St., Long Island City, NY 11101  
Penco Div./Hudson Engineering Co., One World Trade Center, Suite 3000, New York, NY 10048  
Selkirk Metalbestos, Box 19000, Greensboro, NC 27419  
Stauff Corporation, 21-31 Industrial Park, Waldwick, NJ 07463  
**PLASTICS—Marine Applications**  
Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231  
**PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines**  
American Lohmann Corp., 1415 Chestnut Ave., Hillside, NJ 07205  
Aquamaster, 4125 9th Ave., Seattle, WA 98107  
Armo Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45043  
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150  
Bergen Diesel Inc., 2110 1-10 Service Rd., Kenner, LA 70062  
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081  
Bombardier, 1051 Dickson, Montreal, Quebec, Canada H1N 2H7  
Burmeister & Wain Alpha Diesel AS, DK-1400 Copenhagen K, Denmark  
Capitol Gears, 349 N. Hamline Ave., St. Paul, Mn. 55104  
Caterpillar Engine Division, 100 N.E. Adams, Peoria, IL 61629  
Cincinnati Gear Co., 5657 Wooster Pike, Cincinnati, OH 45227  
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  
Daihatsu Diesel (USA) Inc., 180 Adams Ave., Hauppauge, NY 11788  
Dertz Corp., 7585 Ponce de Leon Circle, Atlanta, GA 30340  
Diesel Marine International, Ltd., c/o NORSHIPCO, P.O. Box 2100, Norfolk, VA 23501  
Elliott Company, 1809 Sheridan Ave., Northingfield, OH 45505  
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  
Gollan Marine Co., Inc., 160 Van Brunt St., Brooklyn, NY 11231  
Harbormaster, 36 Hancock St., Quincy, MA 02171  
Isotta Fraschini S.p.A., c/o Italian Aerospace Industries (U.S.A.), Inc., 1235 Jefferson Davis Hwy., Suite 500, Arlington, VA 22202  
KHD Canada Inc., 180 Rue de Normandie, Boucherville, Quebec J4B 5S7, Canada  
KaMeWa, P.O. Box 1010, S-68101, Kristinehamn, Sweden  
KaMeWa, 1800 West Loop So., Suite 1620, Houston, TX 77027  
Krupp Mak Diesels, Inc., 4329-33 Di Paolo Center, Glenview, IL 60025  
Lips Propellers, 3617 Koppens Way, Chesapeake, VA 23323  
Lufkin Industries, Inc., P.O. Box 749, Lufkin, TX 75901  
M.A.N.-B&W Diesel, 2, Ostervej, DK-4960 Holeby, Denmark  
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  
MWM-Murphy Diesel, 12 Greenway Plaza, Suite 1100, Houston, TX 77046  
Mapeco Products, Inc., 20 Vesey St., New York, NY 10007  
Maritime Industries Ltd., 6375 Laurel St. Burnaby, B.C., Canada V5B3B3  
Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507  
National Marine Service Louisiana, Inc., 222 Bayou Rd., Belle Chasse, LA 70037  
Omnitruster Inc., 9515 Sorensen Ave., Santa Fe Springs, CA 90670  
Penske GM Power, Inc., 600 Parsippany Road, Parsippany, NJ 07054  
Inland Water Propulsion Systems, Inc., 580 Walnut St., Cincinnati, OH 45201  
Propulsion Systems, Inc., 21213 76 Ave. So., Kent, WA 98032  
SACM (Societe Alsocienne 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 St., Miami, FL 33166  
Karl Senner, Inc., P.O. Box 10055, New Orleans, LA 70181  
Skinner Engine Company, P.O. Box 1149, Erie, PA 16512  
Stewart & Stevenson Services, Inc., P.O. Box 1637, Houston, TX 77251-1637  
Sulzer Brothers, Dept. Diesel Engines, CH-8401 Winterthur, Switzerland  
Tech Development Inc., 6800 Poe Ave., P.O. Box 14557, Dayton, Oh 45414  
Transamerica Delaval Inc., Engine & Compressor Div., 550 85th Ave., Oakland, CA 94621  
Transamerica Delaval, Inc., Turbine & Compressor Div., P.O. Box 8788, Trenton, N.J. 08650  
Turbine Specialties, Inc., P.O. Box 207, West State Street Road, Salina, KS 67401  
Turbine Specialties/Gulf Coast, Inc., 1900 Industrial Blvd., Harvey, LA 70058  
Ulstein Trading Ltd. A/S, N-6-65, Ulsteinvik, Norway  
Voith Schneider America, 159 Great Neck Rd., Ste 200, Great Neck, NY 11021  
Valva Penta of America, P.O. Box 927, Rockleigh, NJ 07647  
WABCO Fluid Power, an American-Standard Company, 1953 Mercer Rd., Lexington, KY 40505  
Wartsila Power Inc., 5132 Taravella Rd., P.O. Box 868, Marrero, LA 70072  
Waukesha Engine Division, Waukesha, WI 53187  
Welco Industries, Inc., 9027 Shell Rd., Cincinnati, OH 45236  
ZF of North America, Inc., 3225 Commercial Avenue, Northbrook, IL 60062  
ZF of North America, Inc. (Motive Power Corporation, P.O. Box 365, Mineola, NY 11501)  
**PUMPS—Repairs—Drives**  
Argo Marine, 140 Franklin St., New York, NY 10013  
Jim's Pump Repair, 48-55 36th St., Long Island City, NY 11101  
Megator Corporation, 562 Alpha Drive, Pittsburgh, PA 15238  
Penco Div./Hudson Engineering Co., One World Trade Center, Suite 3000, New York, NY 10048  
Sims Pump Valve Co., Inc., 1314 Park Ave., Hoboken, NJ 07030  
Transamerica Delaval, Pyramid Pump Div., P.O. Box 447, Monroe, NC 28110  
Vita Motivator Company, 200 West 20th St., New York, NY 10011  
Warren Pumps Division, Bridges Avenue, Warren, MA 01083  
Wilden Pump & Engineering Co., 22060 Van Buren St., P.O. Box 845, Colton, CA 92324  
**REFRIGERATION—Refrigerant Valves**  
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231  
Port Refrigeration Div., 157 Perry St., New York, NY 10014  
**ROLLING SYSTEMS**  
Hilman, Inc., 2604 Atlantic Ave., Wall (Belmar), NJ 07719  
**ROPE—Manila—Nylon—Hawfers—Fibers**  
American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431  
Atlantic Cordage Corp., 60 Grant Avenue, Carteret, NJ 07008  
DuPont Co., KEVLAR Aramid Fiber, Room G-15465, Wilmington, DE 19898  
Norton Chemplast, 309-150 Dey Rd., Wayne, NJ 07470  
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110  
Tubbs Cordage Company, P.O. Box 709, Orange, CA 92666  
Wall Industries, Inc., P.O. Box 560, Elkin, NC 28621  
**RUDDER ANGLE INDICATORS—STEERING**  
Hy-Drive America Corp., 3629 Vernon Blvd., Long Island City, NY 11106  
Marine Drive Systems, 519 Raritan Center, Edison, NJ 08817  
Robertson, 135 Fort Lee Rd., Leonia, NJ 07605  
**SAFETY EQUIPMENT**  
Wormald Fire Systems, One Stanton St., Marinette, WI 54143  
**SANITATION DEVICES—Pollution Control**  
Argo Marine, 140 Franklin St., New York, NY 10013  
Davitt Sales Inc., P.O. Box 232, Jefferson Valley, NY 10535  
Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111  
FAST Sewage Systems, Div. of St. Louis Ship, 611 East Marceau St., St. Louis, MO 63111  
Galar Metal A/S, P.O. Box 70, 4901 Tvedestrand, Norway  
Marine Moisture Control Co., Inc., 60 Inip Dr., Inwood, L.I., N.Y. 11696  
National Sanitation Foundation, P.O. Box 1468, Ann Arbor, MI 48105  
**SCAFFOLDING EQUIPMENT—Work Platforms**  
McCausey Lumber Co., 7751 Lyndon, Detroit, MI 48238  
Patent Scaffolding Co., One Bridge Plaza, Fort Lee, NJ 07024  
Trus-Joist Corp., P.O. Box 60 Boise, ID 83704  
**SCUTTLES/MANHOLE**  
Mock Manufacturing Inc., 777 Rutland Rd., Brooklyn, NY 11203  
**SHAFT SEALS, REVOLUTION INDICATOR EQUIPMENT**  
Bird-Johnson Co., 100 Norfolk St., Walpole, MA 02081  
Crone Packing Company, 435 Regina Dr., Clarkburg, MD 20734  
EG&G Sealol, Engineered Products Div., Marine Products Group, Warwick, RI 02888  
Norton Chemplast, 309-150 Dey Rd., Wayne, NJ 07470  
Penco Div./Hudson Engineering Co., One World Trade Center, Suite 3000, New York, NY 10048  
**SHIPBREAKING—Salvage**  
The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202  
Fred Devine Diving & Salvage, Inc., 6211 N. Ensign, Swan Island, Portland, OR 97217  
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201  
**SHIPBUILDING EQUIPMENT**  
Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, FL 33156  
Total Transportation System Inc., 813 Forrest Dr., Newport News, VA 23606  
Total Transportation Systems (International) A/S, Bjornegarden, P.O. Box 248, N 5201, Os, Norway  
**SHIPBUILDING STEEL**  
Armo Steel Corp., 703 Curtis St., Middletown, Ohio 45042  
Bethlehem Steel Corp., Martin Tower, Bethlehem, PA 18018  
Tilne, P.O. Box 729, Albany OR 97321  
United States Steel Corp., Christy Park Plant, 2214 Walnut St., McKeesport, PA 15132  
Welded Beam Company, P.O. Box 280, Perry OH 44081  
**SHIPBUILDING—Repairs, Maintenance, Drydocking**  
Alabama Maritime Corp., P.O. Box 3026, Mobile, AL 36652  
Amsterdam Drydock Company, Post Box 3006, 1003 AA, Amsterdam, Holland  
Arsenale Triestino-San Marco Shipyard, Trieste, Italy, U.S. Rep: Marine Technologies & Brokerage, 33 Rector St., New York, NY 10006



Asmar Shipyards Co., Asilleros y Maestranzas de la Armada, Prat 856, Piso 14, Casilla 150-V, Valparaiso, Chile, S.A.  
 Asilleros Balboa, S.A., c/o Jackson Marine Corp., 17 Battery Place, New York, NY 10004  
 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  
 Bath Iron Works Corp., 700 Washington St., Bath, ME 04530  
 Bay Shipbuilding Corp., 605 North 3rd Ave., Sturgeon Bay, WI 54235  
 Bender Shipbuilding & Repair Co., Inc., P.O. Box 42, Mobile, AL 36601  
 Bethlehem Steel Corp., Martin Tower, Bethlehem, PA 18018  
 Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081  
 Burmeister & Wain Skibsvoerft A/S, P.O. Box 2122, Refshaleoen-1015 Copenhagen K-Denmark  
 Burrard Yarrow Corporation, P.O. Box 86099, North Vancouver, B.C., Canada  
 Caneco Shipyard, Rua Carlos Seidl, 714, Caju, 20.931, Rio de Janeiro, RJ, Brazil  
 Cantieri Navali Riuniti, Via Cipro, 11, 16100 Genova, Italy  
 Carrington Slipways Pty. Ltd., Old Punt Rd., Tomago NSW Australia 2322  
 Conrad Industries, P.O. Box 790, Morgan City, La. 70380  
 Curacao Drydock Company Inc., 26 Broadway, Suite 741, New York, NY 10004  
 Daewoo International (America) Corp., 437 Madison Ave., New York, NY 10022  
 Daewoo Shipbuilding & Heavy Machinery Ltd., Ayangri, Changsung-PO, Kahe-Kun, Kyungnam, Korea  
 Davie Shipbuilding Ltd., P.O. Box 130, Levis, Quebec, Canada G6V6N7  
 Darby Ltd., Military Road, 1 Industrial Sites, West Bank, 5201 East London, Republic of South Africa  
 Dravo Marine Equipment Company, Neville Island, Pittsburgh, PA 15225  
 Dubai Drydocks, P.O. Box 8988, Dubai, United Arab Emirates—U.S.A.  
 Agents: Keppel Marine Agencies Inc., 26 Broadway, New York, NY 10004, 6240 Richmond Ave., Houston, TX 77057  
 Eastern Marine, Inc., P.O. Box 1009, Panama City, FL 32401  
 Equitable Shipyards, Inc., P.O. Box 8001, New Orleans, LA 70182  
 FMC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208  
 For East Livingston Shipbuilding Ltd., 31 Shipyard Rd., Jurong Town, Singapore 2262  
 Genstar Marine, 10 Pemberton Ave., No. Vancouver, B.C., Canada V7P 2R1  
 Gladding-Hearn Shipbuilding Corp., 1 Riverside Ave., Somerset, MA 02725  
 Gotten Marine Co., Inc., 60 Van Brunt St., Brooklyn, NY 11231  
 HBC Barge, Inc., Grant Building, Pittsburgh, PA 15219  
 Halter Marine, Inc., P.O. Box 29266, New Orleans, LA 70189  
 Hoboken Shipyards, Inc., 1301 Hudson St., Hoboken, NJ 07030  
 Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central Post Office, Kowloon, Hong Kong  
 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  
 Jakobson Shipyard Inc., P.O. Box 329, Oyster Bay, NY 11771  
 Jeffboat, Inc., Jeffersonville, Ind. 47130  
 Keppel Shipyard Limited, 325 Telok Blangah Road, P.O. Box 2169, Singapore 0409  
 Koch Ellis Barge & Ship Service, P.O. Box 9130, Westwego, LA 70094  
 Kane Corp., P.O. Box 6, SF-05801, Hyvinkaa, Finland  
 Leevo Corporation, P.O. Box 2607, Morgan City, LA 70381  
 Paul Lindenau GmbH & Co., Schiffswerft u. Maschinenfabrik, D-2300 Kiel-Friedrichsorf, West Germany  
 Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134  
 M.A.N. GHH Sierkrade, P.O.B. 110240, D-4200 Oberhausen 11, West Germany  
 McDermott, Incorporated, 1010 Common Street, New Orleans, LA 77227  
 Main Iron Works, Inc. P.O. Box 1918, Houma, LA 70361  
 Marinette Maine Corporation, Marinette, WI 54143  
 Jos. L. Meyer GmbH & Co., P.O. Box 2990 Papenburg 1, West Germany  
 Mitsubishi Heavy Industries, Ltd., 5-1, Marunochi 2-chome, Chiyoda-ku, Tokyo, 100 Japan  
 Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655  
 Moran Shipping Agencies, 602 Sawyer, Suite 200, Houston, TX 77007  
 Moss Point Marine Inc., P.O. Box 1310, Escalawpa, MS 39552  
 Nashville Bridge Company, P.O. Box 239, Nashville, TN 37202  
 National Marine Service (Shipyard Division), P.O. Box 38, Hartford, IL 62048  
 National Steel & Shipbuilding Corp., San Diego, Calif. 92112  
 Neorion Shipyards Syros Ltd., Syros, Greece—U.S.A. Agents: Keppel Marine Agencies Inc., 26 Broadway, New York, NY 10004, 6420 Richmond Ave., Houston TX 77057  
 Newport News Shipbuilding & Dry Dock Co., 4101 Washington Ave., Newport News, Va. 23607  
 North Florida Shipyards, P.O. Box 3863, Jacksonville, FL 32206  
 O.A.R.N. (Officine Allestimento-Riprazioni Nav), P.O. Box 1395, Genoa, Italy 16100  
 Overseas Shipyards, Inc., 21 West St., New York, NY 10006  
 Pennsylvania Shipbuilding, P.O. Box 442, Chester, PA 19016  
 Port Allen Marine Service, P.O. Box 108, Port Allen, LA 70767  
 Promet (PTE) Ltd., 27 Pandam Rd., Jurong Industrial Estate, Singapore 22  
 Promet Marine Services Corp., 242 Allens Ave., Providence, RI 02905  
 Puerto Rico Drydock & Marine Terminals, Inc., P.O. Box 2209, San Juan, Puerto Rico 00903  
 Rauma-Repola, 26100 Rauma 10, Finland  
 Samsung Shipbuilding & Heavy Industries Co., Ltd., Samsung Main Bldg. 250, 2Ka, Taepyeong-ro, Chung-ku, Seoul, Korea  
 St. Louis Ship, 611 East Marceau St., St. Louis, MO 63111  
 Savannah Shipyard Co., P.O. Box 787, Savannah, GA 31402  
 Schiess Defries, Postfach 111146, Schiess-Str. 61, D-4000 Dusseldorf 11, West Germany  
 Service Machine Group, Inc., P.O. Box 2664, Morgan City, LA 70381  
 Southbay Boat Inc., P.O. Box 13308, San Diego, CA 92113  
 Southern Oregon Marine Engineering and Construction, P.O. Box 1220, Coos Bay, OR 97420  
 Southwest Marine, Inc., P.O. Box 13308, San Diego, Co 92113  
 Swiftships Inc., P.O. Box 1908, Morgan City, LA 70380  
 Tampa Shipyards Inc., P.O. Box 1277, Tampa, FL 33601  
 Thomas Marine, 37 Bransford St., Patchogue, NY 11772  
 Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004  
 Tracor Marine, P.O. Box 13107, Fort Everglades, Fla. 33316  
 Union Dry Dock & Repair Co., Port of Pershing Road, Weehawken, N.J. 07087  
 Vanguard Services, P.O. Drawer A, New Johnsonville, TN 37134  
 Verolme Estaleiros Reunidos Do Brasil S.A., Rua Buenos Aires, 68, Rio de Janeiro—RJ—Brazil  
 Vickers Cockatoo Dockyard Pty. Ltd., P.O. Box 162 Milsons Point, N.S.W. 2061, Australia  
 Walker Boat, P.O. Box 729, Paducah, KY 42002-0729  
 Zidell Explorations, Inc., 3121 S.W. Moody Street, Portland, OR 97201

**SHIPPING—PACKING**  
 Pilotage Consultants, Inc., P.O. Box 2046, New Hyde Park, NY 11040

**SILENCERS**  
 Riley-Beard, P.O. Box 31115, Shreveport, LA 71130

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

**STUFFING BOXES**  
 Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062  
 Smith-Meeker Engineering Co., 157 Chambers Street, New York, NY 10007

**SURVEYORS AND CONSULTANTS**  
 Booz Allen & Hamilton Inc., Crystal Square 2, Suite 1100, 1725 Jefferson Davis Highway, Arlington, VA  
 Francis B. Crocco, Inc., P.O. Box 1411, San Juan, Puerto Rico 00903  
 Frank Jeffrey & Assoc., 5201 Westbank Exp., Suite 206, Marrero, LA 70073  
 M.A. Stream Associates, Inc., 400 Second Ave. W., Seattle, WA 98119

**SURVIVAL EQUIPMENT**

Dunlap Boat Mfg., 2940 West Pico Blvd., Los Angeles, CA 90006

**TANK CLEANING**  
 Butterworth Inc. (USA), 3721 Lapas Dr., P.O. Box 18312, Houston, TX 77223-9989  
 Butterworth Systems (UK), 123 Beddington Lane, Croydon CR9 4NX, England  
 Gamajet Equipment Div., Sybron Chemicals Inc., 121 S. Maple Ave., So. San Francisco, CA 94080  
 Penco Div./Hudson Engineering Co., One World Trade Center, Suite 3000, New York, NY 10048  
 Petrochemical Services, Inc., 3820 Dauphine St., New Orleans, LA 70117

**TANK LEVELING INDICATORS**  
 Kongsberg North America Inc., 400 Oser Ave., Hauppauge, NY 11738  
 Marine Moisture Control Co., 60 Inip Dr., Inwood, NY 11696  
 Metal Goods Manufacturing Company, 309 W. Hensley Blvd., Bartlesville, OK 74003  
 Melritape, Inc., P.O. Box 2366, Littleton, MA 01460  
 Salwico Inc., 5 Marine View Plaza, Hoboken, NJ 07030  
 Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062

**TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.**

Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002  
 Bulkfleet Marine Corporation, 1800 West Loop So., Houston TX 77027  
 Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202  
 Jan Erik Dyvi A/S, P.O. Box 454, Sentrum, Norway  
 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  
 International Transport Contractors Holland B.V., 5 Kenaupark, P.O. Box 21, Haarlem, Holland  
 McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004  
 McDonough Marine Service, P.O. Box 26206, New Orleans, La.  
 Midland Affiliated Co., 580 Walnut St., Cincinnati, OH 45201  
 Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, N.Y. 10048  
 National Marine Service, Transport Div., 1750 Brentwood Blvd., St. Louis, MO 63144  
 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**

Camlack Flange Sales Corp., 60 Inip Dr., Inwood, NY 11696  
 Clow Corporation, 1375 Magnolia Ave., Corona, CA 91720  
 Dover Corporation, Norris Division, P.O. Box 1739, Tulsa, OK 74101  
 Elliott Manufacturing Co., Inc. (Remote Valve Operating Equipment), P.O. Box 773, Binghamton, NY 13902  
 Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207  
 Jamesbury Corp., 640 Lincoln Street, Worcester, MA 01605  
 Marine Moisture Control Co., 60 Inip Dr., Inwood, N.Y. 11696  
 Metropolitan Plumbing Supply Corp., 50-09 Second Street, Long Island City, NY 11101  
 Newmans Inc., 7500 E. Reading Pl., Tulsa, OK 74101  
 Pittsburgh Brass Manufacturing, Sandy Hill Rd., R.D. 6 Box 387-A, Irwin, PA 15642  
 Stacey/Fetterolf Corp., P.O. Box 103, Skippack, PA 19474  
 Stockham Valves & Fittings, Box 10326, Birmingham, AL 35202  
 Tate Temco, Inc., 1941 Lansdowne Road, Baltimore, MD 21227  
 Union Flonetics, P.O. Box 459, Clinton, PA 15026  
 Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928  
 Waukesha Bearings Corp., 405 Commerce St., P.O. Box 798, Waukesha, WI 53186  
 Westran Corporation, Valve Components Group, 4025 Remembrance Rd., N.W., Grand Rapids, MI 49504  
 S.S. White Industrial Products, 151 Old New Brunswick Rd., Piscataway, NJ 08854  
 Whitey Co., 318 Bishop Rd., Highland Heights, OH 44143  
 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

**VENTILATION DUCTING**

Flexaust Company, 11 Chestnut St., Amesbury, MA 01913

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Wallenius Lines, P.O. Box 17086, S-10432 Stockholm, Sweden

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 ICHCA Canada, P.O. Box 2366, Station D, Ottawa, Ontario, Canada K1P5W9

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 Aqua-Chem, Inc. P.O. Box 421, Milwaukee, WI 53201  
 Bull & Roberts, Inc., 785 Central Ave., Murray Hill, NJ 07974  
 Drew Chemical Corporation, One Drew Chemical Plaza, Boonton, NJ 07005  
 Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559  
 Marine Moisture Control, 60 Inip Dr., Inwood, NY 11696  
 MECO (Mechanical Equipment Company, Inc.), 861 Carondelet St., New Orleans, LA 70130  
 Riley-Beard, P.O. Box 31115, Shreveport, LA 71130  
 Village Marine Tec., 2000 W. 135th St., Gardena, CA 90249

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 KSM Fastening Systems Inc., 301 New Albany Rd., Moorestown, NJ 08057  
 Metallizing Co. of America, Inc., 321 So. Hamilton, Sullivan, IL 61951  
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 Oerlikon Welding Industries, Inc., P.O. Box 40964, Houston, TX 77240

**WINCHES AND FAIRLEADS**

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 CONMACO, Inc., 820 Kansas Ave., P.O. Box 5097, Kansas City, KS 66119  
 Fritz Culver, Inc., P.O. Box 569, Covington, LA 70434  
 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  
 Schoellhorn Albrecht, Div. of St. Louis Ship, 3460 So. Broadway, St. Louis, MO 63118  
 Smith Berger Marine Inc., 516 So. Chicago St., Seattle, WA 98108  
 Stanspec Corp., 13600 Deise Ave., Cleveland OH 44110  
 Superior-Lidgerwood-Mundy Corp., 1101 John Avenue, Superior, WI 54880

**WINDOWS**

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

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 Allantic Cordage Corp., 60 Grant Ave., Carteret, NJ 07008  
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 Seacoast Electric Supply Corp., 1505 Oliver St., Houston, TX 77007

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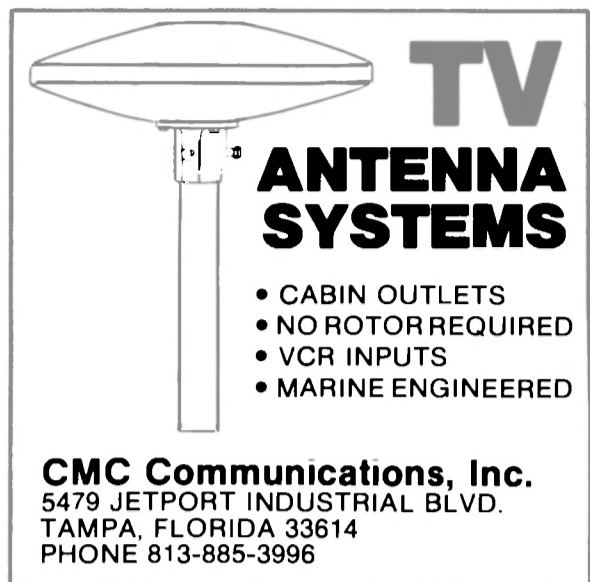
Allantis Services, Inc., 1057 Kings Ave., Jacksonville, FL 32207

**WIRE ROPE—Slings**

AISCO, 60 Grant Ave., Carteret, NJ 07008  
 Allantic Cordage Corp., 60 Grant Ave., Carteret, NJ 07008  
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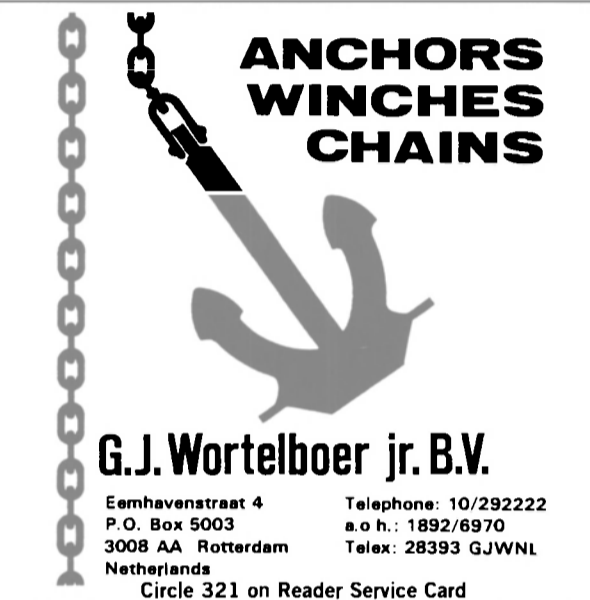


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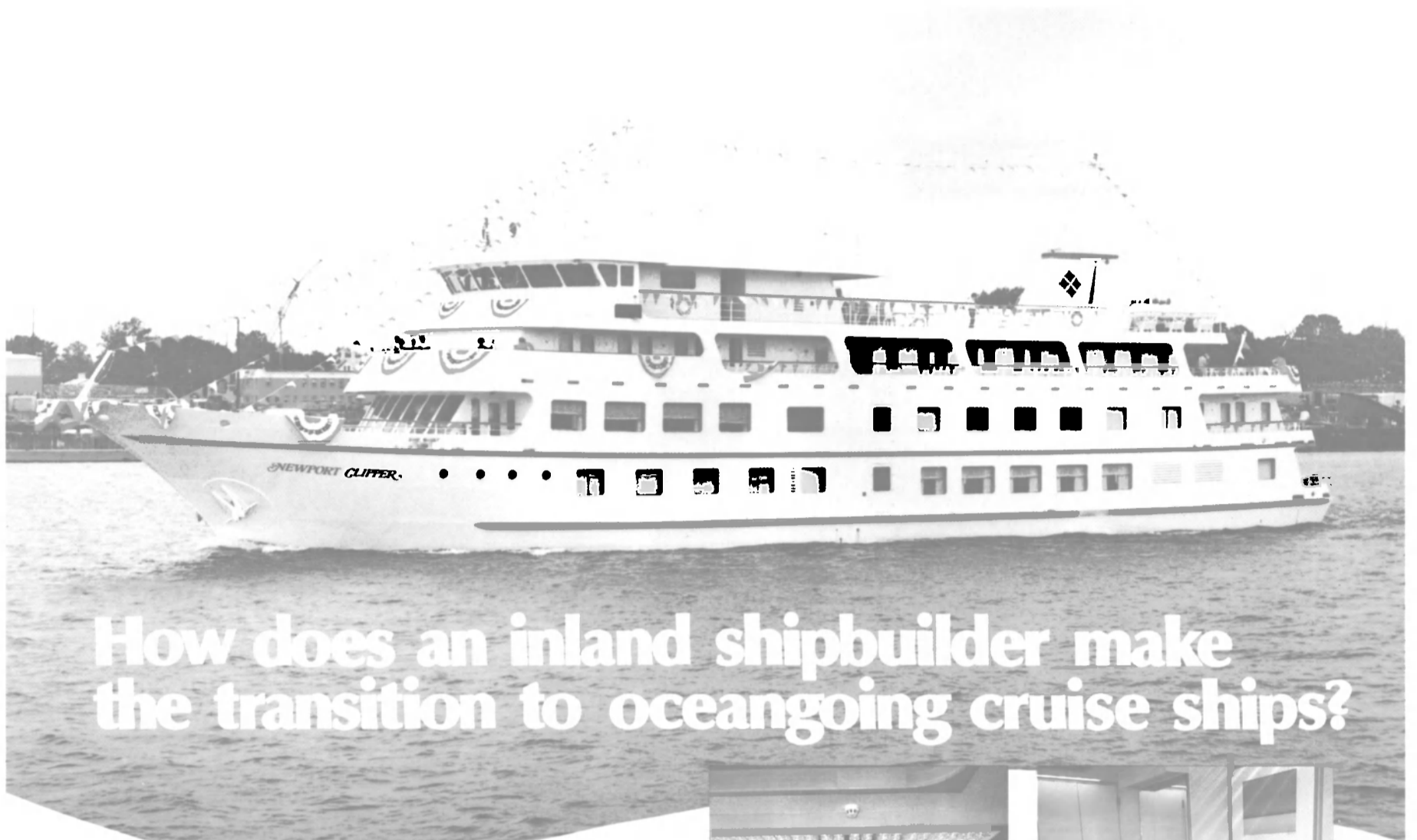
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