

# MARITIME REPORTER AND ENGINEERING NEWS

## Special Preview Issue SMM '80-HAMBURG and A.S.N.E. FALL MEETING



Hamburg Harbor

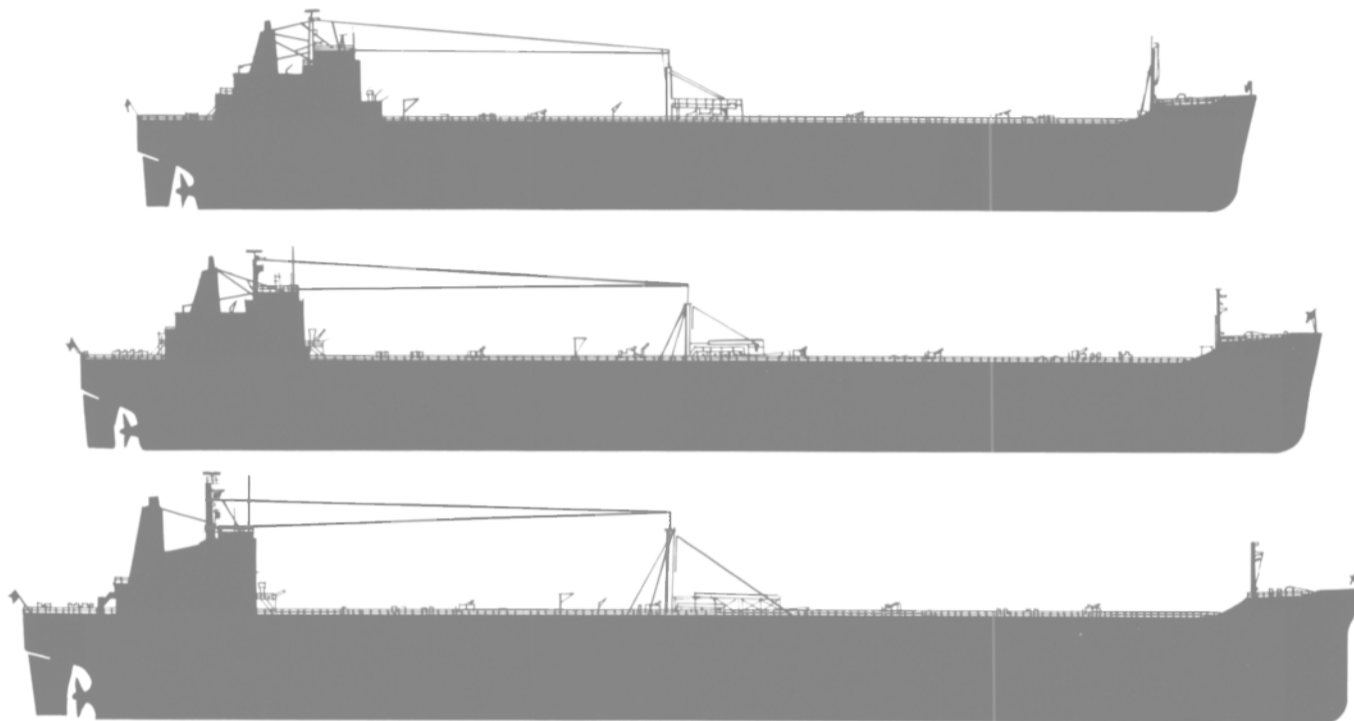
**"Ship, Machinery, Marine  
Technology International"  
Exhibition And Congress,  
Hamburg, Germany**  
(SEE PAGE 4)

**ASNE Ship Systems  
Symposium-New Jersey**  
(SEE PAGE 4)

**SEPTEMBER 1, 1980**

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# How are your tankers affected by the new USCG rules?



Where can you get your tankers retrofitted to comply with the USCG rules on inert gas systems, segregated ballast, designated clean ballast, and crude oil washing systems? How long will it take? What will it cost?

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Bethlehem's seven major shipyards in the United States add up to strong experience in both the building and repairing of tankers. And there is also our design arm, CTD. Bethlehem's Central Technical Division is world renowned for its innovative ship-systems' engineering and its bold advancements in ship design and construction technology. CTD has already developed retrofit concepts that satisfy the new Coast Guard rules for Bethlehem-built tankers. Our repair yards are well able—and are set—to handle the actual jobs of retrofitting.

But more! We'll gladly interpret the new rules applicable to your tankers and explain the many

compliance options available. If you like, we'll develop suitable concepts for retrofitting any of your tankers, and design and engineer the changes required. Then, where scheduling permits, we'll quote the job at one of our yards.

### Must act now, or...

June 1, 1981, the first deadline for compliance with the new rules, is not far away. Ship owners and operators who schedule retrofitting now may choose a layup time of convenience; those who wait may have to take the time slots that are left. If any!

Call Bethlehem now.

# BethShip



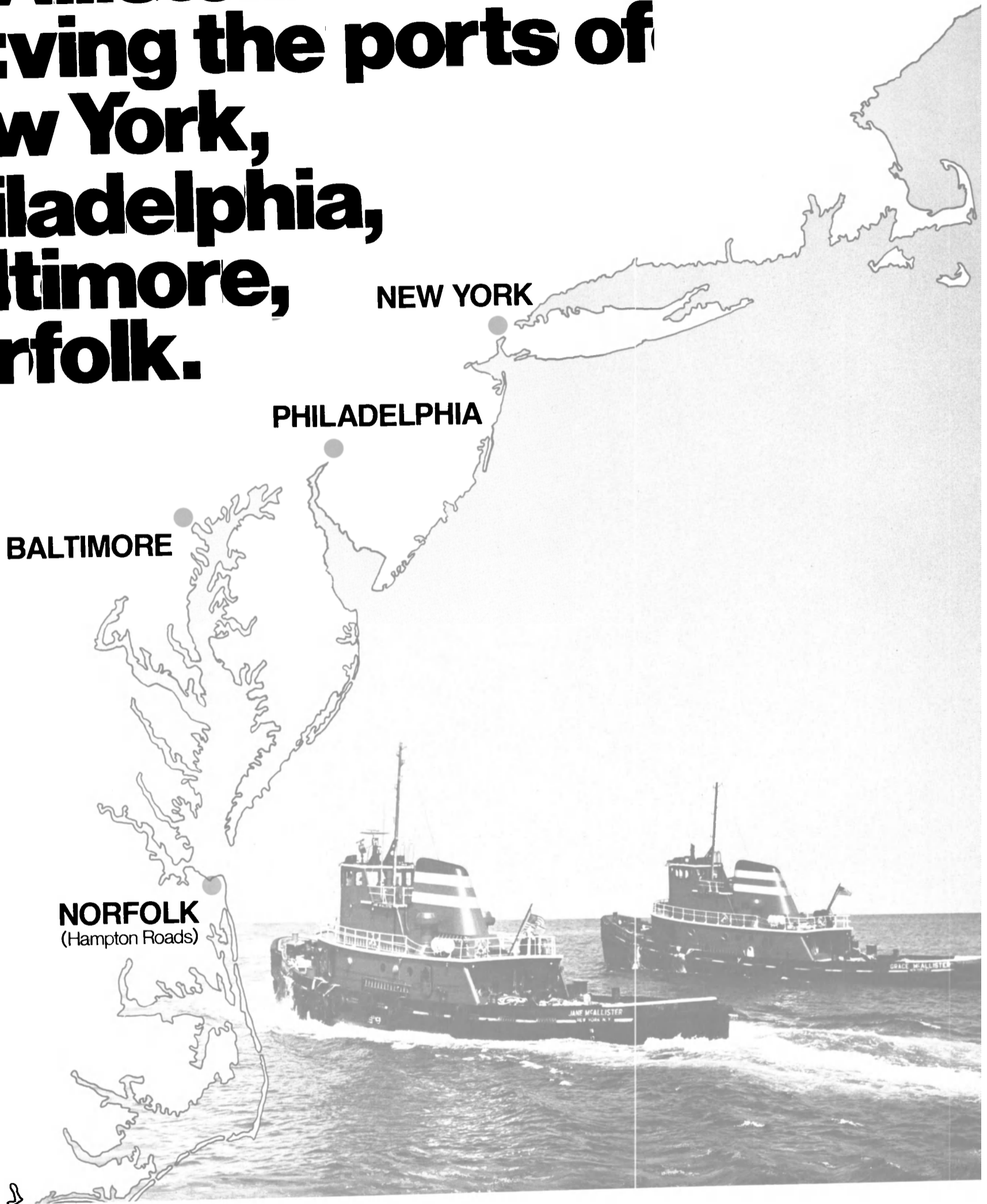
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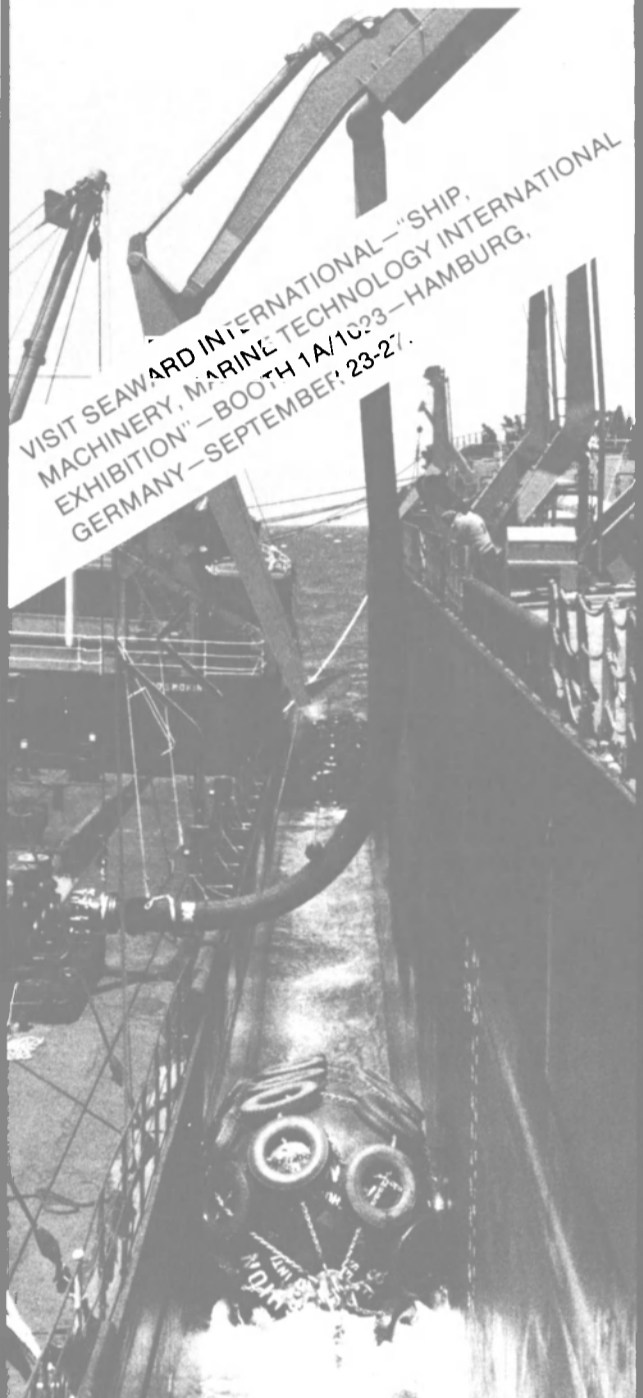


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## ON THE COVER

SMM '80 — 9th International Exhibition and Congress—Ship, Machinery, Marine Technology International—Hamburg, Germany.  
page 14

ASNE Fall Meeting — Ship Systems Symposium — Cherry Hill, New Jersey.  
page 64

### \$26-Million Title XI Approved By MarAd For Keyes Offshore Rig

The Maritime Administration has approved in principle an application from Keyes Offshore, Ltd., III, Houston, Texas, for a Title XI guarantee to aid in financing the construction of one mat supported jackup drilling rig.

Bethlehem Steel Corporation's Beaumont, Texas, facility is the builder of the rig, which will be capable of operating in water depths of up to 200 feet.

The Title XI guarantee will cover \$18,830,000 or approximately 72 percent of the estimated cost of \$26,031,000.

### Cove Companies Apply For Title XI On Four Ships To Cost \$286.4 Million

Cove Challenger Corporation, Cove Endeavor Corporation, Cove Resolute Corporation, and Cove Reserve Corporation—all subsidiaries of Cove Maritime Company, Inc., New York—have applied for Title XI guarantees to aid in financing the construction of four 52,200-bhp product tankers.

The 11,400-bhp, diesel-powered vessels are expected to operate in the Jones Act trades and in protected foreign trades.

If approved, the Title XI guarantees would cover \$250,610,500, or 87½ percent of the estimated total cost of \$286,421,000. Although a builder has not yet been proposed, the applicants anticipate the vessels would be delivered in 1981 and 1982.



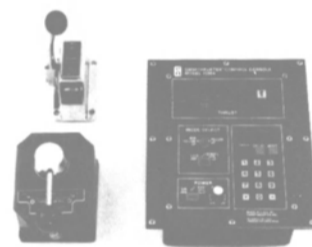
U.S. Navy Torpedo Recovery Vessel

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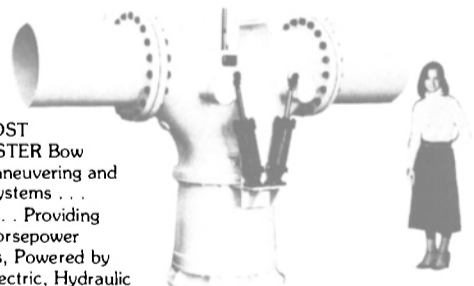
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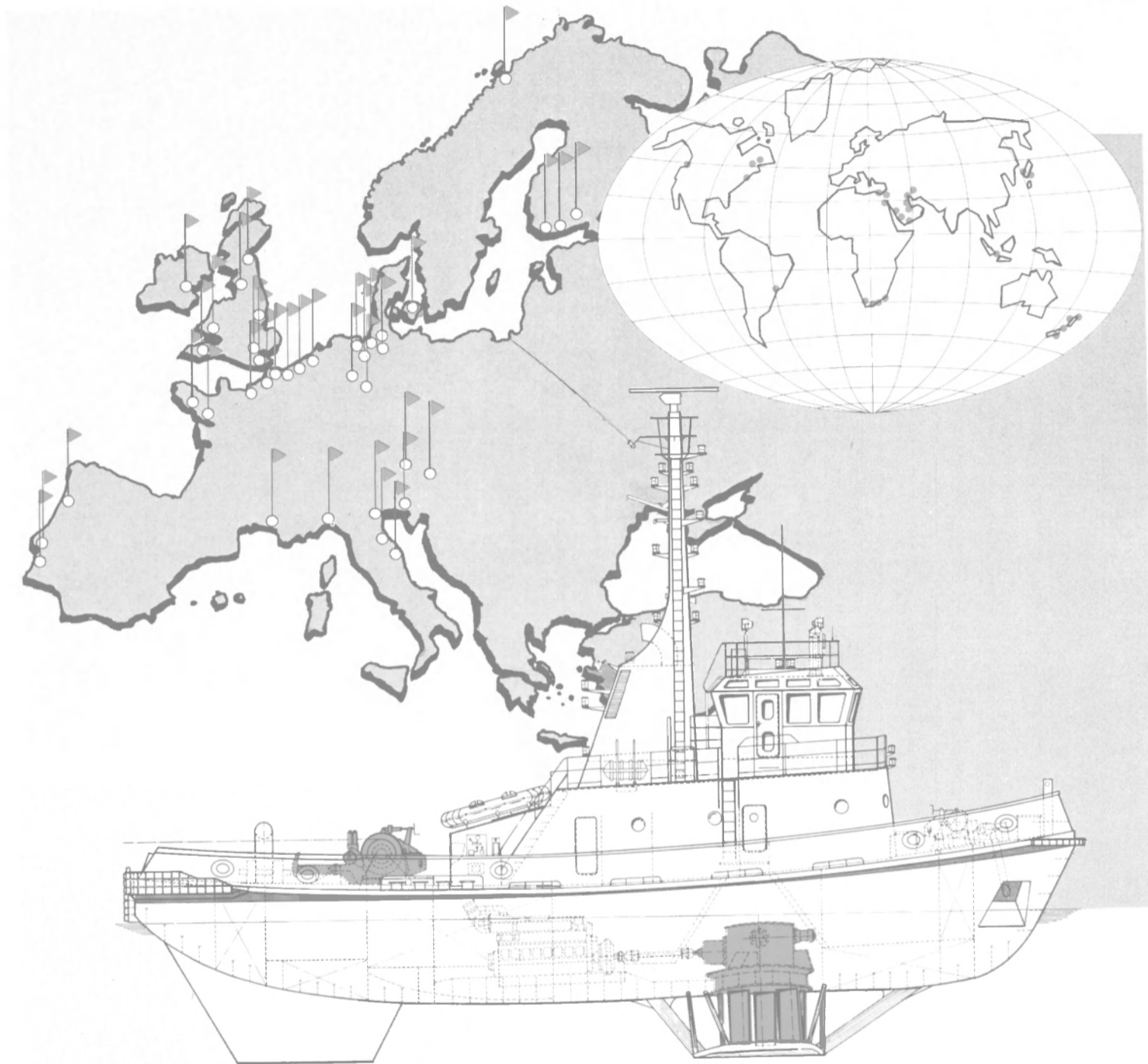
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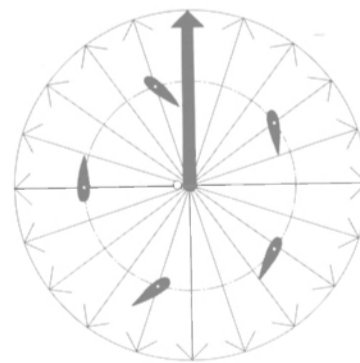
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**John J. O'Malley**  
**Founder And Publisher Of**  
**MARITIME REPORTER And**  
**Engineering News**

John J. O'Malley, the founder and publisher of MARITIME REPORTER and Engineering News magazine, died recently at his home in Bellerose, Long Island, N.Y., after a short illness.

Born in Brooklyn, N.Y., he attended St. John's University and was active in marine publishing for most of his business career.

Mr. O'Malley was associated with Marine Age magazine and Marine News magazine. He was a co-founder of the Marine Buyers Guide. He founded the fore-runner of MARITIME REPORTER and Engineering News, Maritime Activity Reports, Inc., in the

fall of 1939. The magazine grew steadily and prospered under Mr. O'Malley's direction during more than 40 years of continuous publication.

Mr. O'Malley was a member of The Society of Naval Architects and Marine Engineers, a member of the Council for SNAME from 1966-1968, and was a member of the SNAME Committee on Publications.

**Wheelock Will Head**  
**New Houston Office Of**  
**Dock Express Shipping**

Dock Express Shipping, BV, a Rotterdam-based, heavy-lift shipowner, has recently established a branch office in Houston. **Warren R. Wheelock**, vice president responsible for operations in the United States, Canada, and Mexico, will be the senior manager at the Houston office.

The Dock Express fleet includes three highly specialized sister vessels of approximately 13,000 deadweight tons. These vessels embody state-of-the-art technology in the marine transport field: their capabilities include 1,000 tons lifting capacity, a 2,000-ton-capacity roll-on/roll-off ramp, in excess of 50,000 square feet of usable deck space, and "float-in/float-out" capability for floating equipment with dimensions as large as 380 feet long by 66 feet wide by 16 feet draft. In addition, many other heavy-lift vessels with varying capacities are available from Dock Express through its affiliation with the Van Ommereen group.

Dock Express specializes in the ocean transport of unusually large and heavy pieces of equipment, such as refinery pressure vessels and reactors, prefabricated process plant modules, offshore oil and gas production and processing equipment, jackup drilling rigs, heavy construction equipment and rolling stock, dredges and other floating equipment.

The new Dock Express office is located at 3050 South Post Oak Road, Suite 1770, Natural Gas Pipeline Tower, Houston Texas 77056; telephone (713) 626-0405, telex 792075.

**New Officers Elected By**  
**Southeast Section Of SNAME**

At a recent meeting in Jacksonville, Fla., of the Southeast Section of The Society of Naval Architects and Marine Engineers, **Bill Byrne** of Hoffert Marine gave a brief talk of the Hoffert Marine fuel emulsifier, and Lt. Comdr. **Jim Britt**, USN, presented a paper titled "Growth and Development of the Repair Capability at the King's Bay Submarine Support Base." Following that, Comdr. **Frank Patch**, USN, gave a presentation on the repair capabilities of the USS Simon Lake.

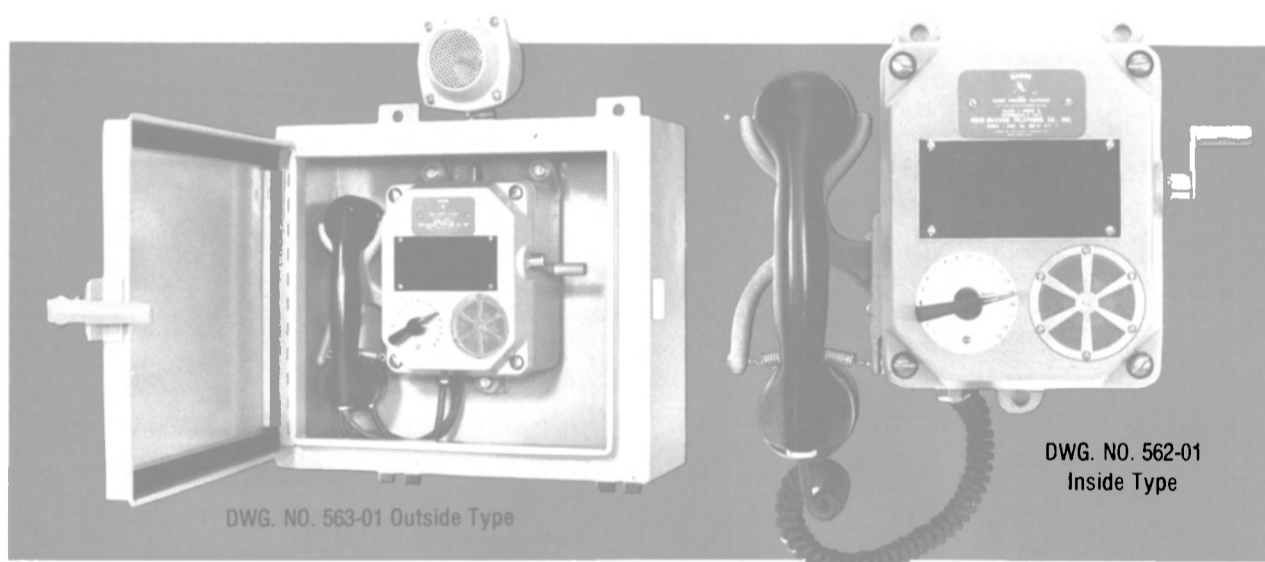
The following officers were elected for the coming season: chairman, **Fred Carnes**, M. Rosenblatt & Son, Jacksonville; vice chairman (North), **Edmund Glowacki**, Bold Craft Engineering, Jacksonville; vice chairman (Tampa), **James Brennan**, Southeast Marine, Tampa; secretary-treasurer, **William Lane**, Tracor Marine, Miami.

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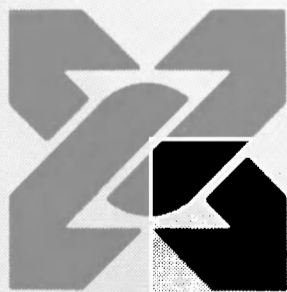
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**Largest Winch Produced  
By NABRICO—'Big Blue'  
—Literature Available**

A new timesaving barge moving winch with three-speed operation in both directions (to facilitate the back-and-forth movement of barges during loading and/or unloading) has been developed by Nashville Bridge Com-

pany (NABRICO), Nashville, Tenn.

Nicknamed "Big Blue" because of its color, the new barge moving winch is the largest winch currently produced by NABRICO, according to **Ray Jackson**, vice president/materials. The winch weighs approximately 7,000 pounds.

The NABRICO giant "provides 16,000 pounds of continuous line

pull of 30 feet per minute, 19 feet per minute or 13 feet per minute depending on your special needs," **Mr. Jackson** said.

"In addition," he explained, "the latter two speeds may be specially adjusted if required."

According to **Mr. Jackson**, having three speeds from which to select the proper one is a very important time-conserving factor when loading barges. In some in-

stances, this feature is expected to save loaders one-third of the time required to load with a single speed winch.

"Big Blue" is built with a self-contained electric-hydraulic package using standard components for economical service. It features a 25-horsepower (230/460-volt) motor.

Installation is as simple as running an electric wire to a power source, with no special piping required for either of the two units.

"Big Blue's compact dimensions (18-inch drum diameter and 30-inch drum width) mean that towing power can be installed exactly where you need it," **Mr. Jackson** explained.

"Big Blue" is the latest development from NABRICO to meet the needs of the towing and water transportation industries.

NABRICO is a wholly owned subsidiary of The American Ship Building Company, Tampa, Fla. Headquartered in Nashville, NABRICO 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, cement barges, drydocks, and towboats. NABRICO is a major supplier to the entire marine industry of marine deck hardware. The company, which has plants in both Nashville and Ashland City, Tenn., pioneered in the design and building of much of the modern equipment used on rivers today.

For a free brochure providing complete specifications and information on "Big Blue," write to **James Alexander**, Dept. MR, Nashville Bridge Company, P.O. Box 239, Nashville, Tenn. 37202.

**Setenave Chairman Named  
To Head West European  
Shipbuilders Association**

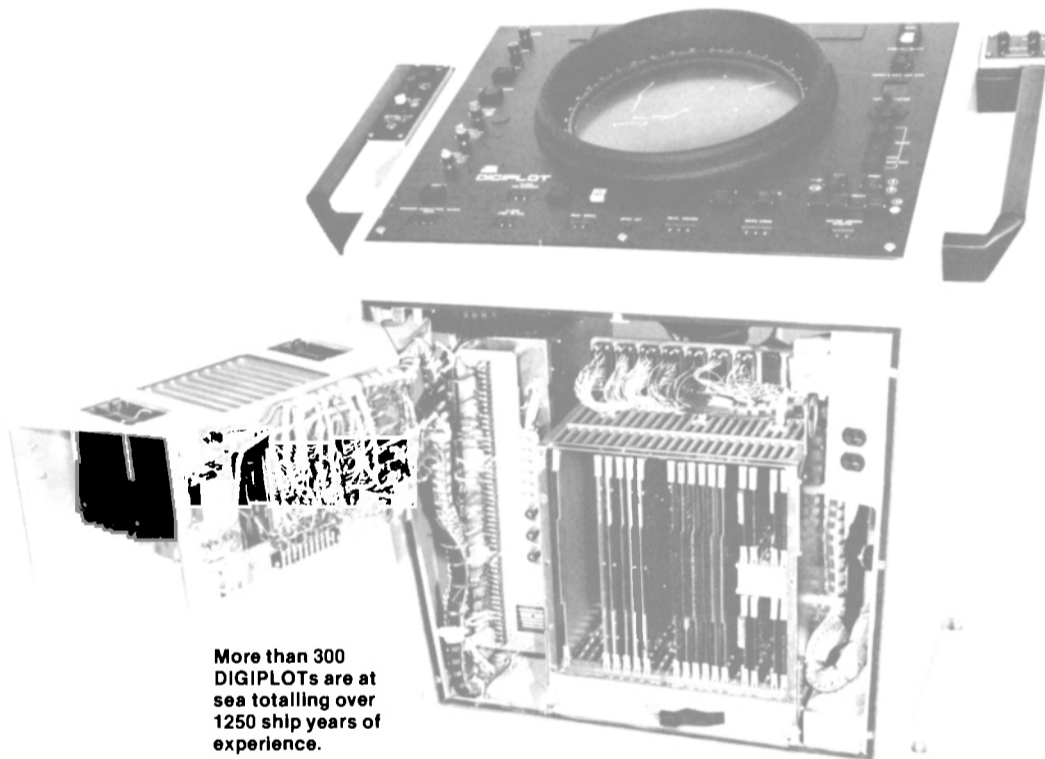


Antonio da Costa Leal

**Antonio da Costa Leal**, chairman of the Setenave yard in Portugal, has been elected president of the Association of West European Shipbuilders (AWES).

**Sr. da Costa Leal** has had a long career in Portuguese Government and private industry, beginning in 1947. From 1964 to 1974 he was financial manager at the Lisnave yard and a member of the board of directors for Setenave. He became chairman of Setenave and vice president of the Lisnave board of directors (as Government delegate) in 1978.

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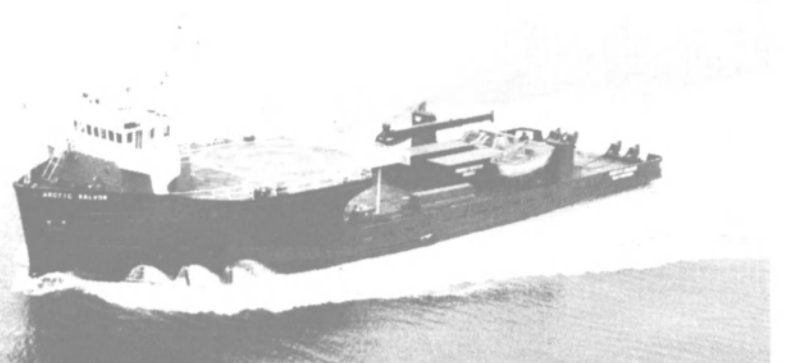
## New Crowley Salvage Vessel

Crowley Maritime Corporation recently accepted delivery of the salvage vessel Arctic Salvor, which provides more line pull than any other salvage vessel in the world, according to **Roy D. Jurgensen**, Seattle, senior vice president and general manager of Crowley's Northwest and Alaska Division.

The 213- by 54-foot vessel,

which was refitted for salvage work by Marine Industries Northwest, Inc. of Tacoma, is equipped with four Skagit DTW-150 double-drum winches, each with a line pull of 350,000 pounds. Each drum spools 3,950 feet of 2-inch wire.

The Arctic Salvor is powered by two Caterpillar D-399 diesel engines and is equipped with a



The Arctic Salvor, Crowley Maritime's latest salvage ship, is said to provide more line pull than any other salvage vessel in the world. Four Skagit DTW-150 double-drum winches each spooling almost 4,000 feet of 2-inch wire provide the muscle.

bow thruster. Features of the vessel include an ice-strengthened hull for Arctic operations, a lighted helicopter deck, special ballasting capabilities, quarters for an 18-man salvage crew and an eight-man operating crew, a machine shop, storerooms, welding machines, pumps, and diving equipment. Electronic gear includes two radar systems, a depth-recording sonar, and a satellite navigator.

The vessel is currently en route

to Prudoe Bay, Alaska, with Crowley's 1980 sealift flotilla. Upon its return in the fall it will be based in Seattle and manned for immediate assignment to salvage projects.

Crowley Maritime Corporation, San Francisco, is an international marine transportation firm with interests in construction and trucking as well as marine salvage. The company competes for salvage contracts worldwide.

## First Inshore Supply Vessels To Serve Oil And Gas Industry Certified By Coast Guard



Inshore towing/supply vessel Beefmaster, delivered recently to Tidewater Marine Service by Scully Brothers Boat Builders, is first of type certified by U.S. Coast Guard.

The first inshore towing/supply vessels certified by the U.S. Coast Guard to serve the oil and gas industry are now in service for Tidewater Marine Service, Inc., a subsidiary of Tidewater Inc.

The vessels, Beefmaster and Brahma, which represent a contract cost of approximately \$1 million, were designed by Tidewater Marine engineers and built by Scully Brothers Boat Builders Inc. of Stephenville, La. Two more Scully-built vessels of the same class are expected to go into service soon, according to **William E. Bright**, president of Tidewater Marine.

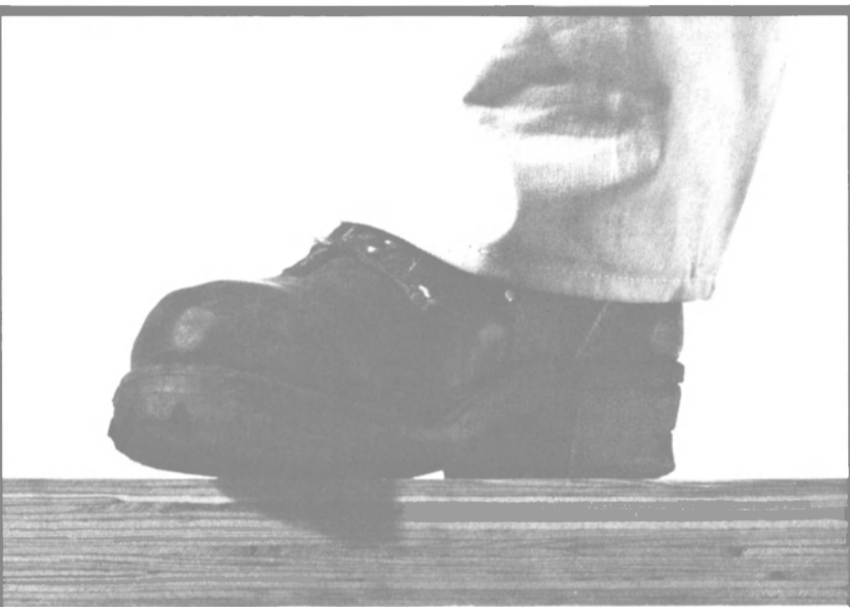
Vessels of this class are 72 feet long by 26 feet wide and have a 6-foot draft when fully loaded. They also have a 33-foot by 20-foot open foredeck area that provides carrying capacity for 25 long tons of cargo. The vessels are equipped with a 17,000-gallon diesel fuel tank and a 20,000-gallon-capacity water tank for supplying fresh water to drilling rigs and platforms. Power is supplied

by twin GM-Detroit Diesel 8V-71 engines that develop a total of 600 horsepower (mcr) at 1,800 rpm and a speed of 10 knots.

**Wayne Pourciau**, manager of Tidewater Marine's inland tug fleet, said the towing/supply vessel concept permits the delivery of limited amounts of deck and liquid cargoes to the drilling rig, which previously required the use of a barge.

Tidewater Marine added 26 new vessels to its worldwide fleet during the last calendar year at a cost of \$37.1 million, and is expected to add 20 new vessels this fiscal year, at a contract cost of \$26.3 million, as part of its long-range capital spending program.

Tidewater's approximately 400-vessel fleet is the largest fleet serving the international offshore oil and gas industry. In addition to its marine division, Tidewater also is active in oil and gas exploration and production and in the air and natural gas compression business.



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With only 1400 hours on her three 16-645-E5 EMD engines, the Dennis Hendrix was switched over to Shell's MVI *Caprinus*\* R Oil. That was in the Summer of 1977. When launched, on July 16, 1977, the boat started working the Lower Mississippi pushing tows of up to 40 barges of 1500 tons each. On August 19, 1979, she was finally ready for her first scheduled overhaul. Total engine hours averaged 17,885. Individual engine hours were; port — 18,124, center — 17,421 and starboard — 18,110. Total *elapsed* time from the date of launch; 18,312 hours. And work on the Lower Mississippi usually means long runs with few interruptions. It was estimated that the load factor was averaging about 80% during these hours. In over two years, the engines averaged only 2.3% downtime.

The Dennis Hendrix was the first American Commercial Barge Line vessel to use *Caprinus* R. So, when the overhaul was scheduled, Shell went along to see the results. As is usual with *Caprinus* R oil, the engines were very clean, with relatively low deposit levels. Wear was low for the time and type of service. Used oil analysis showed that the premium MVI *Caprinus* R Oil had equilibrated at a TBN-E of 3.0, which means corrosion protection was adequate even though the engines were operated in 'no drain' service. Carbon deposits were as expected with an MVI oil, soft and flaky.

All three engines appeared about equal in appearance, and the port engine was selected for

detailed inspection. Top rings all rated 2A, #2 rings rated 2 and 2A and #3 compression rings all rated 1. These values are well within the normal range for engines at overhaul. Liner wear was normal for the hours. All three engines had done their job well. The oil had done its job well. MVI *Caprinus* R oil had helped the Dennis Hendrix stay on the job with minimum downtime and maximum reliability.

MVI oils have been proven in almost half a century of operation in medium-speed diesels. Shell's MVI *Caprinus* R Oil maintains that reputation of MVI oil and uses a modern additive package to meet the latest engine service requirements.

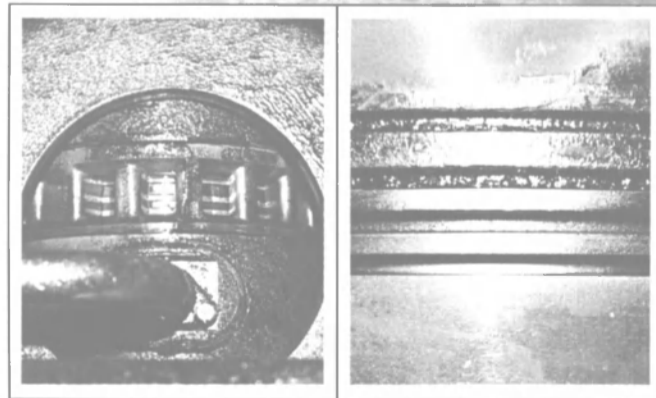
### Shell doubling MVI capacity

Since Shell is *doubling* its MVI lube oil capacity, there is no need to switch to HVI oils, as suggested by some MVI-short suppliers. HVI oils form harder, denser carbon deposits that can block port areas and crowd rings in their grooves. With *Caprinus* R Oil, you can usually operate without changing oil in most engine types with good engine protection. A used oil analysis program can be the means to longer life and excellent engine protection with *Caprinus* R Oil.

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

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

Come to  
**Shell** for answers



The light carbon deposits in the airbox are typical of a premium MVI oil such as *Caprinus* R. Soft deposits will clean up rapidly, and even after 17,000 hours, are not blocking air flow.

Pistons had no scuffing or scoring. Ring groove fill and ring wear were normal for the time and type of engine service. Rings were free.



# Shell Marine Jobbers provide service, facilities and quality Shell products.

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Helena Fuel & Harbor Service, Inc.  
Location: Mississippi River, Mile 661  
Riverfront & Bridge Road  
Phone: (501) 338-8321  
Radio: Ch 16

## CALIFORNIA

**Oakland**  
Bay Area Petroleum, Inc.  
Location: 421 23rd Ave.  
Phone: (415) 534-4517  
**San Diego**  
Tuna Clipper Marine  
Location: San Diego Harbor  
Foot of Crosby Street  
Phone: (714) 232-1838  
**San Pedro**  
San Pedro Marine, Inc.  
Location: Berth 74  
Phone: (213) 832-1339

## FLORIDA

**Jacksonville**  
See Savannah Oil & Chemical  
**Savannah, Ga.**  
**Port Everglades**  
Belcher Oil Company  
Location: Port Everglades  
2401 Eisenhower Boulevard  
Address: Fort Lauderdale  
Phone: (305) 525-4261  
**Tampa**  
Belcher Oil Company  
Location: Tampa Bay  
Phone: (813) 247-4572, 247-4573  
**West Palm Beach**  
Belcher Oil Company  
Location: Port of Palm Beach  
1733 Hill Avenue  
Phone: (305) 848-1495

## GEORGIA

**Brunswick**  
See Savannah Oil & Chemical  
**Savannah, Ga.**  
**Savannah**  
Belcher Oil Company  
Location: Savannah River, Mile 17  
Pier 50, Georgia Ports Authority  
Phone: (912) 964-8821  
**Savannah**  
Savannah Oil & Chemical  
Location: Savannah River  
647 W. River Street  
Phone: (912) 234-5402

## ILLINOIS

**Hartford**  
Ory Bros. Marine Service of America, Inc.  
Location: Upper Mississippi River, Mile 197  
Foot of Hawthorne Street  
Phone: (618) 254-0626 (Illinois)  
(314) 741-2570 (Missouri)  
Radio: Ch 16, KLC 791  
**Wood River**  
Hartford Fueling Service  
Location: Upper Mississippi River, Mile 196  
Phone: (618) 254-4333  
(314) 741-3667  
Radio: Ch 16 VHF KLG 280

## KENTUCKY

**Louisville**  
Wooten River Service  
Location: Ohio River, Mile 603  
2927 River Road  
Phone: (502) 896-0317  
**Paducah**  
Molloy Marine Service, Inc.  
Location: Ohio River, Mile 934  
100 Husband  
Phone: (502) 443-6456  
**Paducah**  
Walker Midstream Fuel and Service Co.  
Location: Ohio River, Mile 934  
532 South Second St.  
Phone: (502) 442-2738  
Radio: freq. 156

## LOUISIANA

**Amelia**  
Berwick Bay Oil Co., Inc.  
Location: Bayou Boeuf  
Intracoastal Waterway  
1/2 mile North 85 mile board  
See Berwick listing under Morgan  
**Baton Rouge**  
Capital Marine Supply, Inc.  
Location: Lower Mississippi, Mile 230  
Foot of North Street  
Phone: (504) 343-8379  
Radio: Channels 16, 7a, 10, 66a VHF  
KFT 322.  
**Baton Rouge**  
Channel Fueling Service, Inc.  
Location: Lower Mississippi, Mile 232  
River Road  
Phone: (504) 383-4691, 383-4814  
Radio: freq. 156.8

## Belle Chasse

Plaquemines Oil Sales Corp.  
See Plaquemines Oil, Venice, La.  
**Berwick**  
Berwick Bay Oil Co., Inc.  
Location: Atchafalaya River - 1/4 mile north of Hwy 90 bridge  
See Berwick Oil Listing under Morgan  
**Cameron**  
Berwick Bay Oil Co., Inc.  
Location: Calcasieu River  
See Berwick Bay Oil listing.  
**Morgan City, La.**

**Cameron**  
Cameron Marine Service, Inc.  
Location: Calcasieu River  
Phone: (318) 775-5206  
**Dulac**  
Berwick Bay Oil Co., Inc.  
Location: Houma Navigation Channel  
17 miles South of Houma  
See Berwick Bay Oil listing.  
**Morgan City, La.**

**Gretna**  
John W. Stone Oil Distributor, Inc.  
Location: Lower Mississippi, Mile 96.5  
87 First Street, Gretna  
Harvey 77059  
Phone: (504) 366-3401  
Radio: KGW 352  
**Houma**  
Houma Oil Company, Inc.  
Location: Intracoastal Canal  
Phone: (504) 872-0464  
**Intracoastal City**  
Berwick Bay Oil Co., Inc.  
Location: Vermillion River - 1/4 mile north of Intracoastal Canal Mile 155  
See Berwick Bay Oil listing.  
**Morgan City, La.**

**Lake Charles**  
Channel Fueling Service, Inc.  
See Channel Fueling Service,  
Sulphur, La.  
**Morgan City**  
Berwick Bay Oil Company, Inc.  
Location: Young's Road  
Phone: (504) 384-1610  
Radio: Ch 16 VHF-KXR979  
**New Orleans**  
Gulf Outlet Fuel & Marine Supplies, Inc.  
Location: Gulf Intracoastal Waterways  
Mile 8 East  
3400 Jourdan Road  
Phone: (504) 241-8680  
Radio: KVF 893  
**Port Allen**  
Tri-State Marine Service Co.  
Location: Lower Mississippi, Mile 227.5  
River Road  
Phone: (504) 749-3171  
Radio: 156.8  
**Sulphur**  
Channel Fueling Service, Inc.  
Location: Gulf Intracoastal Waterway  
West, Intersection of Calcasieu  
River  
Phone: (318) 583-7215, 583-7384  
Radio: 156.8

**Venice**  
Plaquemines Oil Sales Corp.  
Location: Mississippi River  
Mile 10.5 at Grand Pass  
Louisiana Hwy 23, Venice  
Address: Belle Chasse  
Phone: (504) 394-5555 (Belle Chasse)  
(504) 534-7403 (Venice)  
Radio: WYZ 2375

## MASSACHUSETTS

**Gloucester**  
Progressive Oil Co., Inc.  
Location: Gloucester  
Address: 92 Grove St.  
Phone: (617) 283-2000  
**MINNESOTA**  
**Winona**  
Waterways - Winona, Inc.  
Location: Upper Mississippi, Mile 725  
376 East 2nd St.  
Address: 455 North St.  
Fountain City, WI.  
Phone: (608) 687-6931 (Wisconsin)  
(507) 452-5252 (Minnesota)  
Radio: Ch 16-12

## MISSISSIPPI

**Biola**  
Ship Services Corporation  
Location: Gulfport State Port and Biloxi Back Bay, Beacon ;7  
Phone: (601) 374-1000  
**Greenville**  
Waterways Marine of Greenville, Inc.  
Location: Lower Mississippi, Mile 537  
Warfield Point Road  
Phone: (601) 335-2526  
Radio: KWS 617  
**Pascagoula**  
Fuel Services, Inc.  
Location: Bayou Casotte  
Ingalls Avenue  
Phone: (601) 762-0636, 762-0640  
Radio: Ch 16  
**Vicksburg**  
Vicksburg Mid-River Services, Inc.  
Location: Lower Mississippi, Mile 437  
Foot of Lee Street  
Phone: (601) 636-4814, 636-7731  
Radio: 156.8

## MISSOURI

**St. Louis**  
St. Louis Fuel & Supply Co., Inc.  
Location: Upper Mississippi, Mile 179  
Address: Foot of Gratiot Street  
Phone: (314) 421-3960  
Radio: Ch 16, VHR-KDO 722 Fort  
Guage

## NORTH CAROLINA

**Elizabethtown**  
Campbell Oil Company, Inc.  
Location: 1010 West Broad Street  
Phone: (919) 862-4107

## OREGON

all ports  
see Lilyblad Petroleum listing under  
Tacoma, Washington

## PENNSYLVANIA

**Philadelphia**  
River Associates, Inc.  
Location: Delaware River  
Pier 9 North  
Phone: (215) 463-8100

## SOUTH CAROLINA

**Charleston**  
Charleston Oil Co.  
Location: Ashley and Cooper Rivers,  
1553 King St. Extension  
Phone: (803) 577-5600

**Charleston**  
See Savannah Oil & Chemical,  
Savannah, Ga.

**Georgetown**  
See Savannah Oil & Chemical,  
Savannah, Ga.

**Port Royal**  
See Savannah Oil & Chemical,  
Savannah, Ga.

## TENNESSEE

**Memphis**  
Memphis Boat Refueling Service, Inc.  
Location: Lower Mississippi, Mile 735  
Foot of Illinois Street  
Phone: (901) 775-3131  
Radio: Ch 16

**Memphis**  
Waterways Marine of Memphis, Inc.  
Location: Lower Mississippi, Mile 736  
Foot of Beale Street  
Phone: (901) 525-5761  
Radio: Ch 16, 156.6

## TEXAS

**Corpus Christi**  
Belcher Co. of Texas, Inc.  
Address: 504 Navigation  
Corpus Christi, Tx. 78403  
Phone: (512) 888-6311

**Galveston**  
Grasso Marine Service, Inc.  
Location: Galveston Ship Channel  
Pelican Island  
Phone: (713) 744-2888 (dock)  
(713) 763-4343 (office)

**Houston**  
Houston Marine Services, Inc.  
Location: Beacon 126  
Houston Ship Channel  
Phone: Dock (713) 424-4502  
Office (713) 455-8819  
Radio: Channel 16

**Lake Jackson**  
Channel Fueling Service, Inc.  
Location: Gulf Intracoastal Waterway  
West, Mile 393  
1400 Marlin Avenue  
Phone: (713) 233-5321, 233-5322  
Radio: 156.8

**Port Arthur**  
Channel Fueling Service, Inc.  
Location: Gulf Intracoastal Waterway  
West, Mile 282  
5700 Proctor Street  
Phone: (713) 962-5557  
Radio: 156.8

**Rockport**  
Berwick Bay Oil Co., Inc.  
Location: Rockport Navigation Harbor,  
Intracoastal Canal, Mile 526  
See Berwick Bay Oil Listing, Morgan  
City, La.

**VIRGINIA**  
**Norfolk**  
Marine Oil Service, Inc.  
Location: Elizabeth River  
Address: 71 Radar Street  
Phone: (804) 622-0934, 622-3109

**WASHINGTON**  
**Seattle**  
Ballard Oil Co.  
Location: Lake Washington Ship  
Canal  
Phone: (206) 783-0241  
**Tacoma**  
Lilyblad Petroleum, Inc.  
Location: Washington and Oregon - all  
ports  
Phone: (206) 572-4402  
Radio: KLB radio station  
Marysville, Wa.

**WASHINGTON**  
all other ports see Lilyblad Petroleum  
above.

**WEST VIRGINIA**  
**Pt. Pleasant**  
City Ice & Fuel Co.  
Location: Ohio River, Mile 265.3  
Address: 224 First Street  
Phone: (304) 675-2010



Seagoing hopper dredge Eagle I on the ways at Avondale Shipyards just prior to recent launching. Unique vessel—only five others of this type exist in the world—will be powered by two Alco diesel engines with total output of 7,500 bhp.

## Split-Hull Hopper Dredge Launched At Avondale Yard

Avondale Shipyards recently launched the Eagle I, one of the largest split-hull hopper dredges in the world, for Eagle Dredging Corporation of New Orleans. The unique vessel is being constructed at a cost of more than \$30 million, according to J.W. Bean, president of Eagle Dredging.

The Eagle I has an overall length of 340 feet, beam of 68 feet, and depth of 24 feet. Hopper capacity is 6,300 cubic yards. A crew of 24 will operate the 7,500-bhp ship at a service speed of 14 knots.

"Hopper dredges are designed specifically for operations at sea, and they are used primarily to maintain water depths at channel entrances such as Southwest Pass at the mouth of the Mississippi River," Mr. Bean said. "This dredge will allow further participation in that portion of work presently handled primarily by the U.S. Army Corps of Engineers." Mr. Bean added that Eagle I will make a significant contribution to private industry's capability for construction of new deepwater ports.

"Further," said Mr. Bean, "such a vessel will be able to help solve many of the present environmental demands associated with inland disposal areas, given the vessel's ability to load dredged material from inland and coastal waters and transport and dump these materials in acceptable offshore disposal areas."

A split-hull hopper dredge is a ship whose hull is divided and hinged at the deck so that it can open at the bottom to dump a load of dredged material. Only six split-hull hopper dredges exist in the world, according to Mr. Bean.

Dredging is carried out in the closed position. Once over the site to be dredged, the vessel lowers two drag arms, one on each side, to the bottom of the body of water. These drag arms are pipes with specially designed heads that dig into the bottom material like bulldozer blades.

The arms are dragged alongside the ship with the heads on the bottom, breaking up the material, loosening it, mixing it with water, and pumping it into the vessel's hopper for storage. The hopper resembles the hold of a bulk carrier.

Once full, the arms are lifted and the ship sails to the disposal site with its cargo of dredged material and water. When over the disposal area, two huge hydraulic cylinders force the ship open in less than two minutes, allowing the dredged material to drop into the sea. The ship then closes and returns to the dredging site to repeat the process.

The Eagle I will be powered by two 3,750-bhp, 16-cylinder Alco diesel engines, and Propulsion Systems Inc. bow thrusters will enhance maneuverability. The ship was designed by Dredge Technology Corporation of New York, and will be commissioned in December this year. She will be classed by the American Bureau of Shipping, and meets all the latest rules of the U.S. Coast Guard and other regulatory bodies.

Eagle Dredging is a U.S. company formed as a joint venture by C.F. Bean Corporation, an international dredging firm headquartered in New Orleans, and Royal Volker Stevin of the Netherlands, the world's largest dredging company.

Shell Oil Company  
Manager Commercial Communications  
One Shell Plaza  
Houston, TX. 77002

Send me the Shell Shallow Draft Marine Products Guide (SOC: 95-79)  
 Send me the Shell Marine Equipment Lubricants chart (SOC: 122-79)  
 Send me the Shell Marine Jobber Directory (SOC: 127-79)  
 Send me the Caprinus R Technical Bulletin (SOC: 17-77)  
 Send me the Caprinus R brochure (SOC: 32-77)

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Company/Vessel \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



# SMM 80

## 9th Exhibition And Congress Ship, Machinery, Marine Technology International

*facing page,  
aerial view  
of Hamburg*

Amid general signs of a worldwide recovery in the shipbuilding industry, the 9th Exhibition and Congress of Ship, Machinery, Marine Technology International will be held in Hamburg, West Germany, from September 23 to 27, organized by Hamburg Messe und Congress GmbH.

Some 450 exhibitors from 24 countries—including all European shipbuilding nations—will occupy the 52,500 square meters of the Hamburg exhibition halls. The range of sectors represented at the exhibition is equally comprehensive: shipyards for vessels of every size, manufacturers of engines and related propulsion machinery, navigational aids, measurement and control equipment for automated and semi-automated operation of vessels, as well as outfit and equipment for both deck and engine room.

This extensive display of marine technology will be supplemented by the concurrent exhibition IOPPEC '80—the International Oil Pollution Prevention Exhibition and Congress.

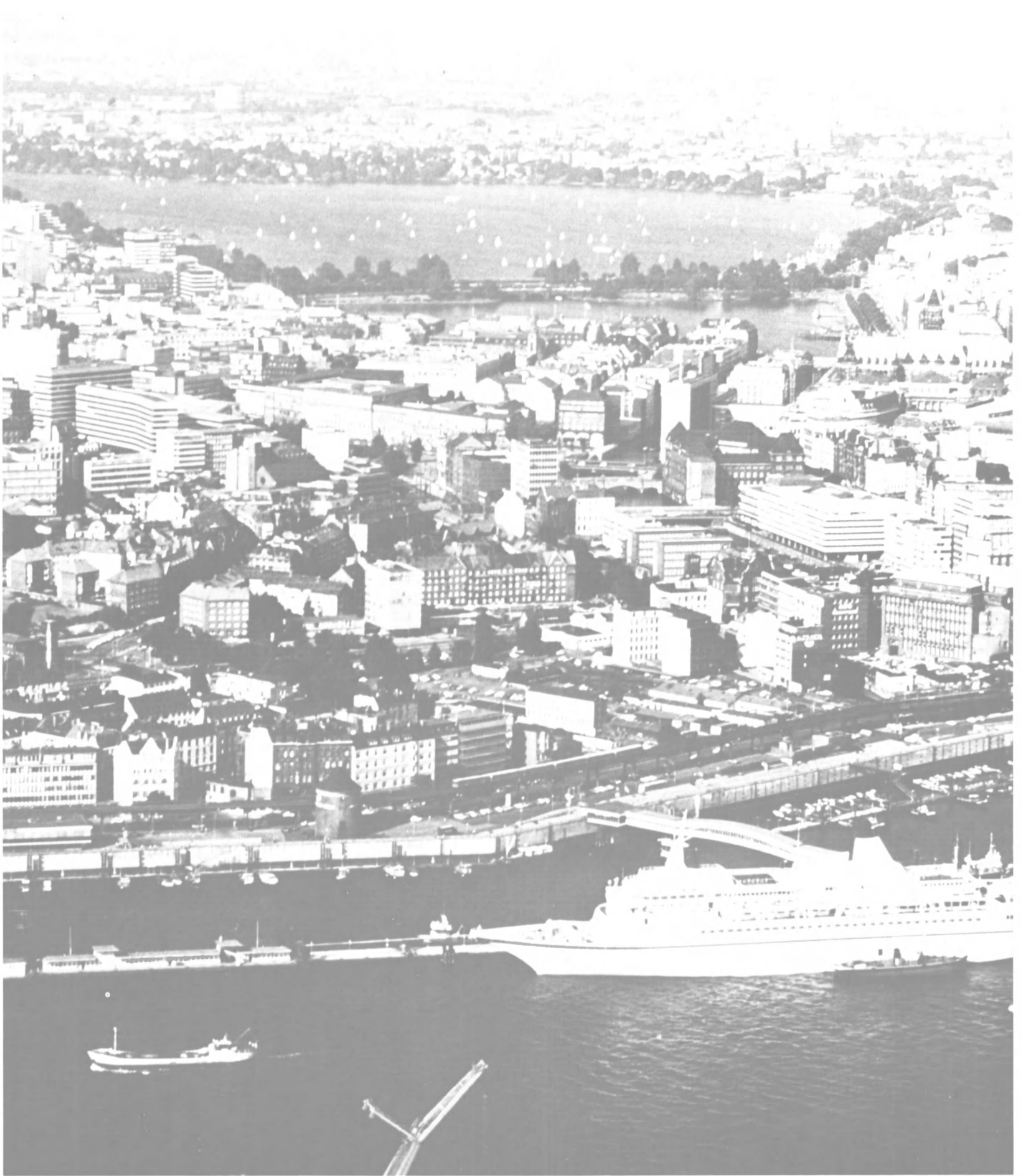
Major European shipyards will present their latest products and ideas for the construction of new ships, ship repair, marine technology, and mechanical engineering. Among the companies that have registered for the exhibition are Blohm + Voss of Hamburg; Bremer Vulkan shipyard in Bremen; the Polish shipyard orga-

nization Centromor; the Budapest, Hungary, works for ship assembly and crane construction; Maritimex shipbuilding organization (Czechoslovakia); the Finnish shipyard Wartsila of Helsinki; Setenave in Portugal; Howaldtswerke-Deutsche Werft (H-DW) of Hamburg/Kiel; the Hapag-Lloyd shipyard in Bremerhaven; and many other major shipbuilders.

The major shipyards share a growing conviction that the rationalization of capacity for construction of new vessels and the recovery in demand for shipbuilding and ship conversion have created a marked improvement in business prospects. Many European shipyards, particularly in West Germany, are following the trend toward increased specialization by devoting a considerable part of their scientific and technical resources to the development of specialized vessels, floating production plants, and installations for offshore work and marine engineering.

For example, Bremer Vulkan shipyard in Bremen leads the world in the construction of containerships, with 28 completed to date, while the Hapag Lloyd yard in Bremerhaven recently impressed the world of shipbuilding with a record performance in converting the passenger ship France into the Norway, the larg-

(continued on page 16)



## SMM '80

(continued from page 14)

est luxury liner in the world, in the space of only 33 weeks.

The German shipyards H-DW and Thyssen Nordseewerke also have been making a name for themselves in the market for offshore rigs and marine technology systems. Werft Nobiskrug has gained access to a broader market with its standardized multi-purpose freighters, while Orenstein & Koppel, also in Hamburg, has set new standards in the construction of floating cranes, dredges, and refrigerated cargo vessels.

Interesting exhibits also will be presented by others in the shipbuilding sector: Germanischer Lloyd, Deutsche MacGregor, the Hamburg Shipbuilding Research Establishment, numerous manufacturers of large shipbuilding tools, and the Paul Hammelmann engineering works, which will introduce its Dock-knight system for the rationalization of dockyard and maintenance work. This system has been adopted by shipyards in West Germany and the world at large. Its fully automatic operation permits the cleaning of a ship's sides at a rate of over 2,000 square meters per hour, and painting at the rate of 4,000 to 6,000 square meters per hour.

### Propulsion Machinery Prominent

At this year's SMMT exhibition, considerable space will be occupied by the diesel engine manufacturers. This will include presentations by diesel engine builders, makers of control systems, manufacturers of rudder propellers and propellers with adjustable nozzles, as well as suppliers of engine accessories, cleaning materials, and cleaning equipment. Among the major firms that will be represented are Klockner-Humboldt-Deutz, M.A.N., MaK, MTU (Motoren und Turbinen-Union), Motoren-Werke Mannheim, Societe Alsacienne, Gebruder Sulzer, Stork Werkspoor, Technocommerz, Centromor, Grandi Motori Trieste, and Hatz. These are just a few examples of the comprehensive and international nature of the Hamburg exhibition.

### Intermaritec '80

In conjunction with the SMMT exhibition September 23-27, an international congress—Intermaritec '80—will attract engineers and scientists from the United States, West Germany, Norway, Canada, France, Great Britain, the Netherlands, and even from as far afield as India and the People's Republic of China.

This valuable exchange of information in the field of marine research and technology will take place parallel with the exhibition.

Intermaritec '80 will be sponsored by the Federal Ministry for

Research and Technology. Some 700 experts from all over the world are expected to hear the 67 papers. The congress can be broken down according to four main topics: offshore technology, polar maritime technology, marine pollution control, and navigation and communications at sea.

The congress has been organized by the Deutsche Komitee für Meeresforschung und Meeres-

technik (German Committee for Marine Research and Oceanography), the Wirtschaftsvereinigung Industrielle Meerestechnik (Trade Association for Industrial Marine Engineering), Dusseldorf, and Hamburg Messe und Congress GmbH.

### Offshore Platforms

Within the field of offshore technology, experts from the

Hamburg shipyard of Blohm + Voss and the Norwegian industrial firm Kongsberg Vaapenfabrikk will present models for potential international cooperation in the development and construction of offshore rigs for deepsea engineering. A team of international experts will deal with the testing of new or recently developed working platforms and drill-

# Twin Disc extends marine transmission line for engines up to 3617 kW (4850 bhp).

Now Twin Disc offers the North American marine industry five new series of marine reverse and reduction transmissions for higher horsepower diesel engines. Twin Disc has extended its line of domestically manufactured transmissions to include higher horsepower models from its partially-owned affiliate Niigata Converter Company Limited (NICO). This means the superior reliability, performance and operating economics typical of Twin Disc Marine Transmissions are now available here in greater horsepower capacities than ever.

These larger, coaxial (inline) marine transmissions are designated Models MGN-650BZ, MGN-1000AZ, MGN-1600AZ, MGN-2200AZ and MGN-3200AZ. In addition, special designs and other NICO models are available in produc-

tion quantities to meet specific installation and application requirements.

### The MGN-Z Series Offers these Features:

- Coaxial input-output shaft arrangement for lowered propulsion package center of gravity.
- Wide variety of models and ratios to meet various propulsion requirements.
- Use same type oil as specified for the engine.
- Carburized, hardened and precision finished single helical gearing, anti-friction bearings, and hydraulically-actuated clutches are the principal members of the uniquely-designed gear train resulting in a dimensionally compact, low weight, high efficiency transmission.
- Prompt, smooth shifting, integral

hydraulic forward and reverse clutches respond to operator requirements for good vessel maneuverability. The "X" control is available as an option which permits variable propeller speed independent of engine speed.

- Housing design and strategic placement of access covers provides for easy inspection and maintenance, even in compact engine rooms.

The MGN-Z Series, like all Twin Disc Marine Transmissions, are backed by Twin Disc's warranty program with Approved Renewal Parts available from Twin Disc. For more information on the new coaxial MGN-Z Series contact Twin Disc, Incorporated, Racine, WI 53403, U.S.A. Telephone (414) 634-1981, Telex 264432.

**Request Bulletin 900.**



ing rigs, as well as their operation.

**H.G. Hattendorf** and **J. Oellers** of the Hamburg Shipbuilding Research Establishment, together with **M. Grallert** and **K. Kokkinowrachos** of the Rhenish-Westphalian Polytechnic in Aachen will explain the concept and layout of the test area for the research platform Nordsee. **H.G. Butt**, **J. Salewski**, and **P. Wagner** will join the Aachen scientists in

a report on major experiments with the Conapt drilling platform system in the test area of the Nordsee.

**F.C. MacTernan** of the Scripps Institute of Oceanography in California will present a paper on the work schedule of a deepsea drilling rig project. Two specialists from Deutsche Babcock AG will describe the development of a mobile platform for an offshore pow-

er station in the German sector of the North Sea, while experts from the German hydraulic engineering firm Dyckerhoff & Widmann and the American Westinghouse Electric Corporation will outline the design of an open-circuit OTEC power station for offshore use.

#### New German Drill Rig

The introduction of the new

German drilling rig RS 35 is expected to arouse the interest and attention of experts all over the world. At Intermaritec '80, **P. Bauer** and **M. Brandt** of Erno Raumfahrttechnik, Bremen, will report on the drilling capacity and delivery output of this semi-submersible system that has been designed for deepsea operations. Three experts from the Berlin Polytechnic headed by Prof. **C. Kruppa** will explain their tests with this German development by means of a demonstration model. **K.M. Gisvold** of the Norwegian Hydrodynamic Laboratories in Trondheim will describe how models of drilling rigs, production derricks, and other offshore installations are used for testing purposes.

The underwater installation of offshore structural units in shallow and deep coastal waters will be examined in a comprehensive joint survey by several experts from the Rhenish-Westphalian Polytechnic in Aachen, IMS Hamburg, and the Hamburg Shipbuilding Research Establishment. Experts from Germany, Norway, and the U.S. will discuss specialized questions connected with offshore rigs, such as the monitoring of stability by means of vibration analysis, as well as checks of the piping and other parts of the drilling plant.

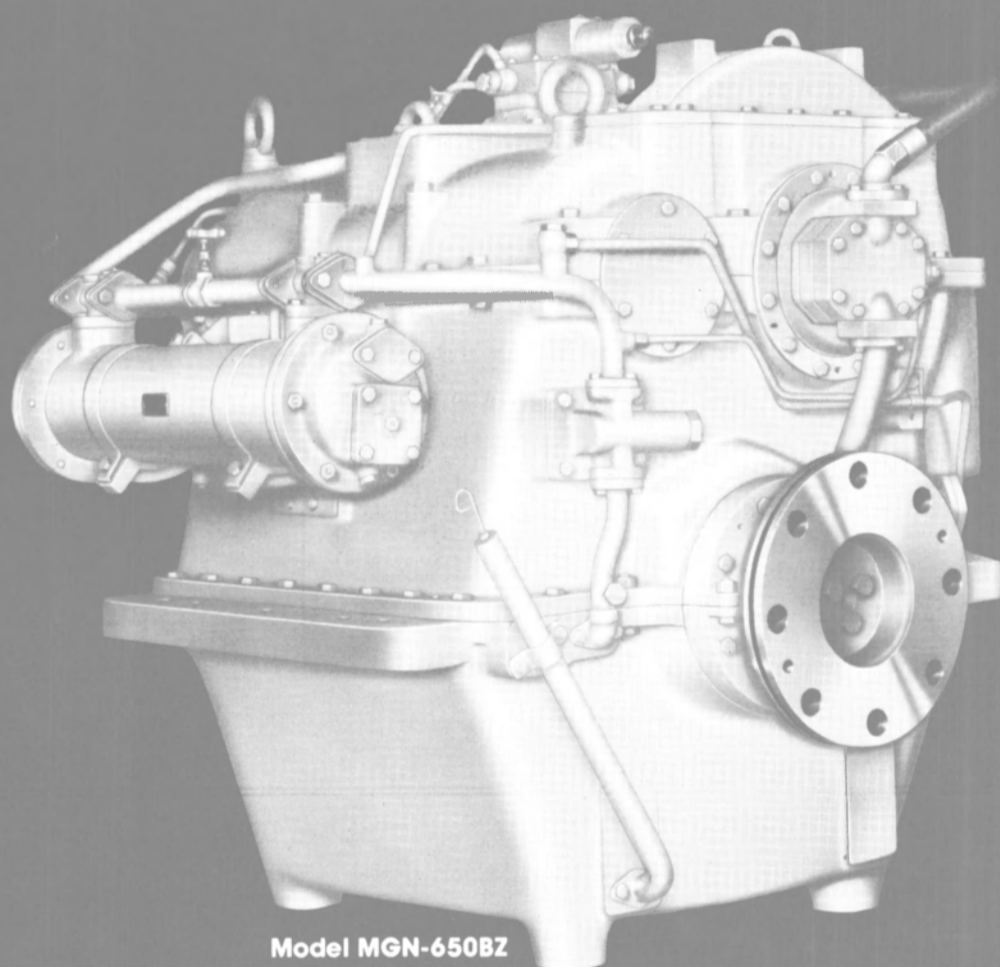
Operations in conjunction with the production of oil and gas will be a further topic within the field of offshore technology. On the basis of their theoretical and experimental know-how, specialists from Liquid Gas Anlagen Union GmbH, Paguag, AG "Weser" shipyard, and Preussag AG will propose models and options for the transfer on the high seas of liquefied natural gas from production platforms to tankers. Shipbuilding experts from Blohm + Voss will describe how butt-welding techniques can be used to lay pipelines in extremely deep water, and a specialist from the U.S. oil company Conoco will report on deepsea drilling.

#### Rigs In Rough Seas

The safety factor in offshore drilling will form part of several papers at the congress, including a talk by **O. Furnes** of Det norske Veritas on collisions between ships and offshore rigs, and a contribution by **C. Ostergaard** and **W. Zaretzke** of Germanischer Lloyd on the offshore operations of crane ships at sea. **T.E. Schellin** of Germanischer Lloyd will discuss the basic planning of mooring systems.

Scientists from the Indian Institute of Technology in Madras will examine the dynamics of offshore rigs in rough seas, while an American colleague from Stevens Institute of Technology in Hoboken, N.J., will describe the factors relating to movement in multi-propeller, semisubmersible

(continued on page 19)



Model MGN-650BZ

## Model MGN-Z Series

MARINE TRANSMISSION MODEL	NOMINAL RATIOS	GOVERNED ENGINE SPEED RANGE*, RPM	POWER RANGE* kW (hp)
MGN-650BZ	3.0:1 3.5:1 4.0:1 5.0:1 6.0:1	700-1800	634-895 (850-1200)
MGN-1000AZ	3.0:1 4.0:1 5.0:1 6.0:1 7.0:1 8.0:1 9.0:1	700-1800	634-1119 (850-1500)
MGN-1600AZ	3.0:1 4.0:1 5.0:1	700-1700	1119-1641 (1500-2200)
MGN-2200Z	3.0:1 3.5:1 4.0:1 4.5:1 5.0:1	700-1600	1491-2237 (2000-3000)
MGN-3200Z	3.0:1 4.0:1 5.0:1	700-1400	2610-3617 (3500-4850)

\*Depending on ratio, type of duty, input speed and survey society classification requirements. Certification certificates available from ABS, LRS and other major survey societies.

*We put  
horsepower  
to work.™*



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# Simrad. A trusted name at sea.

## The Navigation Computer that started it all... from Simrad, naturally.



Simrad's CC-2 Navigation Computer gives complete position, steering and piloting information in an easy-to-use system. It is still the only separately packaged Loran C navigation computer, and can accept input data from any Simrad Loran C receiver.

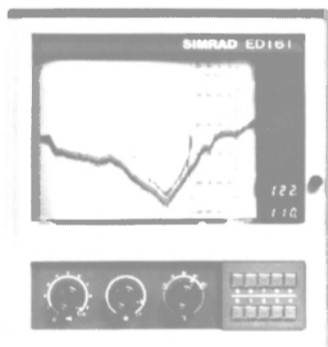
The CC-2 can repeat Loran C time-difference numbers, convert Loran C position to latitude, longitude, and will store up to nine "waypoints" or destinations. It continuously computes distance, time to destination and bearing from your present position to any

of the nine selected destinations or waypoints. It also computes speed over the ground, course made good and off-course "cross track error" for steering adjustments. Lat/Long position is read out to tenths of seconds (ten feet) and off-track deviations can be read out in hundredths of a nautical mile. The computer is so flexible, you can even use it to solve separate time/course/distance problems while it continues to update actual navigation data internally.

## New digital recording sounders meet IMCO requirements.

Simrad now offers two economical navigation recording echosounders that meet IMCO recommendations for merchant vessels. In addition to showing a well-defined bottom on recording paper, the systems have independent digital depth indicators and depth alarms. The Simrad ED-161 has four recording ranges from 0-25 to 550 fathoms. The ED-162 has 0-30, 0-75, and 0-150 foot recording ranges for navigating in shallower waters, plus a 0-1500 foot deep range. The optional IR 201 Remote Digital Analog Indicator displays depth in feet, meters and fathoms.

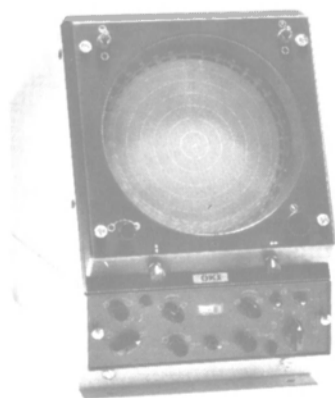
These systems are also designed as replacements for existing older systems. Due to Simrad's special engi-



neering, some vessels can be retrofitted from inside the hull without having to dry dock.

## Ship's radar from Simrad.

Ten and twenty KW radar models from Simrad are building a reputation for extra fine resolution that you can count on. It is natural to think about long range use, and they do have six ranges from 1/4 n.m. to 48 n.m., with an additional 30 to 78 n.m. setting on the 20 KW model. However, they really outperform competition at extremely close distances. At the 1/4 n.m. range, they provide the unusual resolution you need to pick out small boats and channel markers in a dense fog. And that's the most critical test for any radar. Choice of four or six foot antenna. Variable range marker (VRM) with digital readout, and early warning target alarm options are available. For smaller vessels, Simrad's ONX-6



(5KW) with choice of 3 or 4 foot slotted array antenna, and all electronic scope sweep, is recommended.

## Loran C means Simrad.

Throughout the world, skippers have learned to trust Simrad's Loran C reliability and accuracy... and to rely on Simrad's sales, installation and service network in more than 450 ports throughout the world.

Our "New Generation" LC-123 now has many more advanced features, including signal integration that sets a new standard in readout accuracy. With its "touch pad" keyboard, our new LC-112 provides high performance at an economical price. Both models have been designed and manufactured to meet or exceed all Minimum Performance Standards (MPS) of the Radio Technical Commission for Marine Services (RTCM), adopted 12/20/77, including Addendum #1 dated 7/19/79, as endorsed by the U.S. Coast Guard for use aboard vessels over 1600 gross tons when calling at ports in the Continental U.S. This is a legal requirement for ship operation in U.S. waters.



Simrad's Loran was recently tested against eleven other receivers by an independent testing laboratory under contract to the Canadian Department of Fisheries and Oceans. Since the LC-112 had not been introduced yet, it couldn't be included in the test. However, in long range tracking tests, three units were judged superior... Simrad's LC-123, Simrad's older LC-204 and another manufacturer's receiver that costs over \$2,000 more than an LC-123. Several competitors complimented Simrad by copying our LC-123, but evidently they still couldn't match Simrad's performance and reliability. Our ten years of experience in developing Loran C technology is important to you. A cheap Loran could be costly.

# SIMRAD

Simrad Inc., One Labriola Court,  
Armonk, NY 10504 (914) 273-9410

## SMM '80

(continued from page 17)

drilling rigs. Scientists from Berlin Polytechnic will use an off-shore power station of the EPOS system as an example in explaining their hydromechanical investigations, and an expert from the U.S. Department of Commerce will deal with the inspection of the huge floating OTEC power stations made from prestressed concrete, as well as the repair and maintenance work aboard these giants.

### Submersible Systems

Six more papers at the congress are concerned with the technology of submersible systems. After a general survey of the field by J. Gelhaus of Dragerwerk AG, some specific examples of this technology will be presented, such as the FUGE system — an unmanned, remote-controlled vessel for inspection and maintenance of offshore installations. M. Muller of Preussag will report on its development. B. Arndt of Schiffko, G. Haux of Haux-UW-Systemtechnik, and H. Victor of Ocean Consult will explain SUPRA—a new system for underwater operations that has been developed in Germany.

On the basis of model experiments, P. de la Motte of Ingenieurburo fur Wasserbau und Meerestechnik (Engineering Consultants Office for Hydraulic Engineering and Marine Technology) will present a new underwater vessel for the installation of submarine cables and pipelines. The Far East will also make a contribution to this subject: C.M. Chu of Jao-Tung University in Shanghai will talk on experimental methods for testing self-propelled underwater craft. E. Wolpert of DDG Hansa will deliver a paper on how to carry out scientific and technical tests of components onboard a diving vessel.

The last Ship, Machinery, Marine Technology exhibition held in Hamburg in 1978 attracted almost 25,000 trade visitors from 48 countries. More than 90 percent of the exhibitors at that event stated that their expectations had been fulfilled, and every third exhibitor expected follow-up orders.

### SMM '80 EXHIBITORS\*

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Hydroland	France
Hyundai Heavy Industries Co. Ltd.	Korea

(continued on page 20)

# U.S. Coast Guard Approved Oil/Water Separators

**BUTTERWORTH SFC BW Oil/Water Separators are now U.S. Coast Guard approved for shipboard use to meet IMCO and MARPOL regulations for discharge of bilge water.**

Under pending legislation all non-tanker vessels over 400 tons which ballast fuel tanks or have machinery spaces, will be required to have a U.S. Coast Guard approved 15 ppm (parts per million) oil/water separator on board to enter U.S. waters. Similar vessels under 400 tons have the added option of transferring oily bilge and ballast slops to a reception facility.

### Less Than 2 ppm of Oil.

In recent U.S. Coast Guard certification tests, BUTTERWORTH® SFC BW (Separator Filter Coalescer-Bilge Water) units exceeded U.S.C.G. and IMCO A.393(X) requirements. In many tests, separated water discharges contained less than 2 ppm of oil. SFC BW units have also been approved in conformance with A.393(X) by Norway, France, Netherlands, Poland, Italy, Yugoslavia, United Kingdom, Greece and Germany.

### Superior Vertical Processing.

SFC BW Oil/Water Separators are simple and rugged, with no internal moving parts. They operate at atmospheric pressure with minimum maintenance. Unlike some other separators, SFC BW units use vertical rather than horizontal processing. With an SFC BW unit, the oil/water mixture is first introduced into an upper

chamber where pure oil is immediately removed. The remaining oily water flows down along an outer shell, then upward past coalescing fins. Final cleansing occurs as the almost oil-free water is drawn through a flushable coalescer medium.

### Unaffected by Pitch and Roll.

Unlike horizontal units, vertical processing SFC BW units occupy a minimum of deck space with all separation occurring in a single container. A 10 cubic meter per hour unit, for example, is only 4½ feet in diameter. SFC BW units can operate in almost any weather. They are virtually unaffected by pitch and roll.

### Other Features.

With SFC BW units, initial separation occurs at atmospheric pressure. The clean-water discharge pump creates a slight vacuum for final filter separation. As a result, SFC BW Oil/Water Separators do not clog or stop up. They can be located below the water-line with discharge elevations up to 30 meters.

A standard SFC BW unit operates unattended until a 20-minute filter backflush is required. The time between backflushes — usually 12 to 24 hours — depends on the degree of oil contamination.

Fully automatic units that operate completely

unattended are also available. Every SFC BW unit is equipped with a dedicated feed pump to allow SFC BW Separators to be sized to meet a vessel's exact needs. They do not have to rely on the vessel's bilge pump.

### Recovered Oil pay-back.

The value of the recovered oil, either returned directly to the ship's fuel tank or stored for reprocessing ashore, should not be overlooked. The pay-back period for SFC-BW Separators is continually being reduced as the price of oil rises.

### Get all the Facts.

SFC BW Oil/Water Separators are available with capacities from ½ to 60 cubic meters per hour. Write or call for full details... and for a copy of "From A to X about Oil/Water Separators". This six-page report has facts on MARPOL, IMCO, and U.S. regulations for shipboard oil/water separators.

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**SMM '80**

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(continued on page 22)

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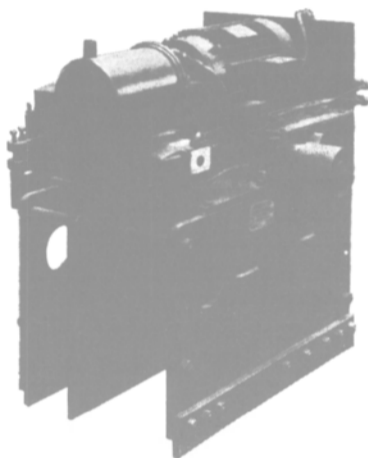
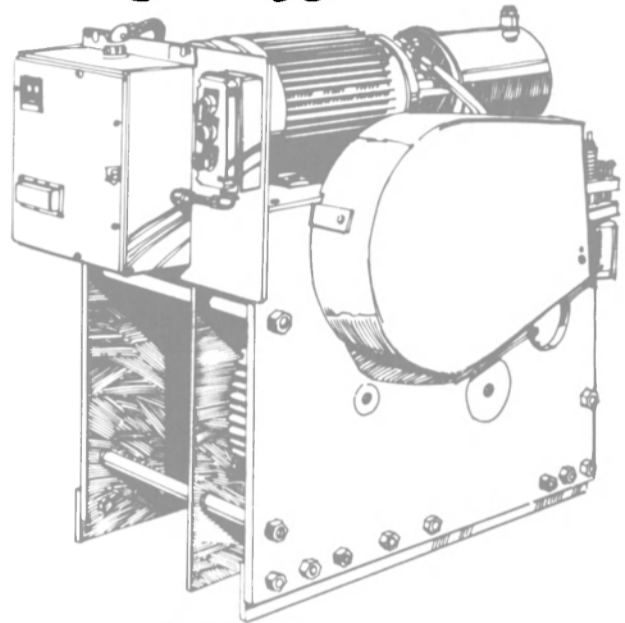
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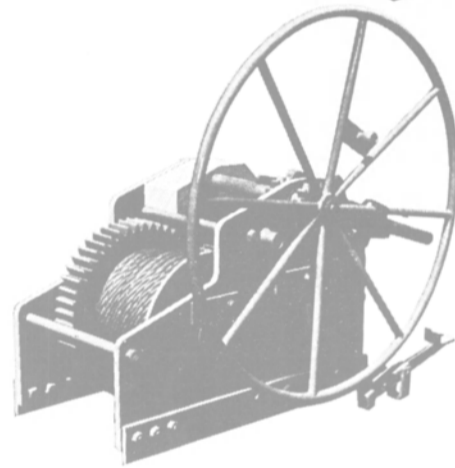
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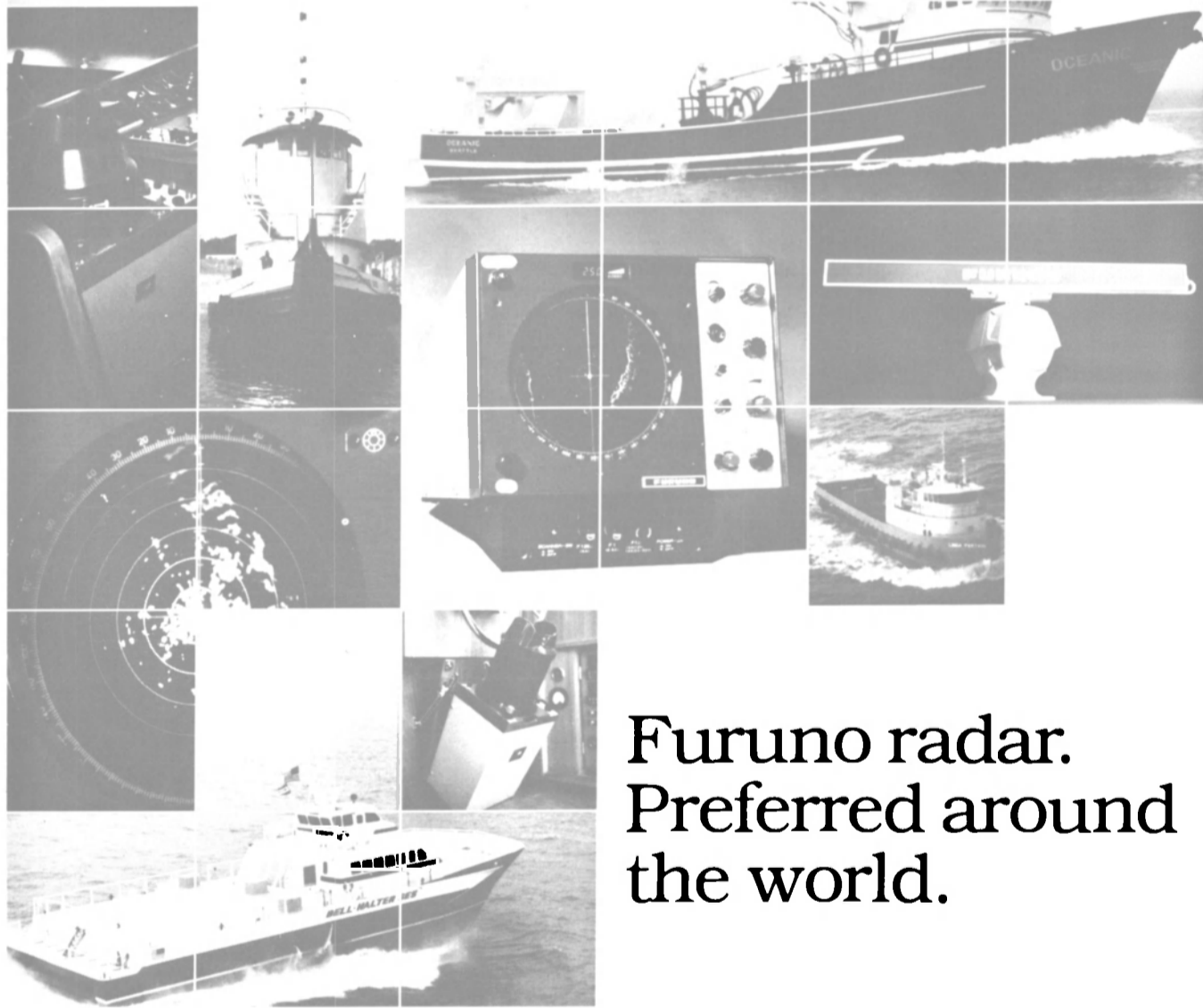
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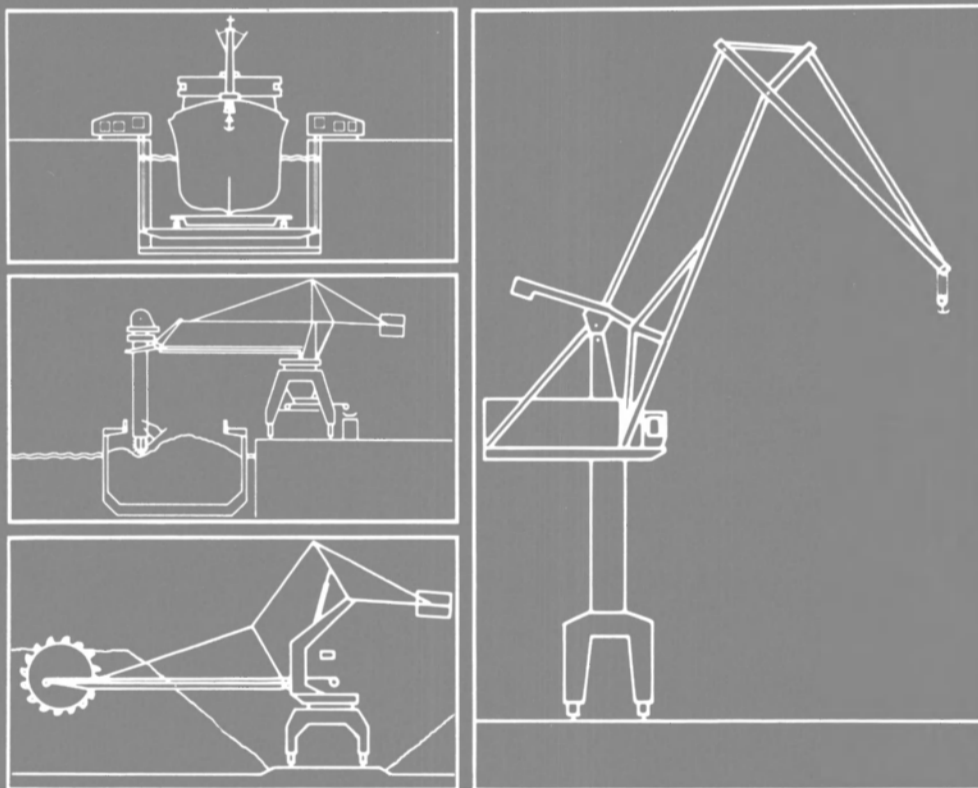
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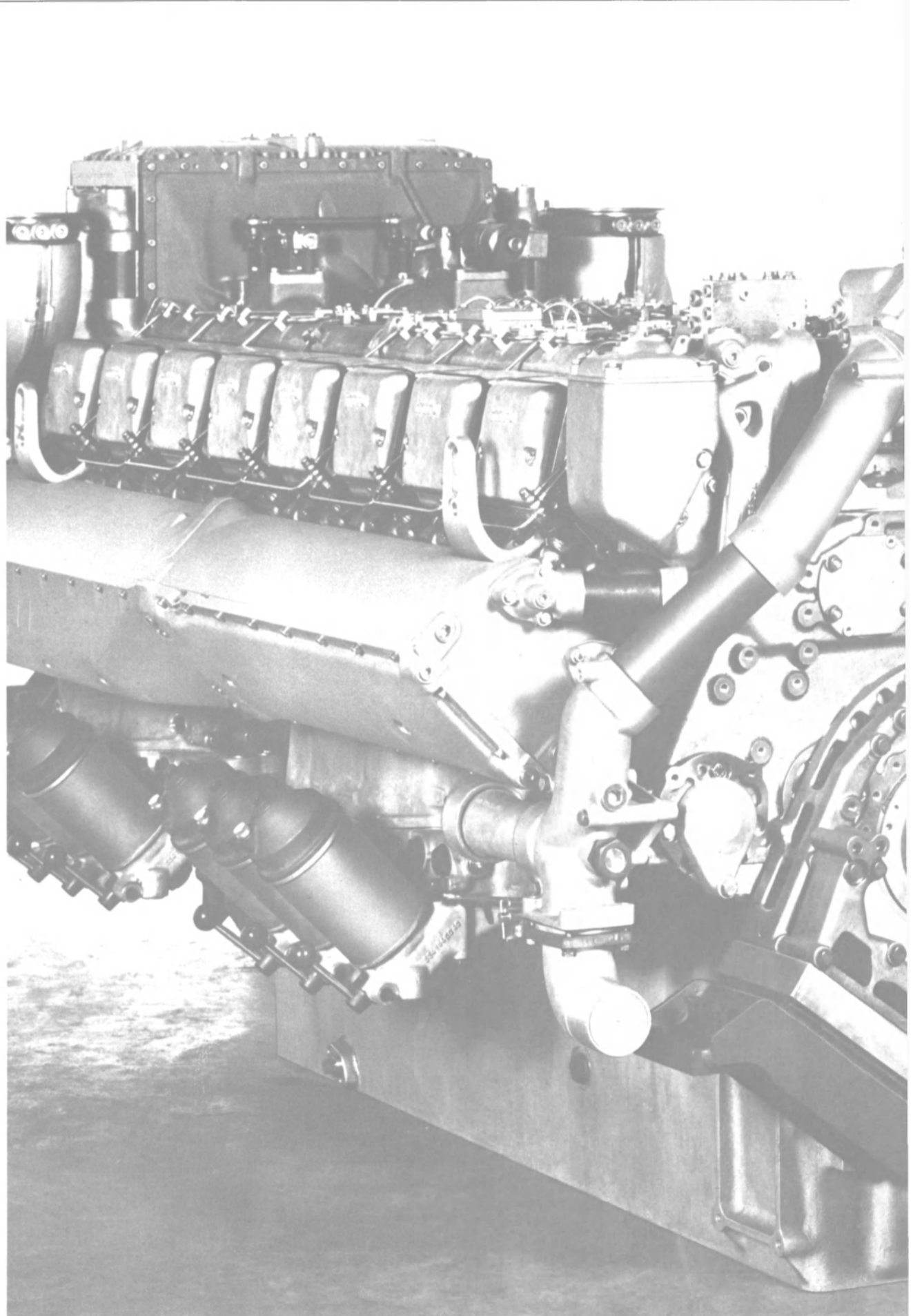
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\*As available at press time.

# MTU presents the 16 V 396

MTU Friedrichshafen continues the successful, market-oriented development of the 396 engine series with the presentation and introduction of the 16-cylinder model.

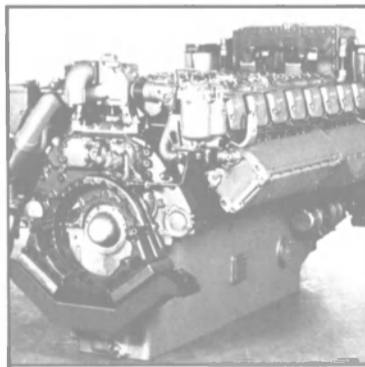
The 396 engine series main characteristics are as follows:

- Direct flange-mounting of transmissions and alternators
- Tried and tested components warrant reliability and endurance
- Low maintenance requirements and a simple main tenance procedure thanks to easy accessibility
- High performance output
- Low space requirement
- Lightweight construction
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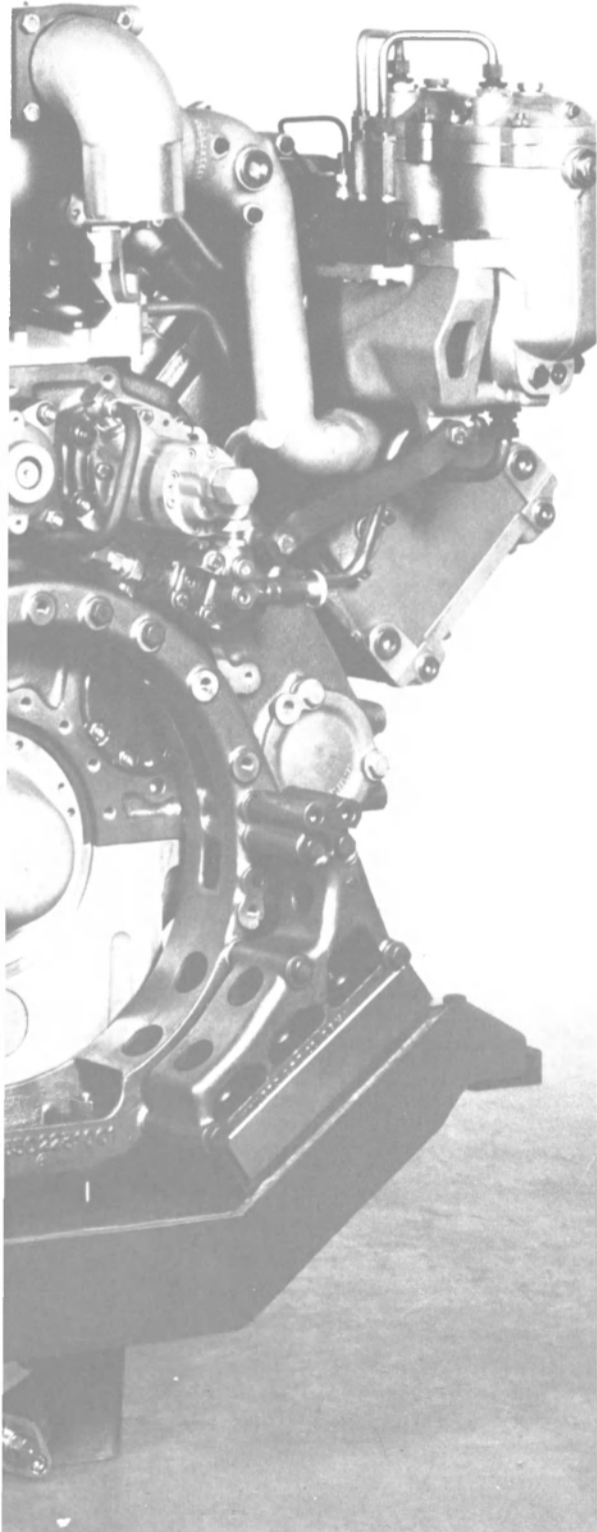
Presentation of the 16 V 396 model means the 396 series now embraces a range of 6, 8, 12 and 16-cylinder Vee-type engines from 345 kW to 1760 kW output within a speed range of 1200 rpm to 2100 rpm.

MTU Friedrichshafen delivers complete drive systems: Diesel engines of 345 kW to 5200 kW, transmissions and electronic control and monitoring systems - everything carefully and homogeneously planned to function in any individual area and application.

The MTU service supporting all products on a worldwide basis is "built-in" right from the planning stage. All questions concerning operation, maintenance and upkeep of the drive units can be answered by our MTU planning team.



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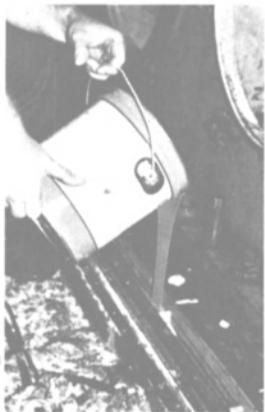
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## Maine Maritime Given \$16,000 Kummerman Grant

Maine Maritime Academy at Castine has been awarded a grant of \$16,000 by the Henri Kummerman Foundation.

Set up in 1977 by the president of the International MacGregor Organization, world-renowned designers and supplier of marine cargo access equipment, the Henri Kummerman Foundation has the express purpose of advancing education and research in the field of maritime transport. Maine Maritime Academy is currently involved in establishing a Center of Advanced Maritime Studies, and receipt of the award from the Kummerman Foundation is considered timely and encouraging.

Commenting on the donation from the Foundation, Adm. Edward A. Rogers, superintendent of Maine Maritime Academy, said that Henri Kummerman's boundless energy and enthusiasm for furthering maritime education was acknowledged throughout the U.S. marine industries, and this latest example of his continuing interest would be deeply appreciated by students and graduates of the Academy.

Maine Maritime already awards an annual Henri Kummerman Foundation research grant to a junior class student, and funds have also been made available from the Foundation to the Webb Institute, New York Maritime College, and the University of Connecticut in order to assist selected students in the pursuit of their studies.

## R. Wilkes And J. Wylde Announce Formation Of New Shipping Agency

The formation of a new shipping agency, Wilkes, Wylde & Co., Inc., to operate initially in Savannah and Atlanta, Ga., and Charleston, S.C., has been announced by the principals.



R.M. Wilkes

John Wylde

R.M. (Bud) Wilkes, who has long been active in shipping circles in the U.S. Gulf and Southeast areas, is president of the new firm. John Wylde, president of Patterson, Wylde & Co., Inc., Boston, is chairman of the board.

Mr. Wilkes has been in the ship agency business since 1948, and has worked in Norfolk, New Orleans, Houston, and Savannah. In 1975, he established Wilkes Shipping Agency Inc., which became a part of Farrell Lines in 1979.

According to Mr. Wylde, particular stress will be upon the intermodal, traffic, and marketing relationships to new generation vessels and practices.

The headquarters office of Wilkes, Wylde will be the Trust Company Bank Building, 16 West Broughton Street, Savannah, Ga. 31401; (912) 236-9892.

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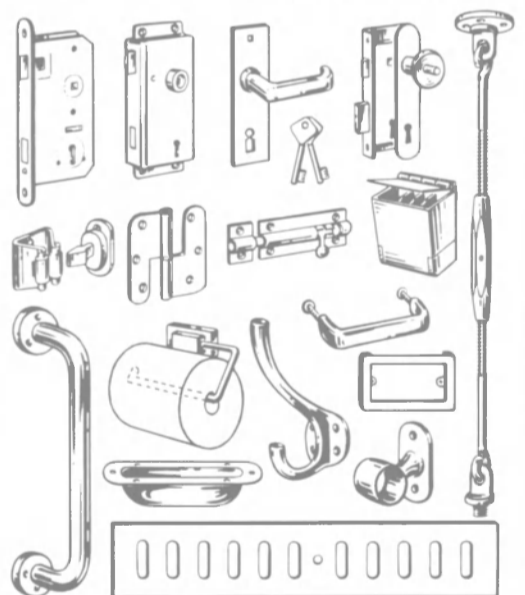
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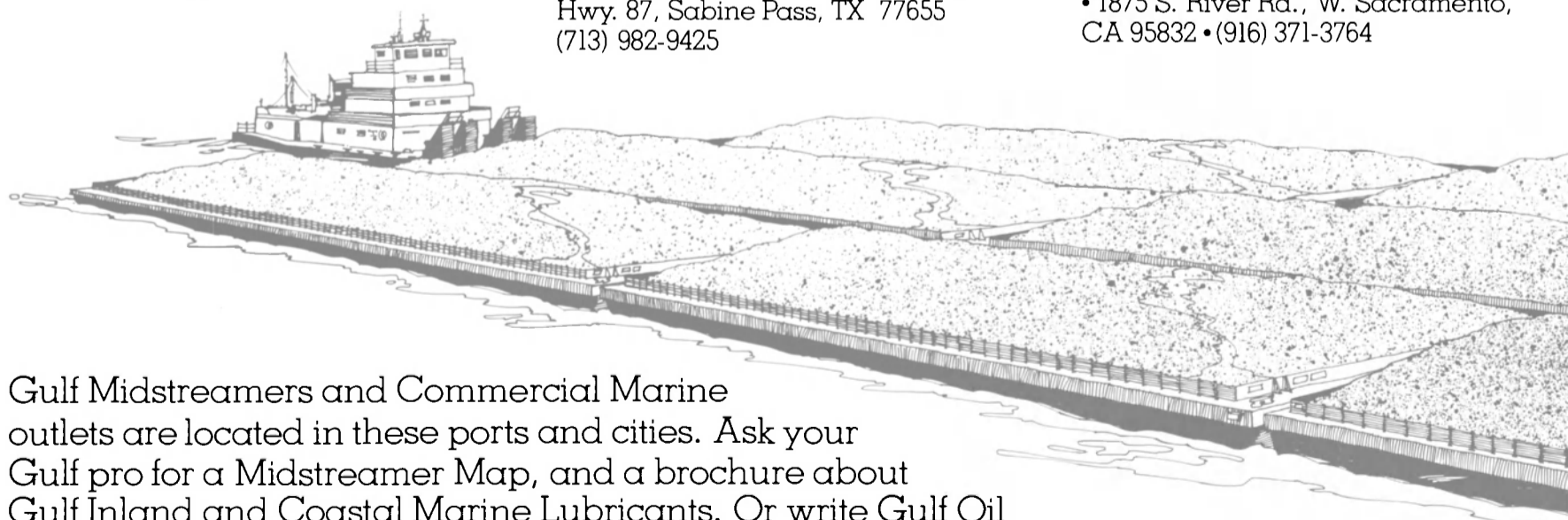
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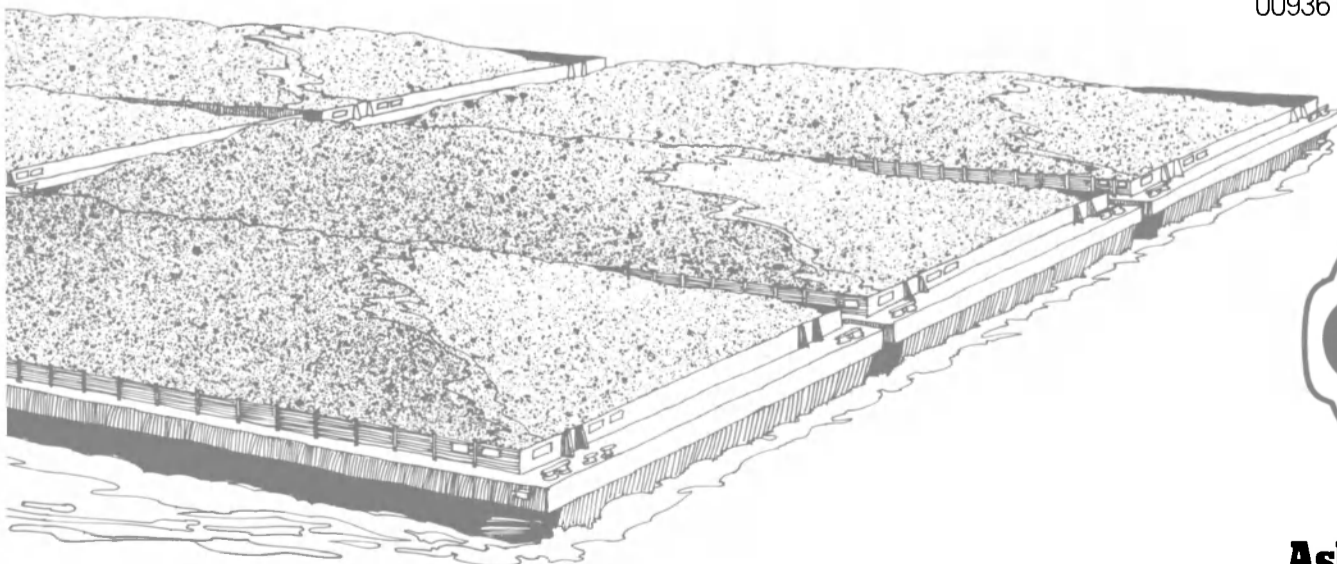
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gram, with simultaneous sessions occurring on several days.

A "Dredging Conference" (November 20-21) will be sponsored by the Central Dredging Association (CEDA) of Holland. Emphasis will be on supplies for the dredging world, including innovations, dredging duty transmissions, and wear-resistant materials and components.

A "Fourth Offshore Craft Conference" (11/18-20) will be presented by the Thomas Reed Organisation. "Specialized Ships" (11/19) will be the theme of a third conference. Europort '80 will also present its first "Inland Shipping" conference (11/20-21), and a "Third World Symposium" (11/19-20) sponsored by the Alliance Foundation.

For further information and brochures on Europort '80 Exhibition and Conferences, write to **Peter K. Johnson**, Dept. M.R., Europort, 6006 Bellaire Blvd., Houston, Texas 77081.

**Helmuth Kopcke Named  
Gulf Coast Vice  
President For Anixter**



Helmuth Kopcke

Helmuth Kopcke has been named vice president, shipyards, and oil rigs-Gulf Coast for Anixter Bros., Inc., Skokie, Ill., it was announced by **Bob Wilson**, vice president of Anixter's Wire and Cable Division.

An 11-year veteran with Anixter, Mr. Kopcke has been general manager of Anixter-New Orleans for the past four years.

**Fact Sheet Describes  
And Illustrates New  
Multiple-Size Rams**

NL Rig Equipment of Houston has prepared a fact sheet illustrating and describing the new Shaffer Multi-Ram™ multiple-size rams.

The new rams are designed to close and seal on drill pipe from 3 1/4 to 5 inches in diameter, making Multi-Ram rams especially useful in situations in which a tapered string is employed. These rams are said to save drilling time and costs because they make ram change-out unnecessary.

The variable Multi-Ram fit is accomplished through the use of unique ram rubbers with molded-in steel segments. As hydraulic pressure increases, the segments move radially inward, decreasing the bore size and ensuring a reliable seal. In addition, the new rams use standard ram holders and retaining screws, which makes them interchangeable with regular rams in Shaffer blowout preventers.

NL Rig Equipment/NL Industries, Inc. manufactures, sells and services drilling and production equipment worldwide for the oil industry.

For a free copy of the new fact sheet, write to **Dave Wilkinson**, NL Rig Equipment, Dept. MR, P.O. Box 1473, Houston, Texas, 77001.

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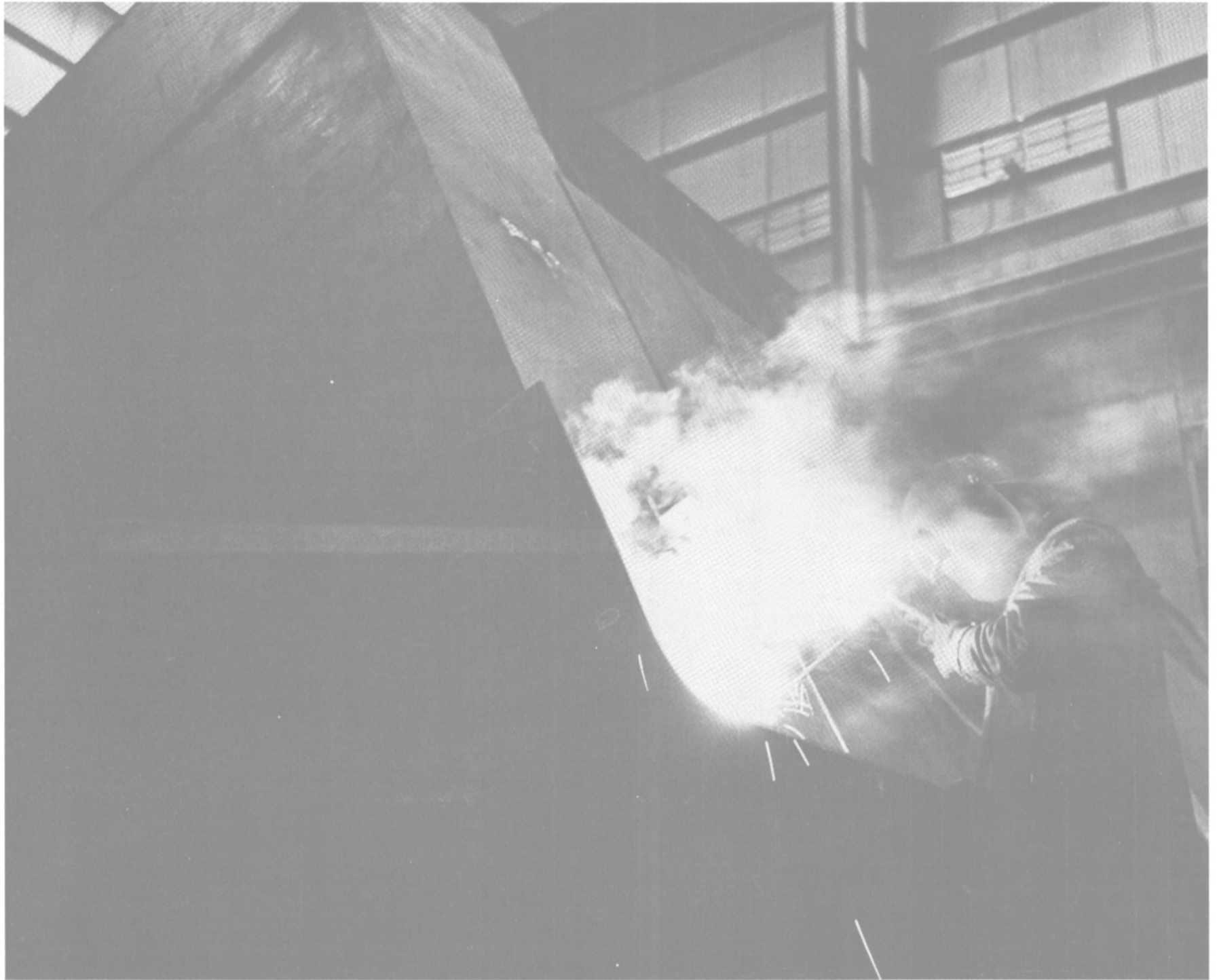
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**New Early-Warning Device  
Protects Electric Motors—  
Literature Available**

Insulation failure is by far the most frequent cause of costly burnouts in marine electrical machinery. While a motor or generator is idle, its coil is under continuous attack by shipboard atmosphere and contaminants. In-

sulation resistance eventually drops below safe levels. If the condition is undetected, a burnout results seconds after start-up. Expensive rewinding is required and, when the affected motor is essential and non-redundant, the resulting delays can be far more costly.

Marine Safe Electronics of Canada, Ltd., is now offering the marine industry an economical al-

ternative. The Fail-Safe (patent pending) motor generator protector is an early-warning device that promises to prevent virtually all such burnouts.

Easily mounted in the starter enclosure of motors or on the main switchboard of generators, the device continuously monitors insulation resistance in idle ac equipment. When resistance falls below a preselected level, the Fail-

Safe unit, in addition to early-warning alarm, can provide start prevention or start prevention with emergency override.

The device is U.L.-listed and has been approved or accepted worldwide by the U.S. Coast Guard, American Bureau of Shipping, Lloyd's Register of Shipping, Det norske Veritas, and Germanischer Lloyd. It has completed an extensive testing program on several major vessels, with results meeting or exceeding the manufacturer's expectations.

For further information and free literature on the Fail-Safe motor protectors, write to **Josh Lapsker**, Dept. M.R., Marine Safe Electronics of Canada, Ltd., 101 Jardin Drive, Concord (Toronto), Ontario, Canada L4K 1B6.

**Zapata Completes  
Acquisition Of Offshore  
Marine Limited Of U.K.**

Zapata Corporation has said that the previously announced acquisition of Offshore Marine Limited from The Cunard Steam-Ship Company Limited, a Trafalgar House Limited subsidiary, has been completed.

The acquisition, by Zapata Offshore Services Limited, Zapata's U.K. subsidiary, involved 24 offshore oilfield supply vessels. Zapata's marine service fleet now totals 75 vessels, which work under contract to offshore operators worldwide.

Zapata Corporation is a diversified natural resources company, primarily involved in the development of energy and proteins. In addition to marine services, its businesses include offshore drilling, oil and gas operations, shipping, coal mining; commercial fishing and related processing; and construction and dredging.

**Hydraulic Services  
Brochure Available  
From Fluid-Technology**

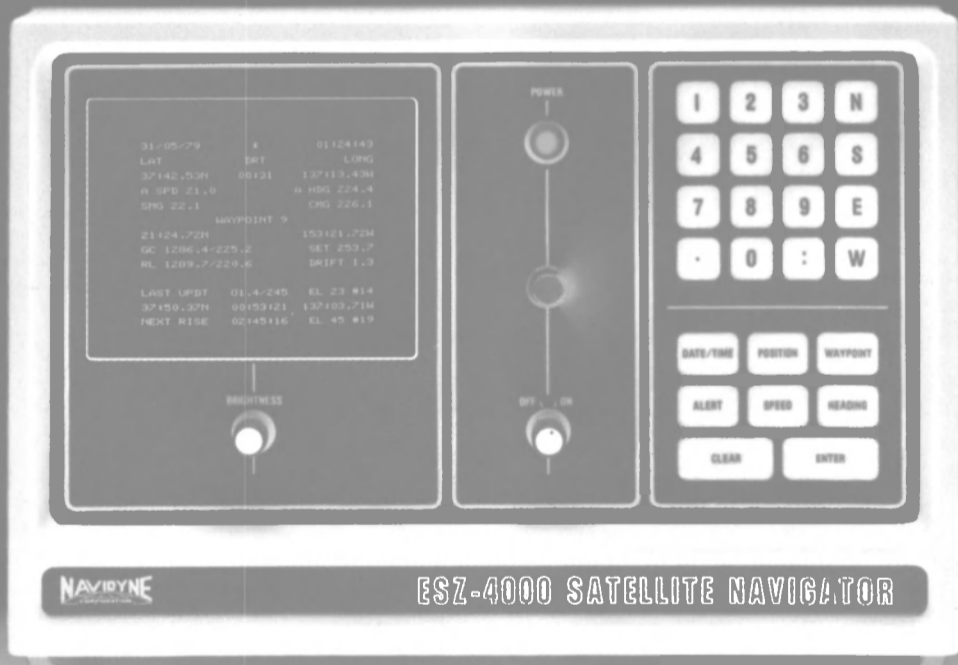
Fluid-Technology, Inc. of Jacksonville, Fla. has just published a brochure describing its complete air and hydraulic services, and its fluid power designs and products.

The service and repair firm specializes in heavy machinery and marine hydraulics, both commercial and naval. It repairs and services steering systems, capstans and winch hydraulics, and bow thrusters; and rebuilds control air systems, air compressors, pumps, and motors.

These are just some of the many areas in which Fluid-Technology provides service and repair, trouble-shooting, and systems engineering.

For additional information and a copy of the brochure, write to **Rick Johnson**, Dept. M.R., Fluid-Technology, Inc., 10626 Phillips Highway, Jacksonville, Fla. 32224.

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**THE INSIDE STORY.**

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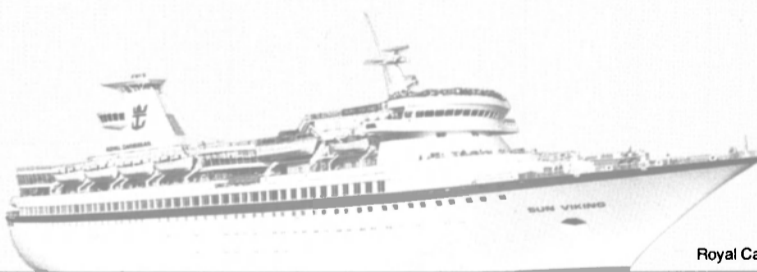
So contact Navidyne Corporation, 11824 Fishing Point Drive, Newport News, VA 23606 USA. Telephone: (804) 874-4488. Telex: 82-3653 (NAVIDYNE NPNS).

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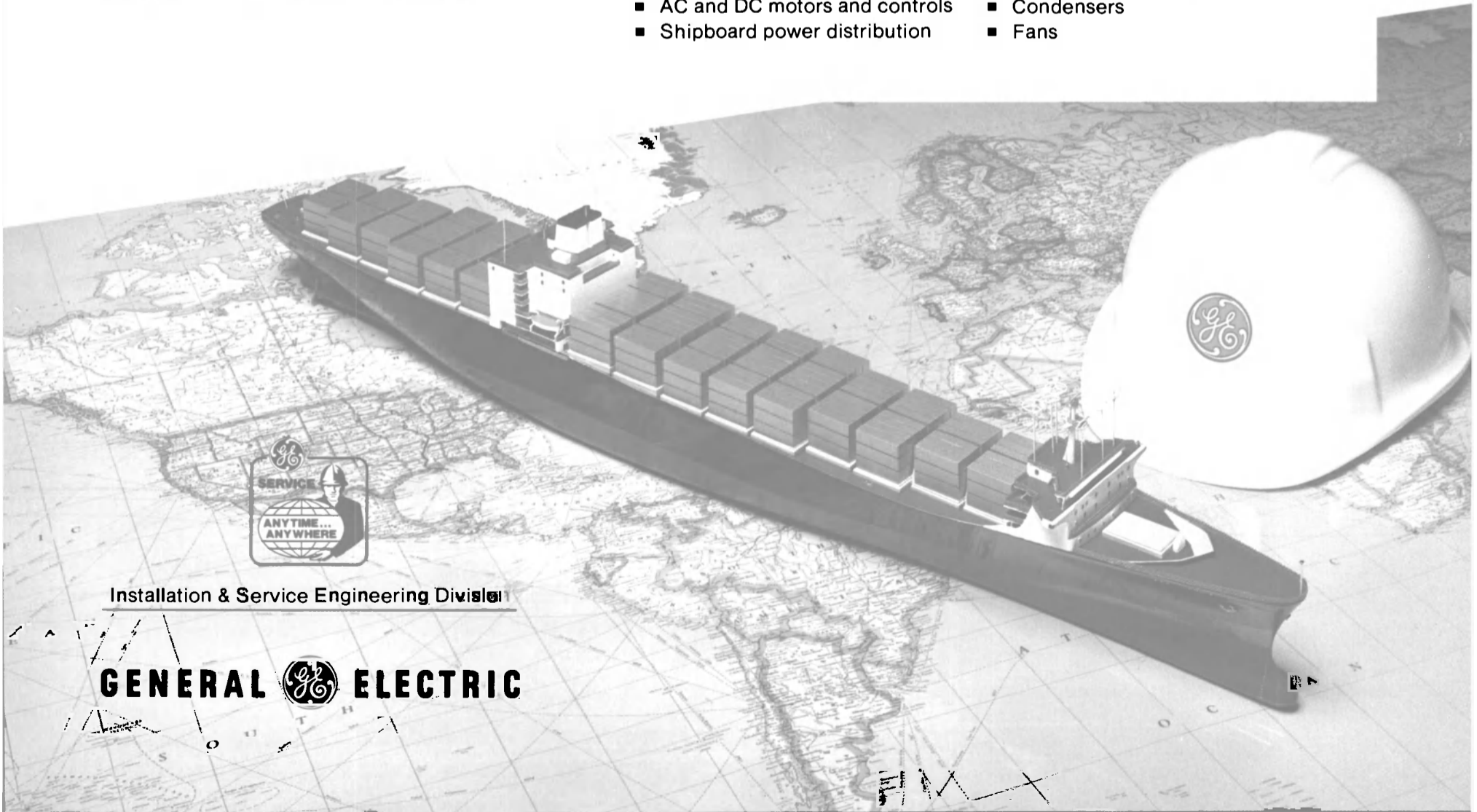
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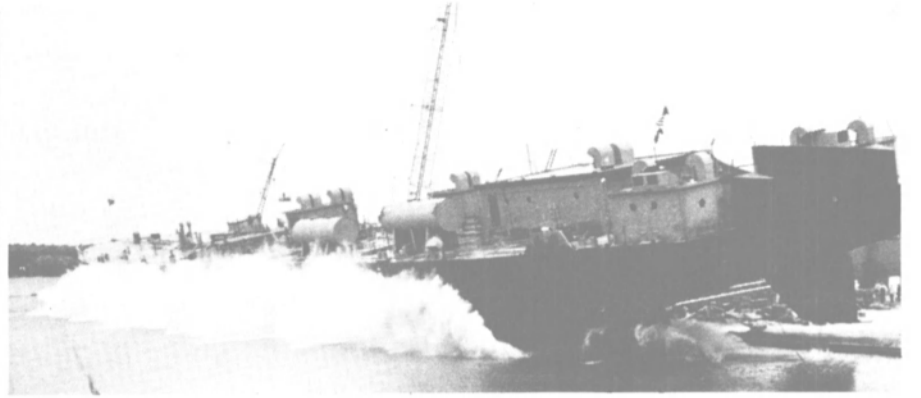
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\*Regional Marine Superintendent



Tank barge Marie Tilton, under construction at Bay Shipbuilding for Turecamo Coastal & Harbor Towing Corporation, was side-launched recently at the Sturgeon Bay, Wis., yard. The 396-foot vessel is first built by Bay for Turecamo firm.

**Big Turecamo Barge Launched  
At Bay Shipbuilding Yard**

Bay Shipbuilding Corporation in Sturgeon Bay, Wis., entered saltwater shipbuilding when the 396-foot tank barge Marie Tilton, built for Turecamo Coastal & Harbor Towing Corporation, was christened and launched in a recent dual ceremony.

The Marie Tilton is named in memory of Mrs. Marie Tilton, wife of George Tilton, retired vice president of Turecamo Tankers, and sister of Bart J. Turecamo Sr., president of Turecamo Coastal & Harbor Towing Corporation and Turecamo Tankers.

Mrs. Mary Loy Robshaw, the vessel's sponsor and the daughter of Marie and George Tilton, broke the champagne bottle christening Bay Shipbuilding Hull 725. Moments later, the 396-foot tank barge was side-launched.

The Marie Tilton has a beam of 72 feet and an amidship side depth of 25 feet 10 inches. The barge can be either towed or pushed by tug. To be operated in the New York City area, the barge will be suitable for carrying grade B, and lower, petroleum products, including heavy fuel oil.

Ten cargo tanks with two abreast and five in length will

have a volumetric capacity of 103,500 barrels. Three main cargo deepwell pumps, with individual capacities of 6,000 barrels per hour, will be on deck. Each pump will be powered by a GM Detroit Diesel V16 engine developing 480 bhp. Three additional diesel engines, rated at 446 bhp each, will give the barge a total off-loading capacity of 18,000 barrels per hour.

Constructed as an "Unmanned Offshore" and "Special Service Manned Barge," the Marie Tilton has two outfitted staterooms and a complete galley for a two-man crew. Ship's service electrical power is provided by four diesel engines driving two 30-kw and two 100-kw generator sets.

A flexible cargo-handling system has been built into the Marie Tilton to facilitate the carrying of multiple cargoes. More than seven miles of heating coil piping has been incorporated into the barge for cold weather operation.

This was the first vessel built by Bay Shipbuilding for Turecamo Coastal & Harbor Towing Corporation. Bay Shipbuilding, a subsidiary of The Manitowoc Company, intends to actively engage in securing contracts to build more saltwater vessels.



Backhand swing by Mrs. Mary Loy Robshaw breaks the bottle of champagne on bow of new Turecamo tank barge. Looking on is her husband John Robshaw.





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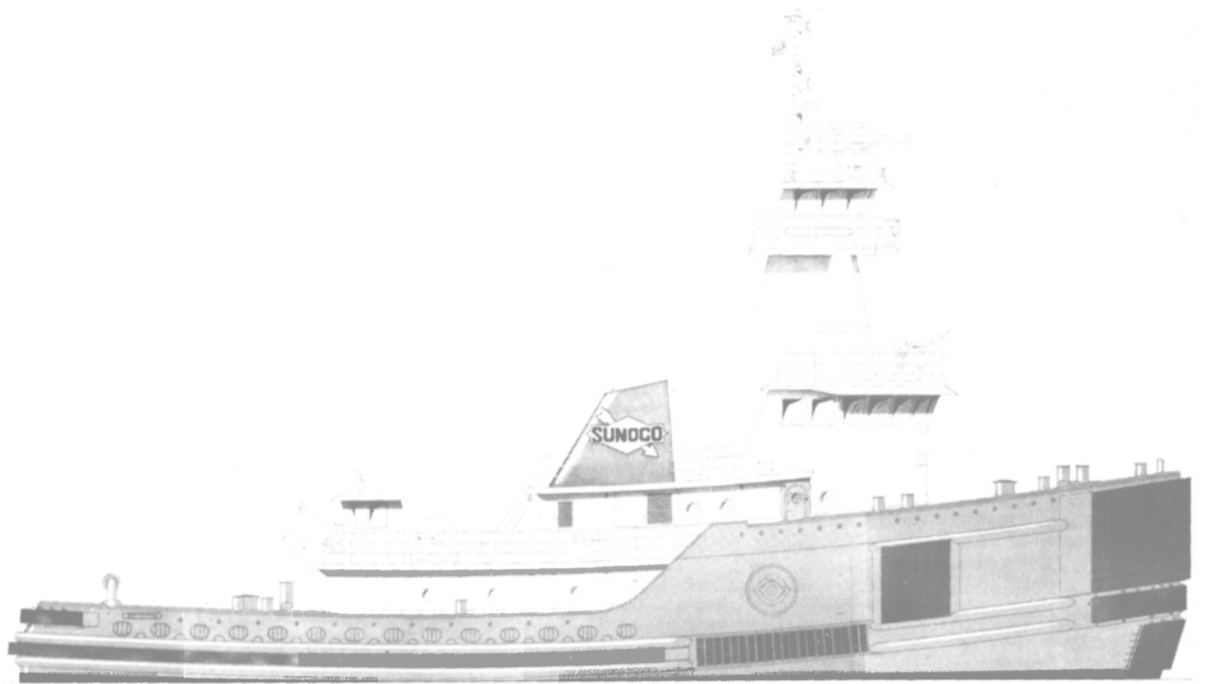
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**YORK** **BORG-WARNER**



Artist's rendering of 4,600-bhp tugboat, part of a tug/barge unit, that John W. Gilbert Associates of Boston will design for Sun Transport, Inc., Claymont, Del.

## Gilbert Associates Will Design Tug/Barge Unit For Sun Transport

John W. Gilbert Associates, Inc. of Boston has received a contract from Sun Transport, Inc. of Claymont, Del., to design an advanced tug/barge unit for carriage of specialty petroleum products between U.S. East and Gulf Coast ports. The 4,600-bhp tug and 95,000-barrel barge will incorporate safety and design features not commonly found in units of similar concept.

The tug will have a length of 119 feet 7 1/8 inches overall, a beam of 36 feet, and a depth of 20 feet 6 inches. The vessel's propulsion power will come from a pair of GM Electro-Motive Division 12-645-E7B engines, each driving a 9-foot 6-inch Kaplan propeller turning in a Kort nozzle. For maneuvering, the vessel will have two steering and four flanking rudders, all operated by rotary steering gears.

Safety features of the tug include non-combustible joiner work, emergency power-generation capability, full foam fire-fighting system, full towing outfit including a towing winch, and full Notation ACCU engine room control and monitoring. In addition, the tug meets or exceeds all worldwide criteria for stability, having been designed with particular regard for freeboard and location of down-flooding point in all conditions.

The barge will measure 414 feet in length, 75 feet in beam, and have a depth of 33 feet 6 inches. The hull shape was designed under subcontract by Corning Townsend III, marine consultant of Georgetown, Conn. Notable features of the barge include the use of corrugated bulkheads to aid in tank cleaning, an onboard, fixed tank-cleaning system, as well as full fire-fighting capability for use when the tug is not nearby. The barge is also full-coiled and coated, and will carry xylenes, lubes, and ethylene glycol.

The most unique feature of the tug/barge combination will be use of the "Articouple" linkage system to join the two vessels in

all sea states. Based on studies done before the design was undertaken, the combination will be able to operate in a 100-percent push mode in all weather projected to be encountered along her trade routes. The tug, however, is multipurpose, expected to be used moving other barges in the Sun fleet, as well as handling tankers at Sun's Marcus Hook, Pa. and Corpus Christi, Texas, terminals.

Both vessels will be U.S. Coast Guard inspected and American Bureau of Shipping classed.

Bids for construction are expected to be solicited when the design is completed, about mid-November this year.

Robert P. Hill is the designer for this project.

### Todd And Avondale Converting Five Barges For Trailer Marine

Trailer Marine Transport Corporation is converting five 400 by 100-foot double-deck barges to triple-deck for its roll-on/roll-off cargo service between Lake Charles, La., and San Juan, Puerto Rico, according to Robert G. Homan, senior vice president and general manager of the Caribbean Division of Crowley Maritime Corporation, TMT's parent company.

The third deck on each barge will be 18 feet wider than the lower decks, providing an additional trailer lane on each side and increasing each barge's capacity from 180 to 288 forty and forty-five-foot trailers.

Conversion of the first two barges has been completed, and all five vessels will be in service by the end of the year. Todd Shipyards, Houston, is performing the work on three barges, and Avondale Shipyards, New Orleans, is converting the remaining two.

**NKK To Build \$56-Million Offshore Platform Jacket Off Australia**

NKK (Nippon Kokan) will build a \$56-million jacket for a conventional offshore platform off the northwest coast of Australia. According to NKK officials in New York, the contract was signed with Woodside Petroleum Development Pty. Ltd. of Australia. The company is the operator of a joint venture, which also includes Shell, Broken Hill Proprietary Company, Ltd., British Petroleum, and California Asiatic Oil Company. This joint venture is conducting oil development operations in Australia.

The offshore platform, one of the largest

of its type in the world, will be installed at the North Rankin Gas Field off the northwest coast of Australia. NKK's responsibilities will include steel procurement, fabrication of the jacket, load-out, and tie-down on the seagoing barge for transport to Australia.

All the steel materials for the jacket, which will require some 20,000 tons of steel, will be manufactured by NKK. The jacket will be fabricated at NKK's Tsu Works, and will be delivered in April 1982.

The jacket will measure 146.5 meters high (481 feet)—124.5 meters submerged depth (408 feet)—and the rectangular base formed by the eight legs will measure 67.4 meters by 82.9 meters (221 feet by 272 feet).



**SECOND CRANE FOR RICHMOND** — A second 37-ton, A-frame container crane is now operational at the Port of Richmond, Calif. The new crane, built and erected by Paceco, is capable of handling 20- to 40-foot containers; it has a 110-foot boom outreach and a 31-foot backreach over the terminal. It will almost double container loading and unloading rates, making ship turnaround times at Richmond competitive with other container ports providing service from the U.S. West Coast to Southeast Asia.

**Gladwell And Soose Appointed Managers At Dravo Mechling**

Dravo Mechling, the subsidiary barge line of Dravo Corporation, has appointed **David M. Gladwell** as St. Louis regional sales manager and **Harry J. Soose Jr.** as manager, accounting.



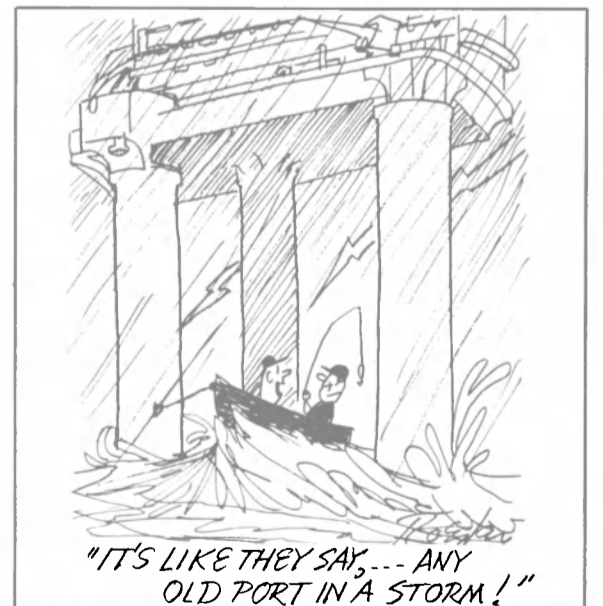
David M. Gladwell

Harry J. Soose Jr.

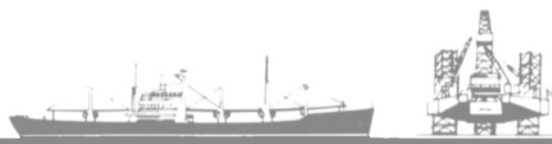
Mr. Gladwell, who joined Dravo Mechling in 1976, was most recently manager, customer services.

Mr. Soose joined Dravo in 1974, and was previously the supervisor of operations analysis at Dravo Mechling.

Dravo Mechling, one of the nation's largest barge lines, provides common and contract towing on the river system and the Gulf Intracoastal Waterway.



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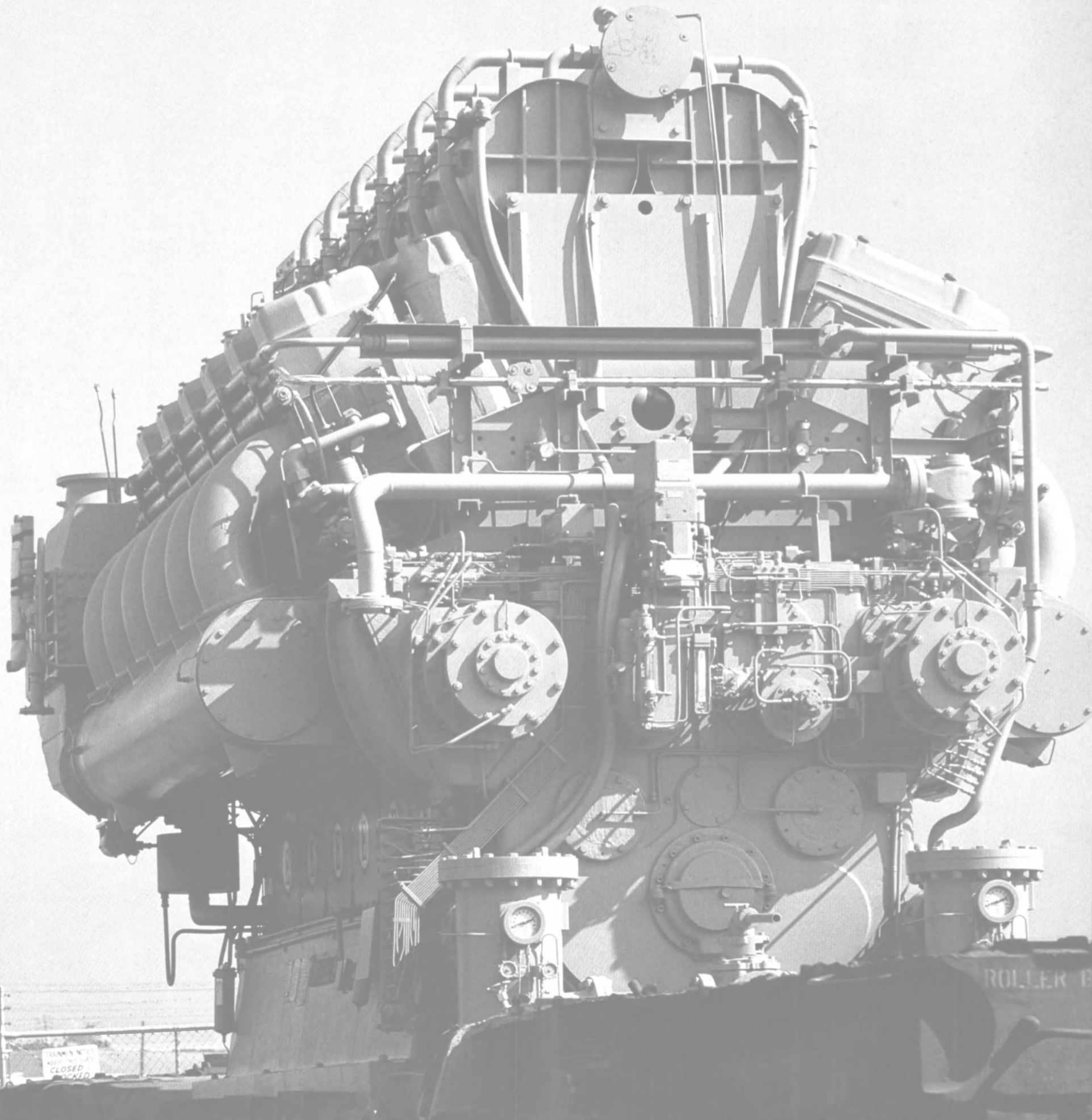
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## Stewart & Stevenson Gets Navy Contracts Totaling \$23.7 Million

Stewart & Stevenson Services, Inc. has received contracts totaling \$23,725,000 from the U.S. Navy, providing ship's service auxiliary power for three classes of vessels.

Stewart & Stevenson will supply Detroit Diesel Allison, gas-turbine-powered, 2,500-kw generator sets for the Navy's new Aegis cruiser. The Navy's initial \$8,375,000 contract is to provide three of the generator sets for each of the first two cruisers. The Aegis cruisers are the United States' most capable anti-air service combatant. The mission of the

Aegis cruiser is to operate effectively in the presence of air, surface, and subsurface threats, with strike, antisubmarine, or amphibious forces.

Stewart & Stevenson has also received a \$3,150,000 follow-on contract from the Navy to provide three 2,000-kw Detroit Diesel Allison gas turbine generator sets

for the new Spruance-class destroyer. Stewart & Stevenson has provided the generator sets on all Spruance-class destroyers for the U.S. Navy.

A \$12,200,000 follow-on contract has also been awarded to Stewart & Stevenson to provide ship's service auxiliary power for six new Oliver Hazard Perry class, missile-launching patrol frigates, each utilizing four 1,000-kw diesel-powered generator sets. Stewart & Stevenson earlier has provided generator sets for 43 of the Navy's frigates in the Perry class. In addition, the present option agreement allows the prime contractor to order generator sets up to 28 additional sets under this multiyear procurement program.

# PROVEN SUCCESS



## Armco Announces New Submerged Arc Weld Wire —Literature Available

A new submerged arc chrome-moly welding wire, called W-22, is available from the Western Steel Division of Armco. Produced by Armco to the American Welding Society Specification A5.23, Classification EB3, W-22 is a low-carbon, alloy steel wire containing 2.75 percent chromium and 1.00 percent molybdenum. It provides matching alloy weld deposits, when used with neutral fluxes, to join the 2½ chrome-1 moly steel — plates, pipings, and forgings.

Deposits made with W-22 are designed to meet AWS Classification EB3 in A5.23 Table 2, and normally are in the 90-ksi tensile strength range.

Steel specifications where W-22 is used include ASTM and SA A 387 Class 22, A671 Class 22 or A335 P22 pipe, and F22 and WP22 forgings.

When specified, Armco W-22 can be provided to meet the ASME SFA Boiler and Pressure Vessel Section III for nuclear material. Standard wire diameters of W-22 are 5/64, 3/32, 1/8, 5/32, and 3/16 inches. The grade is available in 60-pound coils and standard pay-off drums, or in 30-pound and 200-pound coils upon inquiry.

This new weld wire is the latest in an Armco family of submerged arc welding wires. Eight different grades ranging from W-3 to W-25 provide a selection of compositions which, when used with the proper flux and welding procedures, can meet the varied needs of designers and fabricators for strength, ductility, and impact toughness in submerged arc weldments of carbon, alloy, high-strength low-alloy, and heat-treated carbon and alloy steels.

For more information on this new welding wire, write to **Donald Frisby**, Armco, Western Steel Division, 1455 West Loop South, Houston, Texas 77027.

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For information about the success of UNI-PAK's performance—or to inquire about Mobil's complete line of high performance coatings—contact your Mobil representative today or write to Mobil Chemical, Maintenance and Marine Coatings Department, P.O. Box 250, Edison, N.J. 08817.

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MAINTENANCE & MARINE COATINGS DEPARTMENT

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Kankakee, Illinois  
Los Angeles area / Azusa, California



## Charles Vogt Appointed VP-East Gulf For Gulf & Eastern SS

Gulf and Eastern Steamship and Chartering Corporation has announced the appointment of **Charles H. Vogt** as vice president-East Gulf, headquartered in New Orleans.

Mr. Vogt, who was formerly a corporate officer with Roberts Steamship Agency, has spent many years in the ship agency and trucking business.

Gulf and Eastern has offices and representation throughout the United States and Gulf. Representation includes Forest Lines, Dart Containerline, Pan Atlantic Line, and Seaboard Shipping.

## Hydro Offers New Offshore Service

### —Literature Available

Hydro Manufacturing & Sales, Inc., manufacturers of and service representatives for high pressure water blasting equipment, has recently begun a new service specifically designed for the offshore industry. The company now offers water blasting equipment and/or personnel on a rental basis for use on offshore rigs. "It makes life a lot simpler for the rig operator," says **Joe Parish**, Hydro vice president, "he only has to deal with one contractor . . ."

Hydro Manufacturing & Sales has been providing water blasting equipment for the oil, gas and petrochemical industry for the past 15 years.

For free literature and more information, write to **Joe Parish**, Hydro Manufacturing, Dept. MR, P.O. Box 308, Missouri City, Texas 77459.

## J.J. Henry And Seadrec Form Joint Venture To Serve Dredging Clients

The J.J. Henry Company, Inc. of Moorestown, N.J., and Seadrec Ltd. of Paisley, Scotland, announce the formation of a joint venture company to provide dredge designs, detail construction drawings, associated engineering services, and dredge equipment to clients throughout the United States and Canada.

Corporate offices for the new company, which will be named Amalgamated Dredge Engineering, Inc., are located in the Moorestown office of the J.J. Henry Company, with additional premises within the Seadrec offices at Independence Square in Philadelphia. The combined resources, technology, and in-depth experience of the two parent organizations will enable the new firm to provide immediate design and engineering services, as well as the full line of Seadrec dredge equipment, to dredging contrac-

tors, governmental agencies, shipbuilders, and ship repair facilities.

The operating vice presidents of the new firm will be **David F. McMullen**, assistant vice president of J.J. Henry, and **Alexander E. Izett**, director of American operations for Seadrec. Both men are career employees of their respective companies, and will bring many years of experience to their new positions.

Seadrec Ltd. is the United Kingdom's most experienced dredge designer, builder, and supplier of dredging equipment, and has acquired international recognition in these highly specialized fields. The J.J. Henry Company is one of the leading naval architectural and marine engineering firms in the U.S., and has built a reputation through the years for innovative, economical and practical ship de-

signs as well as becoming one of the nation's largest independent producers of detail construction drawings.

Both firms in the past have independently provided engineering services and support to the Army Corps of Engineers in their hopper dredge building program, as well as to other dredging-related clients throughout the United States.

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- Larger targets displayed more brilliantly than small targets.
- "Three-dimensional" effect aids in target identification.

### STANDARD

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- Ensures noise-free picture.
- Improves contrast, especially for weak targets.
- Can be used full-time, even near land.

### STANDARD

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- Entire scope uniformly bright.
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### STANDARD

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- 78% larger than 9-inch radar.
- 44% larger than 10-inch radar.
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**RAYTHEON** **Mariners Pathfinder® Radars**

**Furuno Offers  
Two New Sonars—  
Literature Available**

Furuno has announced the availability of two new high-performance sonars for commercial and sport fishermen. Both units offer an exceptionally wide range of standard features, such as automatic target tracking, 1-kw output power, choice of 60 or 150-kHz operating frequency, a com-

pact and rugged hull unit and sound dome with 0 to 90-degree tilt, automatic or manual train, and adjustable sector scan.

The Model FH-107 has an ultra-compact display unit featuring a 7-inch CRT (integral magnifier presents 12-inch equivalent picture) and six selectable ranges out to 2,600 feet. Available as an option is Furuno's SI-105A sonar range indicator, which provides direct digital readout slant or horizontal range and target depth.

The Furuno FH-106, with its high-persistence, 10-inch CRT, offers a much broader range of standard features. Six range steps to 5,200 feet are provided, each of which has a variable "fine tuning" zoom capability within the range selected. A built-in digital display shows tilt angle plus VRM for maximum screen range, slant range to target, or horizontal distance to target.

The key operating feature of the FH-106 is the memory dis-

play. An IC memory stores target echoes after one transmission pulse, then repeats them while the sweep smoothly continues rotating. This feature provides an exceptionally clear "radar-like" picture not available in other step-by-step searchlight sonars. In addition, visibility in long-range detection is increased dramatically due to the steady, non-fading echoes.

Both sonars may be supplied in 12-, 24-, or 32-volt dc versions (ac operation with optional rectifier), and are now in stock for immediate delivery.

For further information on these new sonars, write to **William Dupre**, Furuno U.S.A., Inc., Dept. MR, P.O. Box 2343, South San Francisco, Calif. 94080.

**T. Yakushijin Named  
General Manager For  
NYK In San Francisco**

**Kunio Hashida**, NYK Line's general manager in San Francisco for the past three years, has been appointed research commissioner in charge of special projects in the management coordination chamber at the company's Tokyo headquarters. Succeeding Mr. Hashida as general manager in San Francisco is **Toshiro Yakushijin**, formerly assistant general manager for NYK in Osaka.

Mr. Hashida, who joined NYK in 1952, served in Hamburg for three years and in Paris for seven years before he was assigned to San Francisco in August 1977.

Mr. Yakushijin, who joined NYK in 1954, also served in foreign offices, including Nairobi and Johannesburg, prior to his Osaka assignment.

NYK is represented as general agents by Matson Agencies in West Coast ports, Alaska, and Hawaii.

**Catalog On Worm Gears  
Available From Delroyd  
Division Of Transamerica**

A new 16-page, illustrated catalog has just been published by Delroyd Worm Gear Division of Transamerica Delaval Inc.

The catalog presents summaries of engineering information on six distinct product lines: worm gear sets with reduction ratios from 5:1 to 180:1; single-reduction speed reducers with ratios from 5:1 to 70:1; helical-worm speed reducers with ratios from 15:1 to 355:1; double-worm speed reducers with ratios from 75:1 to 4,900:1; worm gear drives with ratios from 5:1 to 100:1; and a line of non-standard gearing and speed reduction equipment.

Free copies of the new catalog may be obtained by writing to **Walt Lee**, Transamerica Delaval Inc., Delroyd Worm Gear Division, Dept. MR, P.O. Box 8633, Trenton, NJ 08650.

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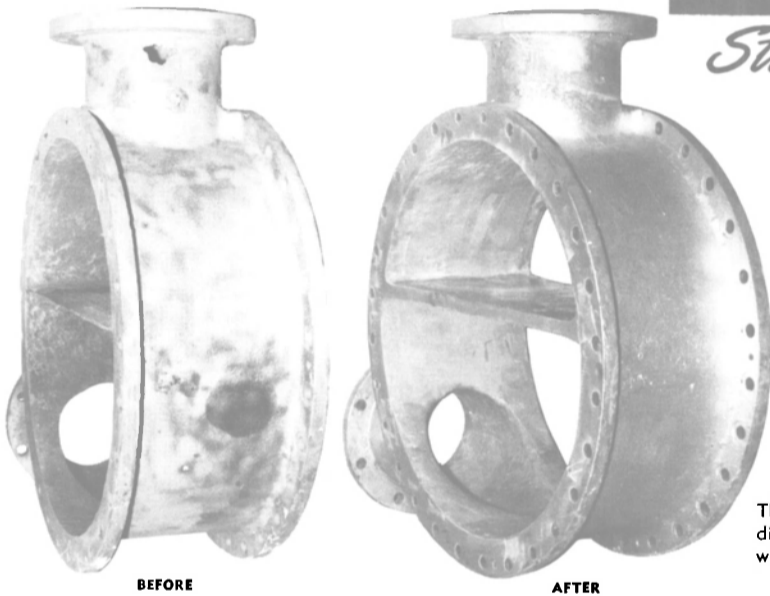
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R. Landry & Company, Ltd.

**Marathon To Build  
\$30-Million Jackup Rig  
For Chiles Offshore**

Chiles Offshore Limited has signed a letter of intent with Marathon LeTourneau Offshore Company to purchase an 82-SD-C self-elevating, shallow-draft cantilever drilling platform for a total rig price of \$30 million.

The 82 SD-C rig, designed for exploration, production drilling, and workover, will be constructed in Marathon's Gulf Marine Division yard, Brownsville, Texas, and is scheduled for delivery in March 1983.

The rig (Marathon Hull No. 182) is the fourth ordered from Marathon by Chiles and will be used for drilling operations in the Gulf of Mexico. The rig will be equipped with 360 feet of leg and capable of drilling in 250 feet of water to a drilling depth of 20,000 feet.

In addition to this new rig, Chiles currently operates three Marathon-type 150-44-C self-elevating, shallow-draft cantilever drilling platforms.

Marathon LeTourneau Offshore Company is a subsidiary of Marathon Manufacturing Company, Houston. Marathon is a leading manufacturer of mobile offshore jackup drilling rigs and a multi-product company manufacturing materials handling equipment, fabricated steel product, steel buildings, white oils, batteries, consumer goods, and provides civil engineering and construction services.

**O'Boyle Firm Named  
U.S. Representative  
For Italian CNOMV**



Richard F. O'Boyle

Richard F. O'Boyle, president, announces that the firm of Richard F. O'Boyle, Inc. has been appointed U.S. sales representative for CNOMV (Cantieri Navali e Officine Meccaniche di Venezia, S.P.A.) of Venice, a member of the Fincantieri group of Italian shipyards. Antonio Marceglia, president of the yard, announced the appointment during his recent visit to the United States to attend a general meeting of the Fincantieri group with its customers and U.S. representatives.

The occasion for the meeting was the renewed emphasis by the Fincantieri group on the United States market.

As all trends indicate that more shipboard work will be done by shoreside labor, Mr. O'Boyle's firm was organized last year to represent the sales interests of ship repair organizations. There are many excellent ship repair groups worldwide who do quality

work but are virtually unknown in the U.S. market.

One of the first companies to sign up with Richard F. O'Boyle, Inc. was North Florida Shipyards of Jacksonville, whose principal Joseph B. Schiffert has been in ship repair for 30 years. Beginning as boiler insulation specialists (Thermal Engineering) 13 years ago, North Florida now employs a work force of 300 in all

crafts, who can do virtually any repair or conversion to ships, barges, and towboats with the exception of drydocking.

The O'Boyle firm also represents repair organizations in Taiwan, India, Japan, and Singapore.

For additional information, write to Richard F. O'Boyle, Richard F. O'Boyle, Inc., Dept. MR, P.O. Box 595, Aberdeen, N.J. 07747.

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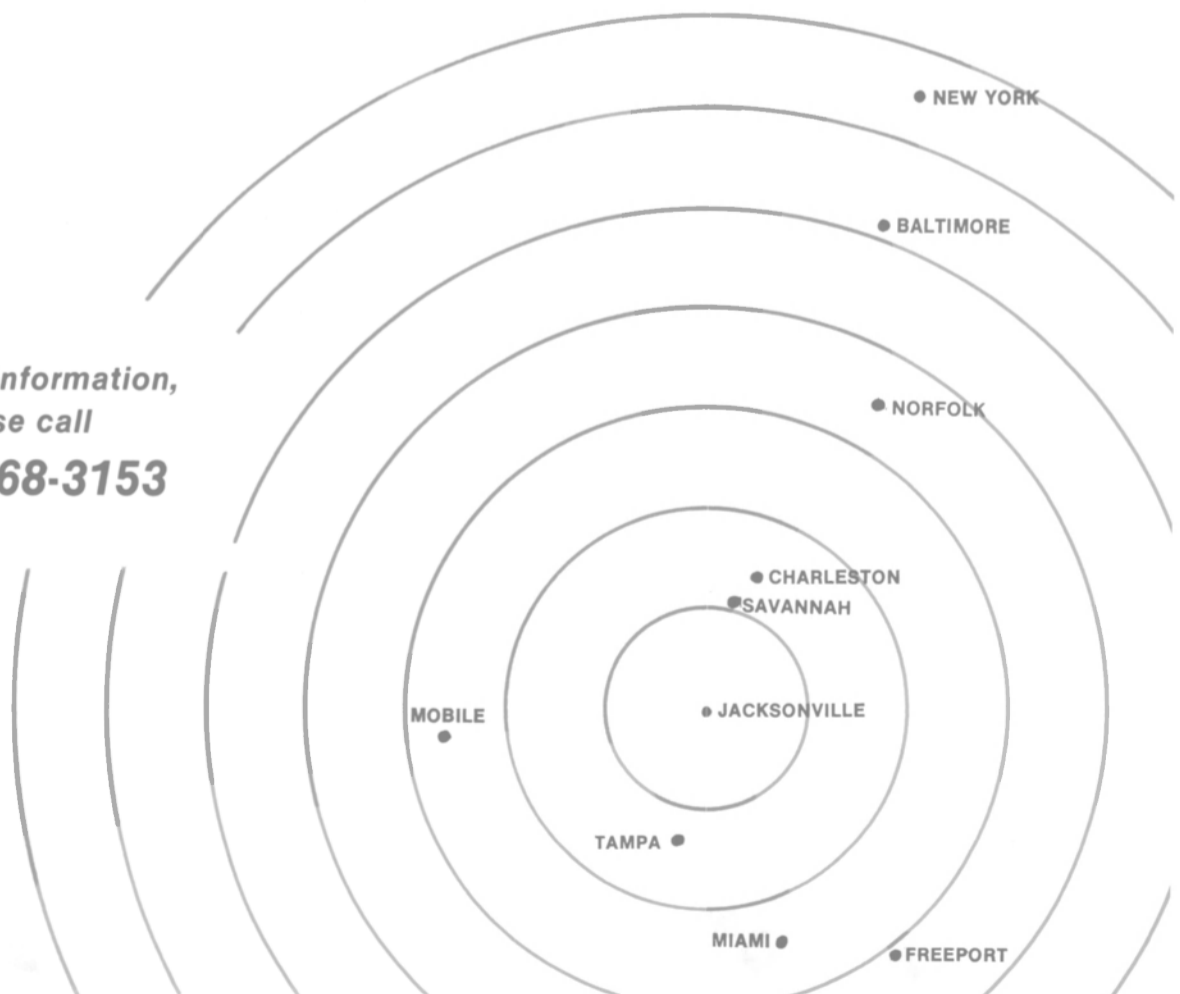
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**Brons Licensed To  
Build And Sell M.A.N.  
Four-Stroke Diesels**

M.A.N. (Maschinenfabrik Augsburg-Nuremberg) AG, West Germany, and Brons Industrie N.V., Appingedam, the Netherlands, have signed a licensing agreement covering the construction and sale of M.A.N. four-stroke engines of

type L/V 20/27 and ASL/ASV 25/30 with outputs ranging from 400 to 4,000 kw (540 to 5,440) at 1,000 rpm. At a later date, Brons is to extend its production activities to include larger four-stroke engines.

The main objectives of the agreement are to make the best possible use of the production facilities at M.A.N. and Brons

through an appropriate division of the work involved in building the engines, to increase the sales potential of those engines, to tailor maintenance performance and spare parts supply more accurately to individual requirements, and to utilize the capacity of the Brons design departments for carrying out design work on behalf of M.A.N.

**David Johnson Appointed  
A Group Manager At  
Michigan Wheel Division**

David A. Johnson has been named manager of the Propulsion Systems Group at Michigan Wheel Division, Dana Corporation. The announcement was made by H.L. VanderMey, president of the Grand Rapids, Mich., division.



David A. Johnson

Mr. Johnson comes to his new position from Michigan Wheel's Coolidge Division, where he had been assistant manager since 1972. Prior to joining Michigan, he served in the Navy and has worked with Boeing and 3 M.

The Propulsion Systems group that Mr. Johnson will manage is a joint venture between Michigan Wheel Division and Jastram Werke of Hamburg, West Germany. The group will develop and market new systems designed to increase propulsion and maneuverability of marine vessels. The Michigan/Jastram venture provides Michigan Wheel with exclusive marketing rights for the United States, Canada, and Mexico.

**Three Appointments  
Announced By Gulf  
Fleet Marine Corp.**

Gulf Fleet Marine Corporation, a Houston Natural Gas Corporation company based in New Orleans, La., recently announced three staff appointments.

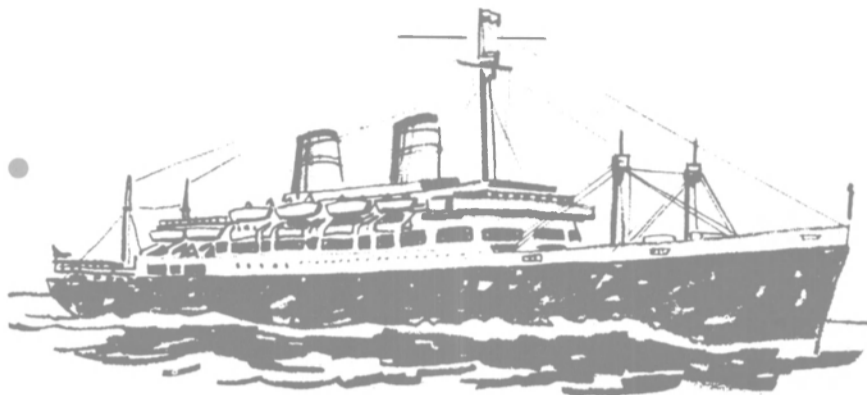
Jim Barrett has been named domestic sales manager and will have principal responsibility for marketing the services of Gulf Fleet's growing number of tugs, offshore deck barges, towboats, and supply vessels. He has eight years' experience in the marine transportation industry, and will be located in the operations office in Harvey, La.

Scott Burke has been named materials manager, and will be responsible for all purchasing and materials control for the company on a worldwide basis.

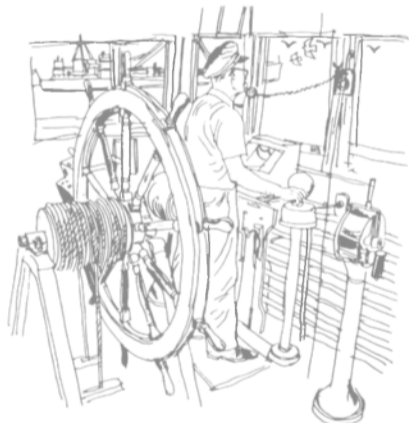
William T. (Tom) Smith has been named assistant personnel director. He has seven years of personnel experience in the offshore marine construction and transportation industries including service in both the United Kingdom and Gulf Coast.

# MARINE...

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- LUBE OIL FLUSH — C.P.P. Systems & Main Engine
- CARGO PUMPS — Rebuild



- AIR COMPRESSOR — Rebuild
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- TEST BENCH — 5000 PSI Pumping Unit
- OIL ANALYSIS — Contamination Spec. Sampling
- 15,000 PSI HYDRO TEST — Hi Pressure Hydraulics
- LEAK DOWN TEST — Complete Flow Meter & Pressure
- CYLINDER — Rebuild & Machine Services

## Omnithruster Expands Into New Office And Manufacturing Facility

Omnithruster Inc. has expanded into new facilities to accommodate the growth of its maneuvering and slow-speed positioning systems. Incorporated in the new location will be the administration, marketing, and engineering offices including designing and manufacturing of thrusters, control equipment, and solid-state ac motor starters.

"From a few basic units, Omnithruster has developed a broad line of innovative, unique thrusting systems since 1974, when the concept was first introduced to the marine industry," states **Charles M. Aker**, vice president and general manager. Systems are being utilized in fishing boats, tugs, barges, offshore supply boats, diving vessels, crewboats, geophysical survey vessels, U.S. Navy ships, tankers, etc., ranging in size from 25 to 3,000 horsepower combinations, and control systems from port-starboard thrusting to fully omnidirectional, computerized positioning systems, including radio-control options.

**Stanley A. Dashew**, chairman and founder of Omnithruster, developed the concept as a solution to the problem of slow-speed propulsion and maneuvering, when he observed a bulk carrier approaching a loading buoy off the coast of New Zealand. The vessel was caught in a strong current and attending line-handling vessels were trying unsuccessfully to maneuver at slow speed in swells. The basic system parameters were then written to solve these problems.

The new address for Omnithruster Inc. is 15418 Cornet Avenue, Santa Fe Springs, Calif. 90670; telephone (213) 802-1818, telex 194265.

## Halter Completes Supply Boat Contract With Command Marine

Halter Marine, Inc., New Orleans, recently completed a two-vessel contract for Command Marine, Inc. of Lafayette, La., with the delivery of the supply boat Moorean Command.

Now working out of Cameron, La., for Getty Oil Company, the 180-foot by 40-foot vessel carries 6,000 cubic feet of dry bulk mud in six tanks, and 52,000 gallons of liquid mud in four tanks. The vessel also has the capacity for 125,000 gallons of drill water, 13,000 gallons of potable rig water, and 350 tons of deck cargo, including helicopter fuel.

Moorean Command is powered by two fuel-efficient GM Electro-Motive Diesel 8-645E6 engines with a combined rating of 2,000 continuous bhp at 900 rpm. Her

economical operating service is demonstrated by a low fuel consumption rate of less than 90 gallons per hour, according to the operators. The stainless-steel, 80-inch-diameter wheels turn on forged steel shafts through Falk gears of 3:1 ratio.

The vessel has capacities for 80,000 gallons of fuel oil, 1,000 gallons of lube oil, and 10,000 gallons of fresh water.

Two 150-kw generators driven

by GM Detroit Diesel 6-71TI engines provide the ship's electrical power. Her pilothouse is equipped with two Decca 914 radars, two Decca VHF radios, and a Drake SSB radio. Additional electronics include a Decca Loran C, Raytheon depth sounder, and Sperry gyrocompass.

Moorean Command is ABS classed +A-1, +AMS, Full Ocean Service, and U.S. Public Health approved. She meets U.S. Coast

Guard NVC1-78 automated engine room requirements for reduced manning levels, and has been ad-measured for Panama Canal transit.

The vessel was built by Halter's Moss Point, Miss. division, one of 10 shipyards owned and operated by the company in the Southeastern United States. Halter Marine is the world's largest builder of supply boats for the offshore oil and gas industry.



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single source for  
the world's finest  
ship systems, parts,  
maintenance  
and service

**ON-SCHEDULE  
AND AT BELOW SEA-LEVEL PRICES!**

PENCO and HUDSON ENGINEERING have been meeting the quick response needs of the marine industry for more than 50 years. Our complete facilities enable us to service and supply ships of any size. We carry in stock the equipment and parts most frequently needed for instant repairs . . . and for the installation of safety, environmental, fuel efficiency and electrical systems as well as diesel engines. For the ship owner, that means efficient service, time savings and economical prices — *all at one single point of contact and responsibility.*

**"The quality  
of our work  
equals that of  
the equipment  
we supply"**

## Dreco Forms Subsidiary For Drilling Equipment— Three Executives Named

Dreco, Inc., a Houston-based oilfield equipment and service company, has announced the formation of Dreco Technologies Incorporated (DRETECH), a wholly owned Dreco company. **W.D. Frame**, general manager of U.S. Operations for Dreco, made the

announcement. It was also announced that **J. Benton Davis** is the president of the company.

Defining the company's operating scope, Mr. **Davis** said the firm will develop, engineer, manufacture, market, and service products serving specialized needs of both the drilling and producing industries. According to Mr. **Davis**, initial production from Dretech will be an eddy-current auxiliary brake for drilling rigs,

which will be offered in extensive operating ranges.

Dretech products will be manufactured and distributed worldwide from the company's Houston headquarters scheduled to be completed in early 1981. The company will construct, as its initial phase, a 30,000-square-foot manufacturing facility plus 8,500 square feet of engineering and executive offices on a site in the



J. Benton Davis

Houston area. The exact location of the facility will be announced soon.

Mr. **Davis** announced that **Marvin M. Neel** and **James D. Reynolds** have been named to key staff level position in the company. Cumulative experience of Messrs. **Davis**, **Neel** and **Reynolds** in the engineering, manufacture, and marketing of eddy-current brakes exceeds a half century.

Until completion of the Dretech manufacturing and headquarters facilities, the firm will maintain offices at Dreco headquarters at 4600 Post Oak Place in Houston.

## Crowley Maritime Names

### John S. Hollett As Director Of Marketing

**John S. Hollett** has been promoted to director of marketing, contract transportation, for Crowley Maritime Corporation's Caribbean Division, according to a recent announcement by **Robert G. Homan**, senior vice president and general manager of the division.

In his new position, Mr. **Hollett** is responsible for marketing Crowley's contract transportation services in the Caribbean, including bulk petroleum and dry cargo contract transportation. He was previously marketing manager, bulk commodities, and has also served as director of marketing for Saudi Arabia Transport Organisation Ltd., a Crowley joint venture in the Middle East.

## New Tracor Booklet On Transit Satellite Navigation System

Tracor Instruments is offering free copies of a booklet entitled, "The Transit Satellite Navigation System." This booklet describes the Transit Satellite Navigation System in nontechnical terms. The background of the Transit System is described, the operation of the Transit System is detailed and the current and future status of the Satellite Navigation System is presented. This publication will be useful for those people who want to familiarize themselves with the Transit Satellite Navigation System.

For a free copy of the new booklet, write to **John L. Hoerber**, Dept. MR, Tracor Instruments, 6500 Tracor Lane, Austin, Texas 78721.



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In Accordance with IMCO Regulations

- Inert Gas Systems, Domestic/Foreign Manufacture
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in U.S. and  
Foreign Yards.  
Fixed Price  
and Delivery.



## FUEL EFFICIENCY & FILTERING SYSTEMS

- Nissho-Iwai Blender Ace<sup>®</sup> Fuel Oil Blenders
- Oil filters/monitors
- Stork Aquamarin<sup>®</sup> Oily-water Separator/Mark II<sup>®</sup>



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- Hilbert exhaust valves, seats, pistons. New and reconditioned.



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## TURBO GENERATOR SETS

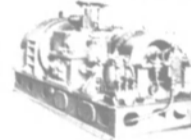
### G.E. 1500 KW A.C. TURBO GENERATORS

1  1500 KW — 450/3/1200 RPM — 0.8 P.F. — 2450 amps — 525 PSI — 850° TT — 8145 RPM — 11-stage geared 8145/1200 — type FN4 — 3 1/2" steam inlet. Unit will deliver full power at 440 lbs & 760° TT. OAL 16' 3-3/8" — OAW 6'6" — OAH 7'5 1/4" — wt. 36000 lbs. Almost equal to new. Very little use. With ABS or Lloyds.


### G.E. 600 KW GEARED TURBO GENERATORS

2  450/3/60/1200 RPM — 961 amps — type AT1 — 0.8 PF. TURBINE: FSN-FN-20 6-stage — 525 lbs/825°F — superheat 355°/371°F. GEAR: 10033/1200 — RPM 10033 — total — 6390 lbs. steam/hr. steam flow.


### G.E. 400 KW TURBO GENERATORS

3  450/3/60/1200 — 0.8 PF — 641 amps. TURBINE: 6-stage — 10059 RPM — 525 lbs/825°F — type GE 618N. Steam rate 5100 lbs/hr. — OAL 10' 10 1/2" — OAW 4' 10 1/2" — OAH 5' 5 1/4" — wt. 14,855 lbs.


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

4  400 KW (500 KVA) — 0.8 PF — 1200 RPM — 450/3/60. TURBINE: 585 lbs — 840° TT — 28 1/2" vacuum — 9018 RPM — serial 10A4462.3 & 10A4462.4. GEAR: 9018/1200 RPM. A.C. GENERATOR: 500 KVA — 400 KW — 450 volts — 641 amps — 0.8 PF — 3-phase 60-cycle — 1200 RPM — CR 40° — excitation amps 41 — excitation voltage 120. Instruction book 5442. Switchgear available.

### UNUSED WESTINGHOUSE 60 KW 120 VDC M-20-EH

5  120 VDC — 1800 RPM. TURBINE: M-20-EH — 20 lbs dry & saturated — 25" vacuum. 7283 RPM. GEAR: 7283/1800. GENERATOR: 60 KW — 120 VDC — 500 amps — SK — stab. shunt wound.

### UNUSED 500 KW DELAVAL-WESTINGHOUSE GEARED TURBO GENERATOR

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

## TURBINES & ROTORS

### BETH-SPARROWS POINT, QUINCY HULLS

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

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

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

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

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


### 8500 HP G.E. — C-3 OR VICTORY

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

### VICTORY SHIP AUXILIARY TURBO GENERATOR SET ROTORS

11 300 KW 5965 RPM JOSHUA HENDY  
Turbine — 3H-69 Gear — 52269  
Turbine — 3H-52 Gear — 52252  
Turbine — 3H-62 Gear — 52262  
ALSO WESTINGHOUSE 2A & 5A SERIES

## — FOR T-2 VESSELS —

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

### 538 KW WESTINGHOUSE T-2 AUXILIARY GENERATOR — COMPLETE

13 TURBINE: 538 KW @ 5010 RPM — 438 PSIG — 750° TT — 28 1/2" vacuum. GEAR: 5010/1200 RPM. A.C. GENERATOR: 400 KW — 450/3/60/1200 — 0.8 PF. DC EXCITER: 32.5 KW — 120 volts (variable voltage) — shunt — 4-pole — DC excitation 5 KW. ALWAYS WELL MAINTAINED BY MAJOR OIL CO.


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

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

### WESTINGHOUSE MAIN PROPULSION STEAM TURBINE WITH ROTOR

15 EX-CHEVRON VESSEL "MACGAREGILL" Shrouded — like-new condition. Will sell rotor separately. WESTINGHOUSE MAIN PROPULSION TURBINE EX "Pecos" — unshrouded — serial 2A-7733-2 type A

### UNUSED G.E. MAIN PROPULSION STATOR

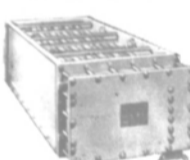
16  Type ATB-2 — serial #6978272. 2300/2370 volts — 60/62 cycles — 3-phase — 3600/3720 RPM — armature amps 1237/1315 — 4925/5400 KW — 1.0 PF. Westinghouse stator — from Ex "Pecos"

### WESTINGHOUSE 538 KW AUX. GENERATOR EXCITER ARMATURE

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

### 538 KW WESTINGHOUSE AUXILIARY TURBINE ROTORS

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

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

### G.E. 525 KW AUX. GENERATOR EXCITER ARMATURE

20  75-55 KW


### NEW STYLE AMPLIDYNE

21  5LY148A2 — type A.M. — frame 605

### AUXILIARY GENERATOR ROTORS

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


### T-2 MAIN CARGO PUMPS

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

### LATEST DESIGN 5-SPEED FORCED DRAFT FAN MOTORS

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

### T-2 SHIPS SERVICE AIR COMPRESSORS

25  Worthington — 5 1/2 x 3 1/2 x 3 1/2 — VA2 — 20 C.F.M. — 100 lbs. — 5 H.P. Motors — 440/3/60 — 1750 RPM.

### WESTINGHOUSE DRY TYPE T-2 CARGO PUMP TRANSFORMERS


26  200 KVA — single phase — 60 cycle 2300/450 volts — weight 3720 lbs. each. 4 available.

27 G.E. PYRONOL OIL COOLED TRANSFORMERS  
200 KVA — single phase — 60 cycles — 2300/450 volts — 3 available.

### MISCELLANEOUS DRY-TYPE TRANSFORMERS


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

### INGERSOLL-RAND 14,000 GPM MAIN CIRCULATOR

29  14,000 GPM @ 25' head — model 24UCM — bronze — with 125 HP 440/3/60 580 RPM motor. 26" suction — 24" discharge. Can furnish with Westinghouse type CS frame B-876C or GE type KF vertical motors.

## PUMPS

### BRONZE T-2 TANKER STRIPPING PUMPS

30  14x14x12 — 700 GPM at 100 lbs. Same pump available in steel for fuel oil transfer, etc.

### WESTINGHOUSE 200 H.P. CARGO PUMP MOTORS

31 440/3/60 1750 RPM — 40°

### MISSION TANKER T2SEA2 CIRCULATING PUMP MOTOR

32 150 HP — 440/3/60/590 RPM. Frame 6335 — type KF — 204 amps

### T-2 MAIN ROTOR

33  LARGE G.E. MAIN PROPULSION SCHENECTADY TURBINE ROTOR

Turbine serial 77418 — reconditioned with certificate. Just out of Beth shop 1970

### T-2 MISCELLANEOUS, PUMPS ETC.

34 10 HP Labour Self-Priming Bilge Pumps • Rudder 13 1/2" Rudder Stocks • Main Injection 3-Way Valve Main Condensate Pumps • Fuel Oil Service Pumps Magnablast Breaker • 1 Set New Bull Gear & Pinion for G.E. 525 K.W. Diesel Gen Model S-162 • 32", 24", 15" Rubber Expansion Joints • Mission Tanker Steering Gear Pumps

### TURBINE FIRE PUMPS — BRONZE

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

KNOW 'ROUND THE WORLD



**THE BOST**

313 E. BALTIMORE

Marine



**NEW BLACKMER FUEL OIL TRANSFER PUMP**

36



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

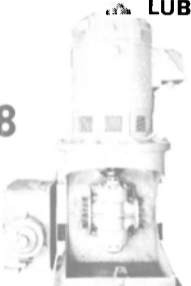
37



**UNUSED BRONZE FEED-WATER BOOSTER PUMPS**

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

38



**LUBE OIL SERVICE PUMP**

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

39



**WORTHINGTON 16"x14"x18" VERTICAL DUPLEX STRIPPING PUMP**

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

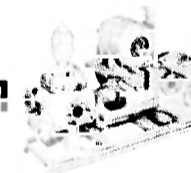
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**NEW WORTHINGTON VERTICAL SUBMERSIBLE BILGE PUMP**

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

41



**MOTOR-DRIVEN GARDNER-DENVER RECIPROCATING BILGE PUMP**

50 GPM — 150 PSI — Model ALAXE — serial #106335. 3 3/4" bore — 4" stroke — 2 1/2" suction — 2" discharge. 51" long — 21" wide — 21" high — weight 750 lbs. MOTOR: Diehl — 2.5 HP — 440/3/60 — 1750 RPM — 3.53 amps.

42



**GOULD FIRE AND BILGE PUMP**

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

43



**AURORA HEAVY DUTY BRONZE FIRE SERVICE PUMP**

Single stage — 2 1/2" suction — 2" discharge. 3000 RPM — 250 GPM. 100 lb. head. Impeller diameter 9 1/2". MOTOR: Air cooled heavy duty 25 HP Reliance T type ON-2S-2 1/2 230 VDC — 110 amps — stab. shunt.

**DIESEL GENERATOR SETS**

44

**410 KW ENTERPRISE DIESEL GENERATOR SET**

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

45



**AUTOMATIC TENSIONING 12X14 STEAM WINCH**

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

46



**16" BRASS PORTLIGHTS**

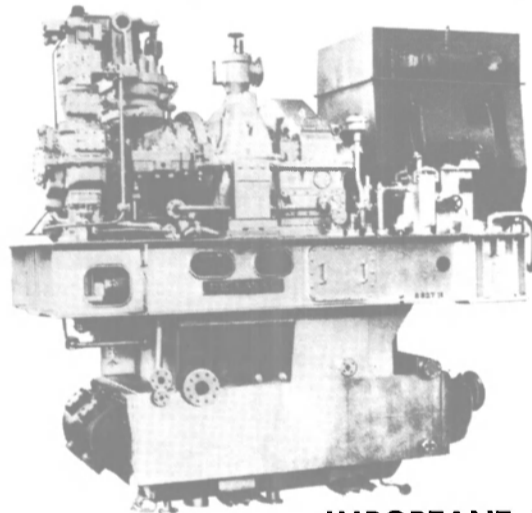
15" and 16" brass portlights. 16" portlights are 3-dog type.

**MISCELLANEOUS**

47

**IF YOU'RE GOING TO JUMBO-IZE YOU CAN ECONOMIZE WITH THESE ALLIS-CHALMERS — DELAVAL 1000 KW GEARED MARINE TURBO-GENERATORS**

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



**YOU CAN SAVE THOUSANDS OF DOLLARS**

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

**IMPORTANT INFORMATION**

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

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**OUR NEW PHONE NO. IS (301) 752-1077**

**IN METALS CO.**

**ST. • BALTIMORE, MD. 21202**

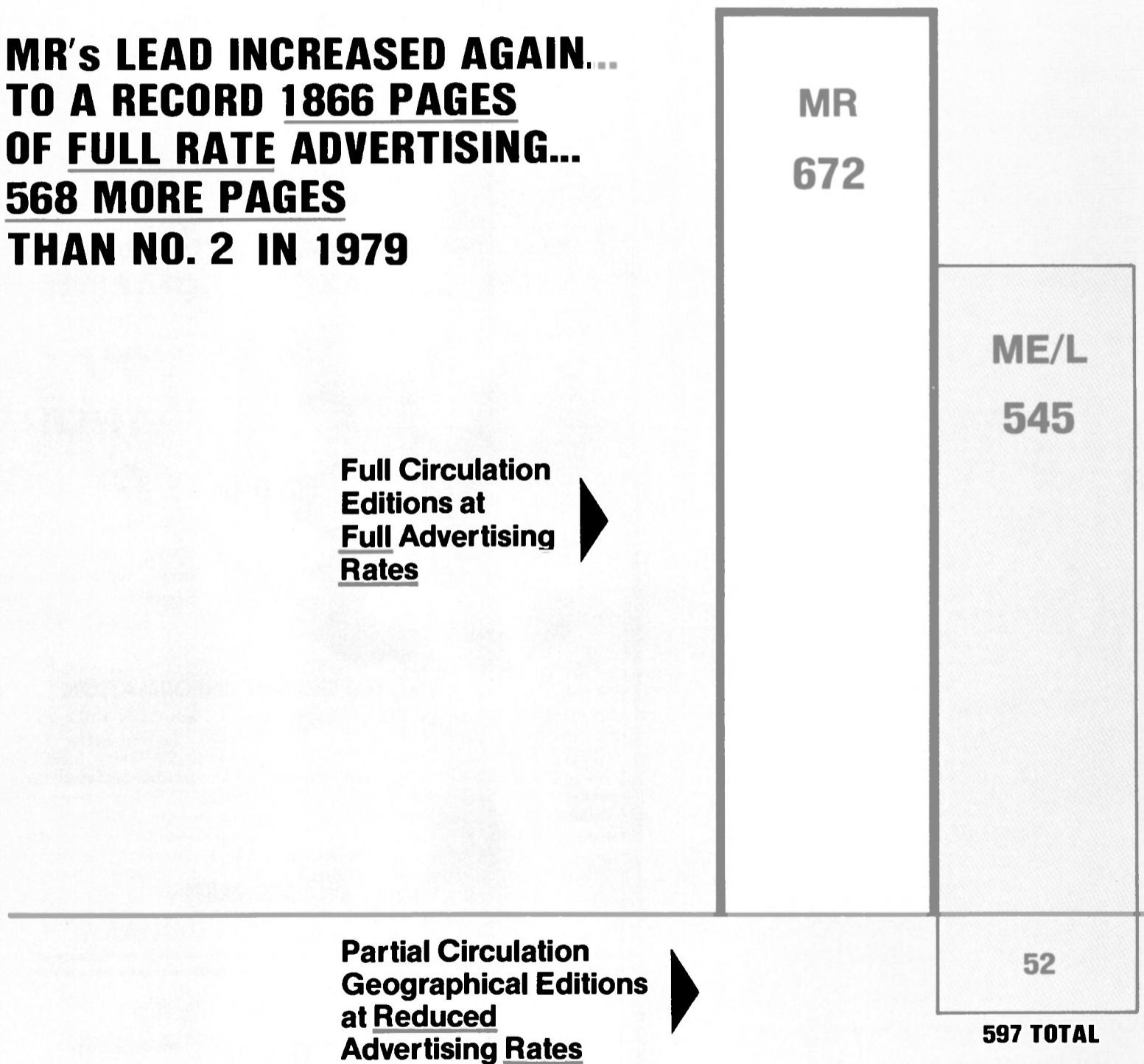
Warehouse (301) 752-1077

**PROOF...**

# **MARITIME REPORTER CARRIES MORE ADVERTISING THAN NUMBER 2**

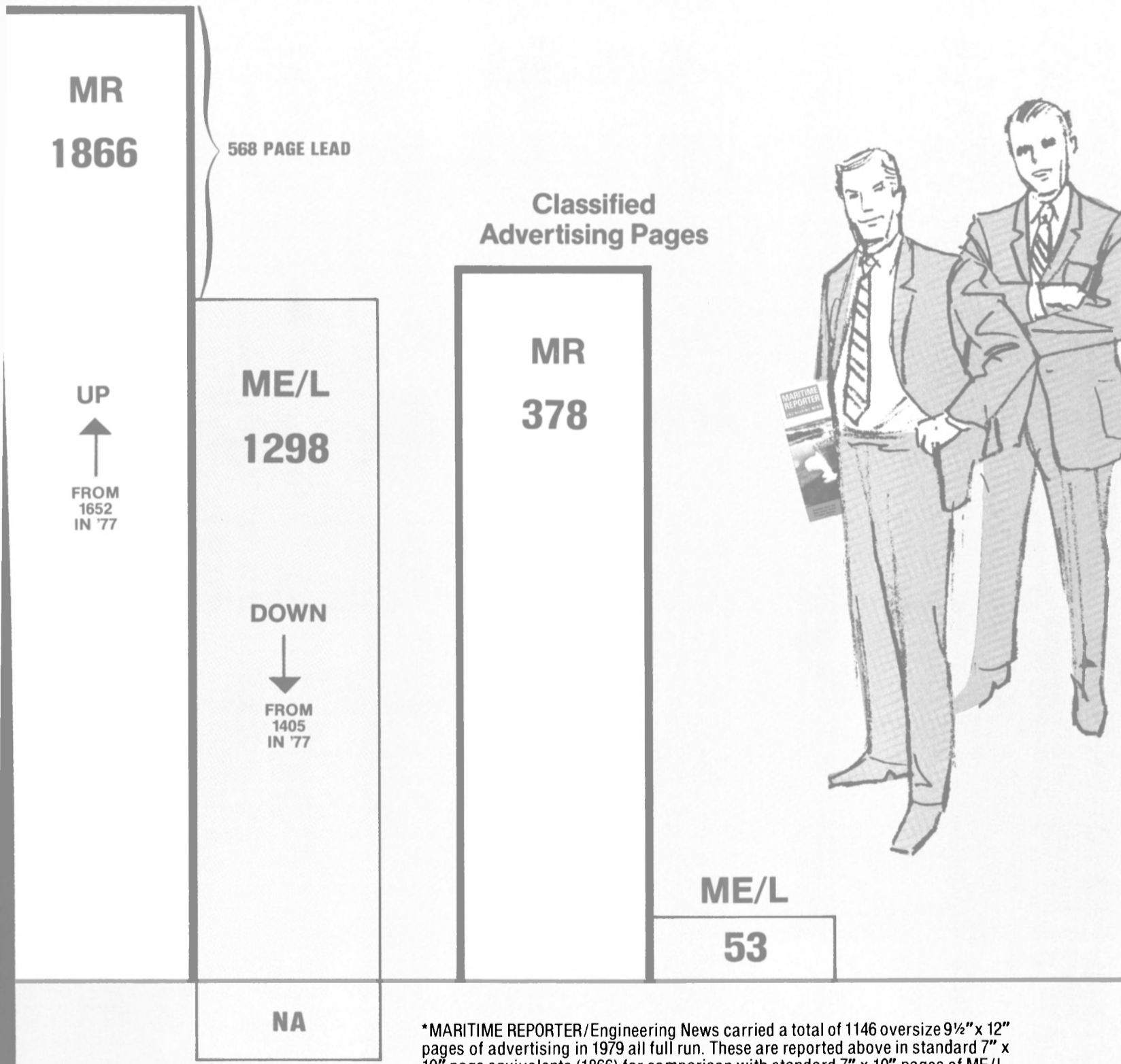
**MR's LEAD INCREASED AGAIN...  
TO A RECORD 1866 PAGES  
OF FULL RATE ADVERTISING...  
568 MORE PAGES  
THAN NO. 2 IN 1979**

No. of Advertisers



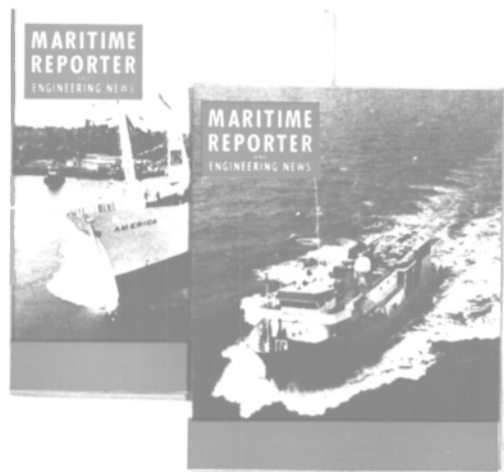
**MORE ADVERTISERS PREFER MARITIME**

**Total Pages of Advertising<sup>1</sup>**



\*MARITIME REPORTER/Engineering News carried a total of 1146 oversize 9½" x 12" pages of advertising in 1979 all full run. These are reported above in standard 7" x 10" page equivalents (1866) for comparison with standard 7" x 10" pages of ME/L. Universally accepted method for reporting oversize ad pages in leading national industrial marketing/advertising magazine.

**REPORTER... BECAUSE THOUSANDS MORE BUYERS READ IT. ►**



TWICE EACH MONTH  
THE CURRENT MAGAZINE

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# ONLY MARITIME REPORTER IS REQUESTED BY THOUSANDS MORE MARINE MEN WHO BUY

---

## COMPARE WORLDWIDE CIRCULATION TO SHORESIDE BUYERS FOR YOUR 1980 ADVERTISING

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

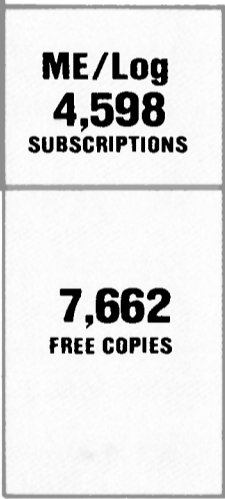
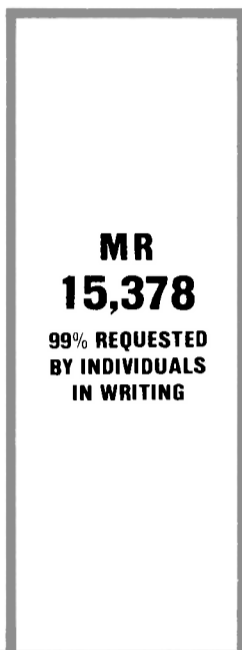
This comparison shows the total circulation of both magazines to all shoreside buyers reached throughout the entire world...in all market areas...deep draft, inland waterways, coastal and offshore oil drilling. Copies to non-buyers, manufacturers, advertising prospects, insurance agents, schools, libraries,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

## ADVERTISING GETS RESULTS.

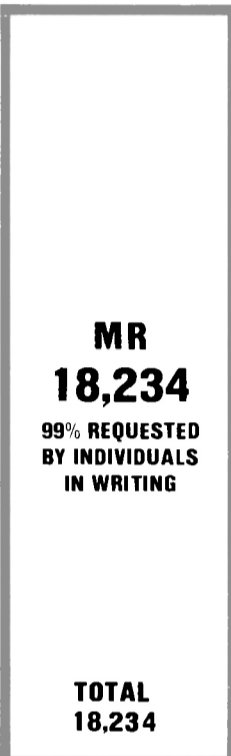
Source-Each publication's own latest available official circulation figures as of July 1980

Only buying influence readers are shown above. Total circulation is not shown because copies to non-buyers have been removed.

**U.S.A. BUYERS**



**TOTAL  
WORLDWIDE BUYERS**



**MARITIME REPORTER...  
99% REQUESTED...MOST WANTED BY  
THOUSANDS MORE MARINE BUYERS**

The quality of Maritime Reporter's circulation is unequalled by any other... 99% requested, personally in writing by each individual reader. These requests are dated, audited and **current**. The only up-to-date circulation list available to marine advertisers-maintained on a daily basis-with correct personal names, correct titles, correct addresses... the world's largest requested circulation to genuine buying influence readers.

Only Buying Power readers are compared here. Maritime Reporter has a total circulation, including non-buyers, of over 20,000 each issue...TWICE each month... mails over 40,000 copies every month.

**UNDATED FREE COPIES**

ME/Log mails thousands of **free** copies every issue, to names taken from directories of individuals who have **not asked** for the magazine. The official ME/Log circulation statement clearly shows...no dates...no time limit...no provision for renewal...or reverification for an average mailing of **over 12,000 free copies every issue**. (Over half the total circulation). How old is this free list ?



**IN THE BEST BEAD MARINE MAGAZINE**

**Check this sales building BONUS**



FALL 1980  
**MARITIME REPORTER**  
 and Engineering News  
**editorial calendar**  
 INCLUDING PREVIEW and SPECIAL ISSUES\*



Twice each month...every issue is Best Read  
 because it's the only current marine magazine

<p><b>September 1st Issue *</b>  <b>FULL PREVIEW FEATURE ARTICLES</b></p> <ul style="list-style-type: none"> <li>● <b>(SMM '80)</b>            "Ship. Machinery, Marine Technology International" Exhibition and Congress Hamburg, Germany - September 23-27</li> <li>● and <b>A.S.N.E. SHIP SYSTEMS SYMPOSIUM</b>            (Am. Society of Naval Engineers) Cherry Hill, New Jersey - October 2-3            Advertising Closing Date August 12</li> </ul>	<p><b>September 15th Issue *</b></p> <ul style="list-style-type: none"> <li>● <b>MARINE TECHNOLOGY '80</b>            Conference and Exhibition Washington D.C. October 6-8            and as always            BRAND-NEW, IMPORTANT MARINE INFORMATION...FIRST            (weeks ahead of the slower monthlies)            TWICE EACH MONTH...BEST READ BECAUSE IT'S CURRENT            Advertising Closing Date August 26</li> </ul>
<p><b>October 1st Issue *</b>  <b>FULL PREVIEW FEATURE ARTICLE</b></p> <ul style="list-style-type: none"> <li>● <b>MARICHEM '80</b> London - October 21-23            and as always            BRAND-NEW, IMPORTANT MARINE INFORMATION...FIRST            (weeks ahead of the slower monthlies)            TWICE EACH MONTH...BEST READ BECAUSE IT'S CURRENT            Advertising Closing Date September 11</li> </ul>	<p><b>October 15th Issue</b></p> <ul style="list-style-type: none"> <li>● <b>SPECIAL DIESEL POWER REVIEW</b>            and as always            BRAND-NEW, IMPORTANT MARINE INFORMATION...FIRST            (weeks ahead of the slower monthlies)            TWICE EACH MONTH...BEST READ BECAUSE IT'S CURRENT            Advertising Closing Date September 25</li> </ul>
<p><b>November 1st Issue *</b>  <b>FULL PREVIEW FEATURE ARTICLES</b></p> <ul style="list-style-type: none"> <li>● <b>SNAME ANNUAL MEETING PREVIEW</b>            (Society of Naval Architects and Marine Engineers)            New York City - November 13-15            and</li> <li>● <b>EUROPORT AMSTERDAM</b> - November 18-22            Advertising Closing Date October 10</li> </ul>	<p><b>November 15th Issue</b></p> <p><b>BRAND-NEW, IMPORTANT MARINE INFORMATION...FIRST</b>  <b>(weeks ahead of the slower monthlies)</b>  <b>TWICE EACH MONTH...BEST READ BECAUSE IT'S CURRENT</b></p> <p>Advertising Closing Date October 24</p>
<p><b>December 1st Issue</b></p> <ul style="list-style-type: none"> <li>● <b>1st ANNUAL OUTSTANDING VESSELS REVIEW</b>            and as always            BRAND-NEW, IMPORTANT MARINE INFORMATION...FIRST            (weeks ahead of the slower monthlies)            TWICE EACH MONTH...BEST READ BECAUSE IT'S CURRENT            Advertising Closing Date November 11</li> </ul>	<p><b>December 15th Issue</b></p> <ul style="list-style-type: none"> <li>● <b>SNAME ANNUAL MEETING POST CONFERENCE REPORT</b>            and as always            BRAND-NEW, IMPORTANT MARINE INFORMATION...FIRST            (weeks ahead of the slower monthlies)            TWICE EACH MONTH...BEST READ BECAUSE IT'S CURRENT            Advertising Closing Date November 26</li> </ul>

**The biggest and best circulation to buyers...produces bigger and better results for all marine advertisers**

\* MR's PREVIEW ISSUES...will contain complete pre-meeting programs - exhibitor lists - authors - papers, etc...will be delivered to MARITIME REPORTER's entire circulation of over 20,000 of the most influential marine management and design people...before each meeting...PLUS...PREVIEW ISSUES will "be there"...with extra distribution at each meeting. (Some other publications may only list these meetings for magazine distribution - without editorial coverage.)

**MARITIME  
 REPORTER**  
 AND  
 ENGINEERING NEWS

107 East 31st Street New York, N.Y. 10016 • 212/689-3266

**EDO Awarded \$8-Million Navy Contract For Sonar Systems**

EDO Corporation, College Point, N.Y., is being awarded an \$8,000,000 negotiated fixed-price incentive contract for AN/SQR-18A sonar systems and related equipment to be installed on FF-1052 class frigates equipped with variable-depth sonars. The Naval Sea Systems Command is the contracting activity. (N00024-80-C-6240)

**Coles And Fitzner Appointed Vice Presidents At Dravo Engineers**

Dudley Coles has been appointed vice president and manager of marketing, and R.E. Fitzner, vice president and assistant general manager for Dravo Engineers and Constructors' Civil, Mining and Marine Division.



Dudley Coles

R.E. Fitzner

Mr. Coles, who joined Dravo in 1946, will be responsible for all domestic and international marketing functions. Most recently, he served as vice president of sales for Dravo Mechling.

Formerly vice president of engineering and marketing, Mr. Fitzner's new assignment includes managing construction and engineering projects as well as contract mining operations. He has held various engineering and supervisory positions with Dravo since 1954.

Dravo Engineers and Constructors, a unit of Dravo Corporation, is headquartered in Pittsburgh with domestic offices in Dallas, Denver, Omaha, and New York City, and regional overseas offices in Europe, South America, and Southeast Asia.



"I hate it out here! That darn light attracts everything!"

**Crowley Relocates New York Office To World Trade Center**

Crowley Maritime Corporation's Caribbean Division has relocated its New York marketing office to expanded quarters at One World Trade Center, Suite 4903, New York, N.Y. 10048. Telephone numbers at the new location are (212) 466-1922 and (800) 221-5100.

The World Trade Center office is headquarters for the Northeast Region of Crowley's Caribbean Division encompassing eastern and central New York, eastern Pennsylvania and Maryland, New Jersey, New Hampshire, Connecticut, Vermont, Rhode Island,

Massachusetts, Maine, Delaware, and Washington, D.C. Dennis Derby is regional marketing manager in the Northeast, with Phil Janvrin and Don Quillen district marketing managers.

Crowley's Caribbean operations include Trailer Marine Transport Corporation, which provides RO/RO service between the United States and Puerto Rico, the Dominican Republic, the Virgin Islands and the Leeward and Windward Islands; and Gulf Caribbean Marine Lines providing pass/pass warehouse barge service between the U.S. Gulf and the Caribbean. Trailer Marine Transport also serves as general agent in the United States and Puerto Rico for Naviera Central, a Venezuelan-flag RO/RO carrier between Florida and Venezuela.

**THE WORLD LEADER IN SHIP-TO-SHIP  
CRODE OIL TRANSFERS  
announces a  
FLOATING STORAGE FACILITY**



**Cayman Energy Limited**

The largest "Ship-to-Ship" operators in the Caribbean with safe transfers in the Lee of Cayman Brac and Little Cayman Islands, B.W.I. now offer the Petroleum Industry the means for continued transportation savings thru a floating terminal to be managed by "Floating Terminals Ltd."

**FIXED FEE - NO STORAGE TIME LIMIT**

TWO ULCC'S PRESENTLY ON TEMPORARY STATION.  
CONTRACTS MAY NOW BE NEGOTIATED FOR PERMANENT  
TWO-YEAR TERMS TO COMMENCE WITHIN 30 DAYS OF SIGNING.

*Weather conditions ideal, equipment and facilities the finest together with experienced and reliable personnel. Transfer area depth is 22,000 feet. Safe anchorage off both islands.*

*Every emphasis is placed on extremely quick vessel turnaround, from ULCC's, VLCC's, etc. to the shuttle vessels. On-station equipment exists for five simultaneous transfer operations.*

Agents for CAYMAN ENERGY, Ltd. and FLOATING TERMINALS Ltd.

**TRANSPORTATION CONCEPTS & TECHNIQUES, INC.**

1020 West Main Street, Charlottesville, VA.  
Telephone 804-979-8101 Telex 822423

## MarAd Approves Title XI On \$3.4-Million Tug/Supply Vessel

The Maritime Administration has approved in principle an application from Marsea Marine Six, Inc., New Orleans, for a Title XI guarantee to aid in financing the construction of a 2,560-bhp tug/supply vessel to be used in off-

shore oil exploration in the U.S. Gulf of Mexico.

Halter Marine, Inc., Lockport, La., is the builder. The vessel will have an overall length of 180 feet, a molded beam of 40 feet, and a deadweight capacity of 968 long tons.

The Title XI guarantee will cover \$2,966,000 or 87½ percent of the estimated cost of \$3,390,231.

## Jeffboat-Built Towboat 'Volunteer State' Christened



Towboat *Volunteer State*, shown here in front of Gateway Arch in St. Louis, was delivered recently by Jeffboat shipyard to owner American Financial Corporation. Alco-powered boat will be operated by H & S Transportation Company and River Lines, Inc. on the Lower Mississippi.

Accompanied by the blare of towboat horns, Mrs. Peggy Armstrong shattered a champagne bottle to christen the new motor vessel *Volunteer State* recently under the Gateway Arch in St. Louis.

The twin-screw, 5,830-bhp towboat has now entered service moving commodities on the Lower Mississippi River. Built by Jeffboat, Incorporated, in Jeffersonville, Ind., the vessel is owned by American Financial Corporation and operated by H & S Transportation Company, Inc., and River Lines, Inc.

The *Volunteer State* is powered by two Alco Power Inc. 16-cylinder diesel engines, Model 251 F, each rated at 2,915 bhp. These



Capstan got a champagne shower as Mrs. Peggy Armstrong christened new towboat. She is the wife of Jimmy Armstrong, board chairman of vessel's operators.

drive five-bladed, stainless-steel propellers through two Falk Model 3040 reverse/reduction gears with a ratio of 4.192:1. Two steering rudders and four flanking rudders are operated by independent hydraulic rams.

Two 100-kw generators are powered by GM Detroit Diesel engines. Hot water and heating are provided by a Kewanee boiler; the Dunham-Bush air-conditioning system has a capacity of 20 tons. Two Westinghouse 5320B air compressors are each rated 23.8 cfm at 250 psi.

Included in the deck machinery are two Schoellhorn-Albrecht type 21063, 10-hp capstans, and four Beebe model 62, 5-hp winches. The fire pump was supplied by Ingersoll-Rand.

Among the electronics are a Sperry MXIG-AX radar, Raytheon DE 760 digital depth indicator, and Intech VHF and SSB radios. National Marine Service provided a Series 70 Tugmonitor system, Carlisle & Finch two xenon searchlights, and a Kahlenberg Model Q-4 air horn.

## Nothing Blinds A Line Like A STACEY



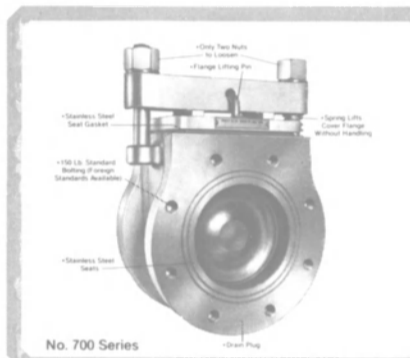
- All Wetted Parts Available in Stainless Steel
- Nothing is more reliable or more durable.
- Nothing is easier or more economical to install, operate or maintain.

Unlike other blinds, Stacey's do not have to be removed from piping to be serviced!

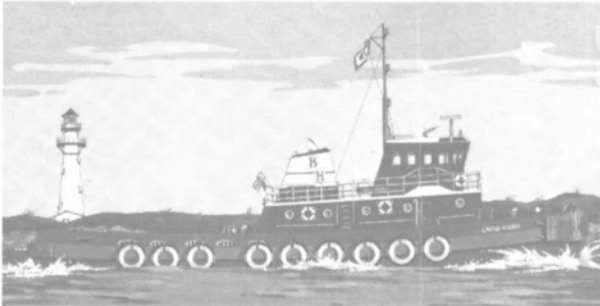
- Nothing is built with so many exclusive features, or in so many standard sizes or can be fabricated to your specification with so many options of sizes, materials and equipment

Standard sizes: 1" through 24"  
Butt Weld or Flanged ends available for 600 or 700 series blinds.

Whatever your line blinding needs, Stacey can provide the device to fit them... fast and at a very competitive price.



**STACEY VALVE CO., INC.**  
P.O. Box 377, 29 Meserole Avenue, Brooklyn, NY 11222  
(212) 383-2550 • Telex: 126551 STACEYVALV NYK



## Three new tugs join the Bay-Houston family.

Three new additions to the Bay-Houston fleet will be the Barbara H. Neuhaus, Laura Haden and Mark K. All attest to the dedication of Bay-Houston to provide the best

towing service available on the Gulf Coast.

**B H BAY-HOUSTON TOWING CO.**  
HARBOR AND COASTWISE TOWING  
Houston • Galveston • Corpus Christi • Freeport • Texas City



# Ship owners trust Texaco lubricants and services to help keep their vessels running efficiently.



*They trust Texaco* research to produce products that meet the severe operational demands of today. Products such as:

- DORO AR 30—alkaline reserve crankcase lubricant.
- TARO Special—our specially formulated cylinder lubricant.
- TARO XD and TARO DP—the multipurpose products for lubrication of medium speed diesel engines.
- REGAL R&O SERIES—turbine lubricants which meet

the demanding requirements of today's equipment.

*They trust Texaco's* rapid oil analysis program which provides an analysis-and-detection service that can spot potential problems early and help reduce costly unscheduled downtime.

It all adds up to one thing. Marine engineering experience. Ship owners and engineers know Texaco has that experience and know we are working harder to keep their trust.

**TEXACO**

WORLD WIDE



MARINE FUELS AND  
LUBRICANTS

For information on our full line of marine lubricants, direct your inquiry to:

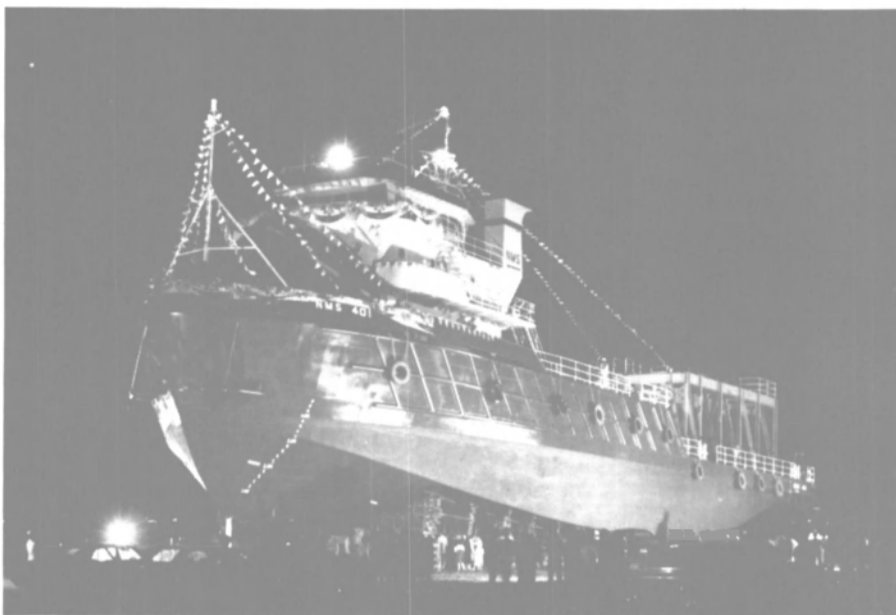
**Texaco Inc.**

International Marine Sales Dept.  
2000 Westchester Ave., White Plains, New York 10650

**Texaco Ltd.**

International Marine Sales  
1 Knightsbridge Green, London SW1X 7QJ

## Promet Launches First Of Kind Vessel For National Marine



Unusual night launching of National Marine Service maintenance/inspection vessel NMS 401 took place recently at the Singapore yard of Promet Private Limited.

Promet Private Limited shipyard in Singapore recently launched a maintenance/inspection vessel named NMS 401, reputed to be the first of its kind for use in the Arabian Gulf. The vessel's sponsor was Mrs. Pete Domaschk, wife of the general

manager of National Marine Service of St. Louis, owner of the vessel.

The 180-foot ship has a beam of 50 feet and depth of 16 feet, and free-running speed of about 10 knots. It is equipped with foam, fire, and oil dispersant systems. Fully loaded its draft will be 13 feet.

The unique vessel was designed by Pete Guild, naval architecture consultant for National Marine, to perform special offshore support functions at an oil field in the Arabian Gulf. It will act as a diving support vessel with divers stationed aboard at all times to install, service, and remove items or perform other underwater work.

It will also be used for anchor handling. Due to the hard coral bottom of the Arabian Gulf, special 25-ton, rectangular block anchors are used throughout the area instead of conventional anchors for permanent vessel mooring and for positioning drilling rigs and jackets on location.

The vessel is fitted with a fixed gantry and hydraulic A frame on her port side for setting, retriev-

ing, and storing the anchors, chain, and buoys used in the field.

As a maintenance and inspection vessel, the NMS 401 will be required to maintain the oil field's vast system of underwater pipelines, wellheads, jackets, and mooring buoys. To perform the maintenance functions, she is equipped with a 20-ton hydraulic crane to handle underwater pile driving, and raising/lowering equipment, plus her 40-ton A-frame lifting gear.

She has a large unobstructed deck area on the starboard side for fabrication, and launching and retrieving divers, diving bells, etc. The vessel is equipped with a four-point mooring system, hydraulically operated, for station-keeping during these duties. She is also provided with a 440-hp bow thruster and stern thruster to assist the two main diesel engines in positioning. Other duties will include survey and seismic work, firefighting, and rescue operations.

The NMS 401 has been classed by the American Bureau of Shipping.

## Levingston Launches Jackup Rig For Argentine Owners



Jackup drill rig Rio Colorado I was launched recently at Orange, Texas, yard of Levingston Shipbuilding. Two similar rigs are on order at the yard.

Levingston Shipbuilding Company recently christened the jackup drill rig Rio Colorado I and launched the \$30-million vessel into the Sabine River at its Orange, Texas, shipyard. The rig will be owned and operated by Rio Colorado S.A., a joint venture between Bidas S.A.P.I.C. and Saipem S.p.A.

The Rio Colorado I is a Levingston Class 111-C, self-elevating drilling platform capable of operating in water depths of up to 300 feet, and of drilling to 25,000 feet. Its triangular hull is 200 feet by 186 feet by 23 feet deep, supported by three square-truss legs, each more than 400 feet in length.

Sponsoring the Rio Colorado I was Sra. Maria de las Mercedes Alen de Bulgheroni, wife of the president and founder of Bidas, Alejandro Angel Bulgheroni Botto. The christening and launching ceremony was held in the presence of several hundred invited guests.

The Rio Colorado I will be completed in late September and towed

approximately 9,000 miles to Tierra del Fuego at the southernmost extremity of Argentina, where it will begin drilling under contract to Total Austral of France.

Bidas S.A.P.I.C. is a privately owned Argentine company headquartered in Buenos Aires and with extensive interests in oil and gas exploration both on and offshore. In addition to its oil and gas interests, Bidas is also active in the paper, banking, fishing, and communications industries in Argentina.

Levingston Shipbuilding Company is internationally known as a pioneer in the construction of offshore drilling rigs. Since World War II, Levingston has built 164 vessels for the offshore industry, ranging from dynamically positioned drillships, semisubmersibles, and jackups to posted drilling barges, tenders, and other large offshore vessels. Levingston currently has contracts for the construction of three Class 111-C jackups and in addition is building a series of five 36,000-dwt bulk carriers.

## Unique Utility Vessel Delivered By HUDSHIP

Hudson Shipbuilders, Inc. (HUDSHIP) of Pascagoula, Miss., recently delivered its fifth vessel for 1980, the 120-foot utility vessel Wanda Louise, built for Gerald P. Hebert Enterprises, Inc. of Lafayette, La.

Mr. Hebert, a manufacturer of oilfield "down hole" equipment, gave special instructions to Har Keswani & Associates of New Orleans for the design of his second vessel. Designed especially for the production department of Transco Exploration Company, the Wanda Louise will service production platforms up to 125 miles offshore.

According to Richard Block, operations manager for Hebert Enterprises and publisher of marine education textbooks, the Wanda Louise is a unique vessel for her size. In addition to having an American Bureau of Shipping loadline and being built to U.S. Coast Guard Subchapter I Requirements, her deck cargo ca-

capacity is more than 130 tons and she has freezer/cooler equipment to handle perishable items for the platforms and standby vessels.

The aft steering station is designed with more than 225 degrees of visibility to facilitate unloading while tied up and operating "under the basket," and her reinforced transom and rub rails prevent the type of damage normally encountered by utility vessels.

Liquid cargo of the Wanda Louise includes fuel, industrial water, and triethylene glycol. Heavy-duty, 3-inch pumps are used to transfer these liquids.

She is required to off-load cargo in any type of weather, and is equipped with anchor chain and windlass rather than a cable and winch.

Wanda Louise is powered by twin GM Detroit Diesel Allison 16V92 NA engines supplied by George Engine Company, and Twin Disc model 527 reduction



Utility vessel Wanda Louise, built by Hudson Shipbuilders for Gerald P. Hebert Enterprises, is powered by twin General Motors 16V92 NA diesel engines.

#### 'WANDA LOUISE' SUPPLIERS

Main engines (2), **GM Detroit Diesel** 16V92 NA.  
Reduction gearing, **Twin Disc** 527 5:1.  
Engine controls, **Mathers**.  
Generators (2), **Delco/GM** 50-kw.  
Control panel, **National Electric Coil**.  
Keel coolers, **Channel Iron**.  
Stuffing boxes, shaft and stern bearings, **Johnson**.  
Steering system & autopilot, **Sperry**.  
Shaft, **Aquamet** 5½-inch.  
Sanitary system, **Red Fox**.  
Air compressors (2), **Quincy**.  
Pumps, **Barnes; Aurora**.  
Anchor windlass, **HBL**.  
Radars (2), **Furuno FR-240 and FR-701**.  
SSB Radiotelephone, **Marco/Konel** 1022.  
Depth recorder, **Impulse** 3601.  
VHF Radiotelephone, **SSE Sea Command**.  
Loran C, **Micrologic ML-220**.  
Engine monitoring system, **Marine Electric**.  
Air horn, **Kahlenberg**.  
Searchlights (2), **Carlisle & Finch**.  
Navigation & running lights, **Perko**.  
Fire monitor, **Akron**.  
Pump for above, **Aurora**.

gears. On sea trials the vessel exceeded 12 knots. Auxiliary power is provided by two 50-kw Delco generators powered by GM Detroit Diesel 4-71 engines. Engines are monitored by a 21-point Marine Electric system.

The pilothouse is designed for maximum visibility. Furnished and installed by Rhodes Electronic Service of Houma, La., the vessel's electronics include Furuno FR-240 and FR-701 radars, Sea Command VHF radiotelephone by SSE, Impulse depth recorder, Apelco Trident loudhailer, Micrologic ML-220 Loran C, Marco-Konel 1022 SSB radio, Nav-Lite panel by Continental Electric, internal telephone and public address system, and a Sperry steering and autopilot system.

Wanda Louise will be operating out of Cameron, La.

HUDSHIP, one of the fastest growing yards on the Mississippi Gulf Coast, presently has under construction two utility vessels—one 112 feet and one 120 feet—for Gray MacKenzie Ltd. of Bahrain, one 112-foot utility boat for Lamnalco Ltd. of Kuwait, one 85-foot pushboat for Energy Transportation Services of New Orleans, and one 70-foot pushboat for Spanier Towing, also of New Orleans.

#### NL Rig Equipment Offers Shaffer Drilling Choke System Brochure

A four-page, full-color brochure describing the Shaffer Drilling Choke System is now available from NL Rig Equipment.

The brochure features illustrations and specifications of the hydraulically operated choke valves,

transducers for drill pipe and annulus pressures, and floor-mounted control console which compose the system. The Shaffer Drilling Choke System is compatible with any rig design—the control console operates with rig air or optional electric pump.

The conveniently arranged control console panel allows operation of one choke, or two chokes si-

multaneously, and allows monitoring of well-killing data from any desired remote location. Fluids can be circulated from the well bore while holding any desired back pressure within the pressure rating of the chokes.

The rugged, dependable and easy to service chokes are available for working pressures of 5,000, 10,000 and 15,000 psi. They

will operate at temperatures up to 300°F and are suitable for H.S service. The system is designed to operate the chokes quickly and reliably in response to changing conditions in the well bore.

For free copies of the new brochure, write to **Dave Wilkinson**, Dept. MR, NL Rig Equipment, P.O. Box 1473, Houston, Texas 77001.



# BUILT TO LAST.

Levingston people. 2,500 men and women with great skill and motivation. Building quality vessels like the new "Pride of Texas", pictured here.

It's aptly named. Because we take "pride" in the ships we build. Only the can-do spirit of management, staff and work force make a project successful.

But this one is special. The first in a new generation of U.S.-



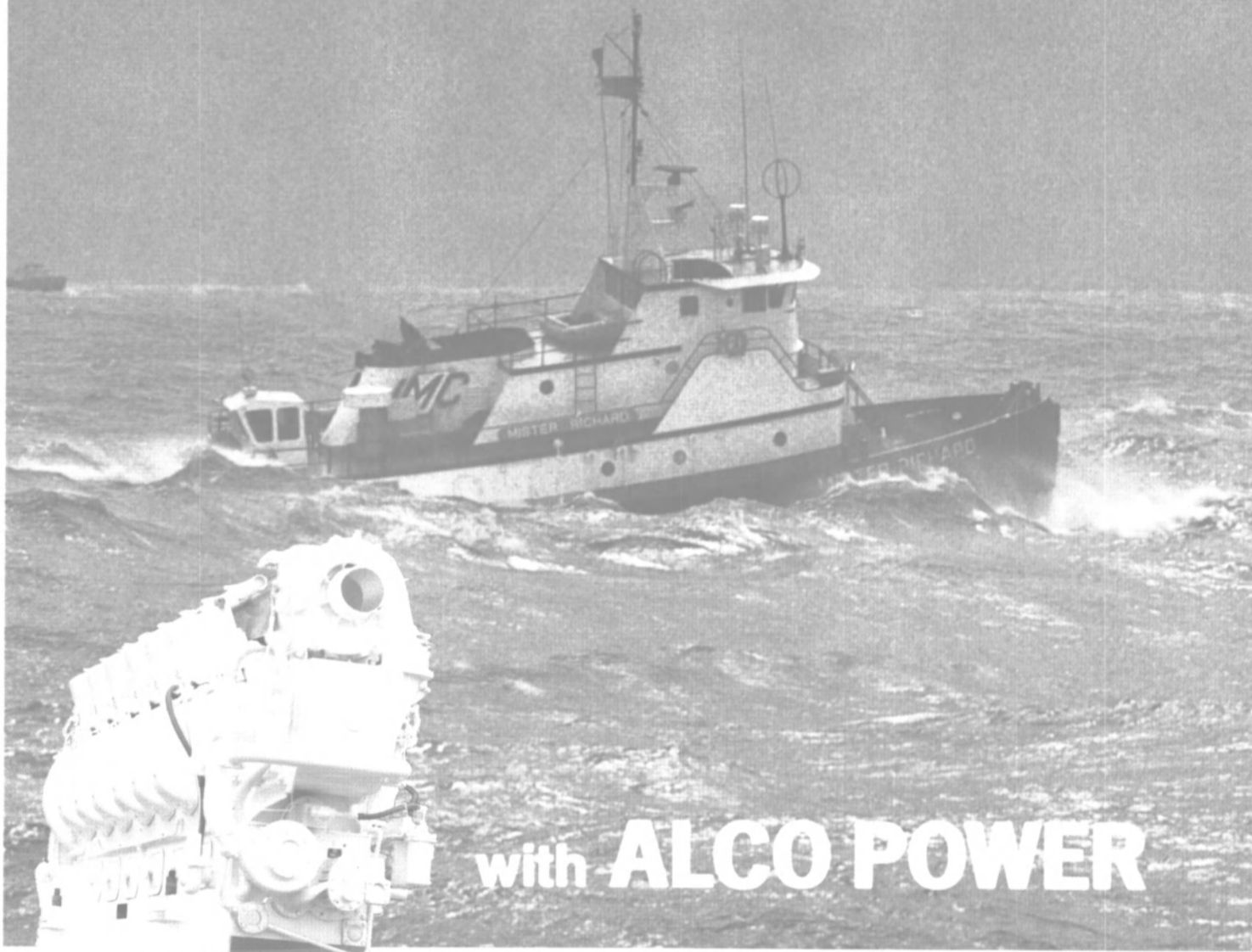
flag dry bulk carriers. They're 612 feet long, 93 feet wide and have a draft of 36 feet. Powered by fuel efficient diesel engines, at a speed of 16 knots, they'll each carry about 36,000 tons of cargo vital to U.S. trade.

Whether we're fitting steel plate or designing a piping system, you can count on Levingston for a quality product. One that's built to last.

For more information, contact Joe Barrios. P.O. Box 968, Orange, TX 77630, 713/883-3521.

 **Levingston**

**Help me make it  
through the day . . . or night**



When you need dependable, economical power, the ALCO POWER BOSS diesel engine is the answer. ALCO power will certainly help you make it through the day or night.

From inland waterways to the oceans of the world, ALCO POWER BOSS diesels can be found aboard workboats, dredges, fishing boats, ocean going tugs, icebreakers, Navy and Coast Guard ships—all requiring dependable power.

The ALCO diesel engine installs easily as a single package. ALCO POWER BOSS units are smaller and lighter, making it possible to increase fuel storage and obtain greater cruising ranges. With normal maintenance, ALCO diesel engines have performed for over 37,000 hours without ma-

ior overhaul. Choose from 720 to 1200 RPM, 6 to 18 cylinders, 890 to 4000 continuous BHP.

Save money and get dependability as a bonus—we can help you make it—

Write **Alco Power Inc.**

100 Orchard Street, Auburn, New York 13021 U.S.A.  
or phone 315/253-3241 Telex: 937-300

**ALCO<sup>®</sup>**  
**Diesel Engines**

**James Oliver Promoted  
To Executive VP At  
Levingston Shipbuilding**



James B. Oliver

Ed Paden, president of Levingston Shipbuilding Company, announced that **James B. Oliver** is promoted from senior vice president to executive vice president, effective immediately. In addition to his finance duties, he will be responsible for monitoring all company operations and activities, at both Levingston Shipbuilding Company and its subsidiaries, Gulfport Shipbuilding Company, Industrial Products, plus Levingston-Armadillo, Inc.

Prior to coming with Levingston in 1956, Mr. Oliver worked four years for Price Waterhouse & Co. At Levingston he served in the following positions: chief accountant, controller, assistant secretary and treasurer, director, vice president-finance, secretary and treasurer, vice president-administration, secretary and treasurer, and senior vice president, secretary and treasurer.

**Standard Communications  
Has New Desalinator—  
Literature Available**

A new self-contained, extremely compact, reverse osmosis desalinator, designed to produce potable water 24 hours a day at sea or on land, is now available from Standard Communications, Los Angeles. Named System 5, it weighs only 150 pounds while taking up just five cubic feet of space. It is available in 100, 200, and 300-gallons-per-day models.

System 5 is housed in a corrosion-resistant fiberglass enclosure, and incorporates new chemical-resistant membranes that have a greater ability to reject salt. Only three connections are required before the user is able to make potable water.

The new unit complements the HRO Division of Standard Communications' full line of reverse osmosis desalinators, which now include 19 different basic models. Prices start at \$2,989.

For free literature and additional information on the System 5, write to **Don Ebeling**, Standard Communications Corporation, Dept. MR, P.O. Box 92151, Los Angeles, Calif. 90009.

**Latest Lloyd's Register  
Published In New  
Three-Volume Format**

The 1980-81 edition of the famous reference work, *Lloyd's Register of Ships*, has just been published in a completely new three-volume format. Because comprehensive details of more than 70,000 ships are included,

the former two-volume format had become unwieldy.

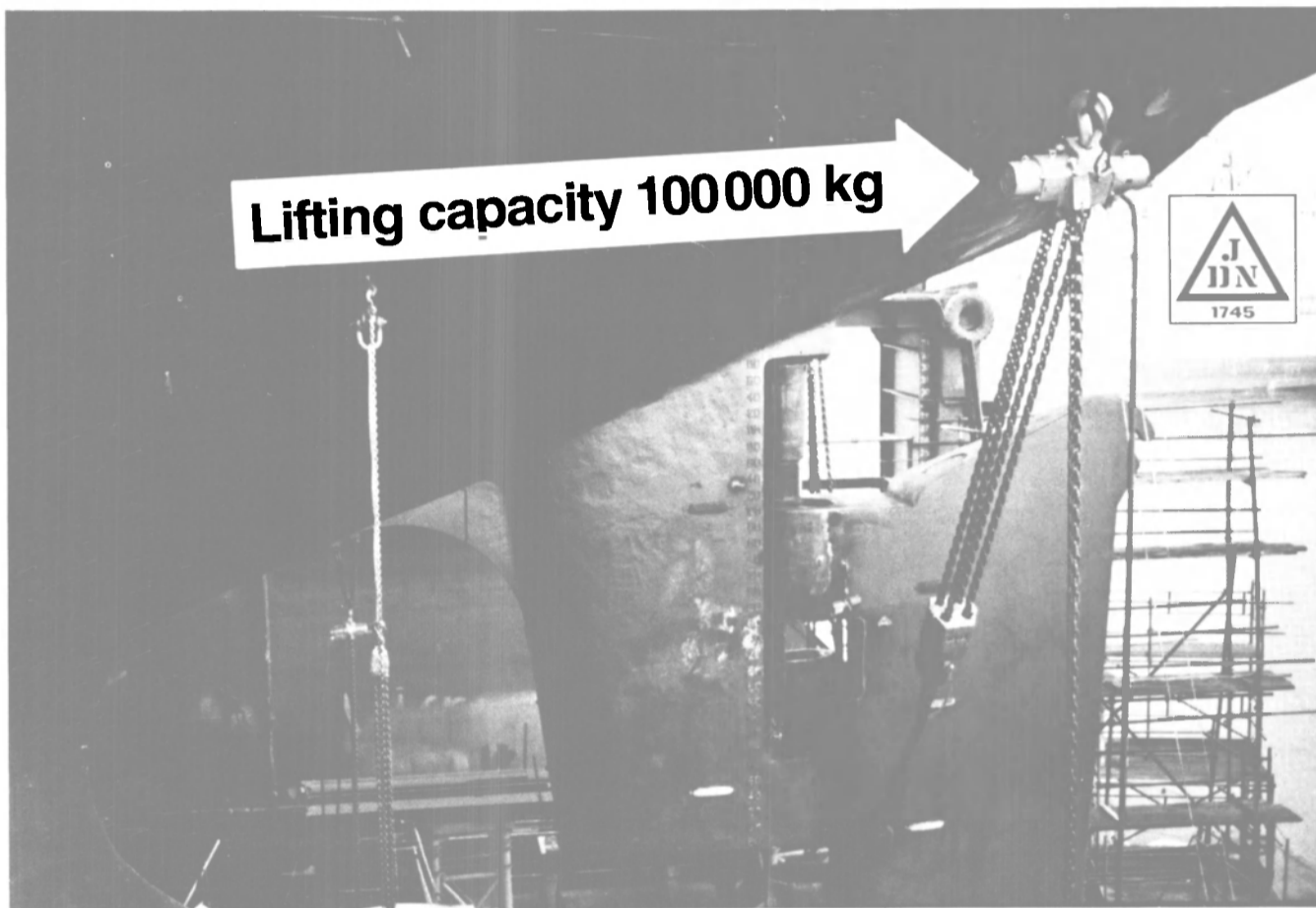
Subscribers to the *Register* receive free two separate volumes—*Subsidiary Sections*, which amplifies specialized data in the *Register*, and the *Register of Off-shore Units, Submersibles and Diving Systems*.

Subscribers to the *Register of Ships* also receive 12 cumulative monthly updating supplements

covering all published ships and owners, and the Society's annual Statistical Tables.

Complementing these five volumes are the *List of Shipowners* and *Appendix*, which are purchased separately.

For terms of subscription and order forms, write to The Administration Officer, Lloyd's Register of Shipping, 17 Battery Place, New York, NY 10004.



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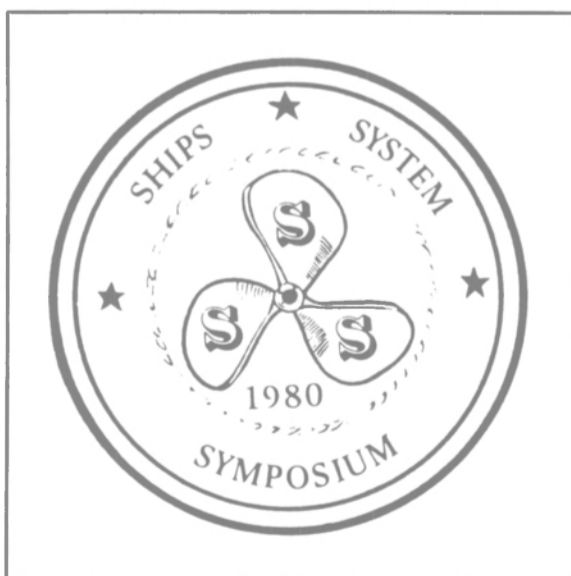
## ASNE Ship Systems Technical Symposium

The first American Society of Naval Engineers (ASNE) Ship Systems Symposium will be held on October 2 and 3, 1980, at the Cherry Hill Inn, Cherry Hill, N.J. It is being held at the start of the Service Life Extension Program (SLEP) for modernization of the aircraft carrier USS Saratoga at the Philadelphia Naval Shipyard.

The symposium is being sponsored by the Delaware Valley Section of ASNE and co-hosted by the Philadelphia Naval Shipyard and the Naval Ship Systems Engineering Station, Philadelphia Division.

Advance registrations indicated that hundreds of Navy and civilian engineers, designers and planners will be attending this symposium's technical sessions and will view the many technical exhibits which will be on display.

The purpose of the symposium is to bring together Navy users and developers, equipment operators and engineers and program planners in an open forum to identify and



propose solutions to current and future problems. The whole life cycle of ship systems, including development, operation, mainte-

nance and improvement of hull, propulsion and auxiliary systems, will be covered.

The technical papers are divided into four major topical areas—ship systems development, ship systems maintenance and readiness, ship systems testing and ship systems survivability. Following the presentation of each paper there will be formal written discussion after which spontaneous comments and questions will be invited from the audience as time permits.

On Thursday, October 2, there will be a luncheon for the symposium participants and in the evening of the same day there will be a social hour and banquet for participants and guests. On October 3, there will be a luncheon following the technical sessions and then tours, planned by the host activities to NAVSSES Test Facility and Philadelphia Naval Shipyard's Propeller Profiler. The symposium's hosts also urge participants to take this opportunity to visit the many marine exhibits in historic downtown Philadelphia.

## PROGRAM

October 2, 1980

8:00 to 9:00 A.M.—Registration

9:00 to 10:00 A.M.—Welcoming remarks and keynote address

10:15 A.M. to 12:15 P.M.—Technical Session 1A

### Ship Maintenance Program

“Ship Installation (SI) Equipment Modernization of the Service Life Extension Program (SLEP)” by **William Goon**, Naval Air Engineering Center.

“Maintenance of Aircraft Carriers: A Challenge Current and Future” by Comdr. **William B. Barton**, USN, COMNAVAIRLANT.

“The DD-963 Class Maintenance Plan—An Integrated, Life Cycle Maintenance Strategy” by **Robert B. Thompson**, ARINC Research Corp.

(Alternate paper) “An Approach to Intra-cycle Maintenance Material Management” by **Fred M. Praissman**, PERA (CRUDES), and **Ray Allen**, QED Systems, Inc.

### Technical Session 1B

#### New Developments in Ship Systems

(Concurrent with Session 1A)

“A Practical Approach to Control of Shipboard Electromagnetic Interference” by **Russell E. Carstensen**, Puget Sound Naval Shipyard.

“Fast Food Joins the Navy” by **M.W. Whitford** and **C.W. Hammer**, Norfolk Naval Shipyard.

“Shipboard Machinery Control—The Next Generation” by Lt.(N) **D.A. Redmond**, Canadian Forces, National Defence Headquarters.

(Alternate paper) “Here’s to Good Health and Long Life of the Naval Gas Turbine!” by **G.B. Katz**, **R.E. Kaufman**, and **W.J. Valentine**, NAVSSES.

12:30 to 2:00 P.M.—Lunch and luncheon address

2:30 to 4:30 P.M.—Technical Session 2A

### Shipboard Maintenance Techniques

“Maintenance Painting in the U.S. Navy” by **H. Vanderveldt**, Phd, and **S.D. Rodgers**, COMNAVSEASYS COM.

“Underwater Hull Maintenance” by **Gene Daly**, Seaward Marine.

“Reliability of Weapons Elevators and Handling Systems—Is There Hope for Improvement?” by **L.T. Casebolt**, NAVSEACENLANT.

(Alternate paper) “Maintenance and Lubrication of Gear Type Couplings” by **Michael Talisetrat**, Koppers Company.

### Technical Session 2B

#### Design Initiatives

(Concurrent with Session 2A)

“Ship Systems Development; Design Improvement/Ship Systems Survivability; Operability and Reliability” by **Marvin O. Miller**, NSWSES.

“Ship Design: Performance through Innovation” by Lt. Comdr. **James E. Baskerville**, Pearl Harbor Naval Shipyard.

“Mechanical Support Systems for the AEGIS Combat Systems” by **Charles E. Martin**, RCA.

(Alternate paper) “Shipboard 400 Hz Power System” by **Charles E. Martin**, RCA.

6:00 to 7:00 P.M.—Social Hour

7:00 to 9:30 P.M.—Banquet and main address



October 3, 1980

9:00 to 11:00 A.M.—Technical Session 3A

### Maintenance Logistics Planning

“Gas Turbine Ship Engineering Control Systems Need for a Total ILS Effort” by **Raymond S. Lisiewski**, COMNAVSEASYS COM.

“Maintenance Planning Technology — A New Look” by **J.A. Hastings**, Lockheed-California Co.

“A New Approach to Operating Cycle Maintenance” by **J.T. Grawl** and **J.V. Coe**, PERA (CRUDES).

(Alternate paper) “Direct Computer Analysis of Maintenance Narrative Data” by **R.F. Morgenstern**, NAVSSES, and **B.J. Walsh**, COMNAVSEASYS COM.

(continued on page 66)



ASNE Ship Systems Symposium  
List Of Exhibitors

Advanced Structures Corp.  
Aircraft Porous Media Inc.  
Bendix Corporation  
CDI Marine  
Colt Industries  
Dayton T. Brown, Inc.  
Deutsch Company  
Foster Wheeler Boiler Corp.  
General Electric Company  
Ingersoll Rand  
J.J. Henry Co., Inc.  
M. Rosenblatt & Son, Inc.

Marotta Scientific Controls  
Northrop Services Inc.  
Philadelphia Gear Corporation  
QED Systems Incorporated  
Raychem Corporation  
RCA - MSR  
Star Associates  
Systems Engineering Associates  
Terry Corporation  
Unified Industries Inc.  
Worthington Pump Division



ASNE Ship Systems Symposium

(continued from page 65)

Technical Session 3B

Ship System Testing

(Concurrent with Session 3A)

"Land-Based Test Sites—Lessons Learned" by Richard E. Foster, Wheeler Industries.

"Shipyard's Role in Light-Off Examinations" by Lt. J. Dunn and Lt. D. Zuber, Philadelphia Naval Shipyard.

"Digital Electronic Monitoring and Control of Naval Shipboard Turbine-Driven Auxiliary Equipment" by R.P. Fisher and M.E. Shiffler, Dayton T. Brown, Inc.

(Alternate paper) "A Decade Report on Developing Ship Engineering Systems Software for the Total Ship Test Program" by Meyer Ziev, NAVSSES.

11:30 A.M. to 1:00 P.M.—Lunch and luncheon address.

1:00 to 4:00 P.M.—Tour of NAVSSES or Philadelphia Naval Shipyard.

Although much of recent technical attention has focused on the electronics and weapons systems, the Navy faces many of its most difficult challenges in these basic ship systems. In bringing together the operator and engineer in open forum, the Delaware Valley Section intends to foster identification and solutions to current and future problems relating to the cycle operation, maintenance and cost of hull, propulsion, and auxiliary systems.

For further details on the ASNE Ship Systems Symposium, as well as registration forms and information write, ASNE Delaware Valley, Ship Systems Symposium Registration, Ms. Frances McDaniel, Code 200.01, Bldg. 7, Philadelphia Naval Shipyard, Philadelphia, Pa. 19112.



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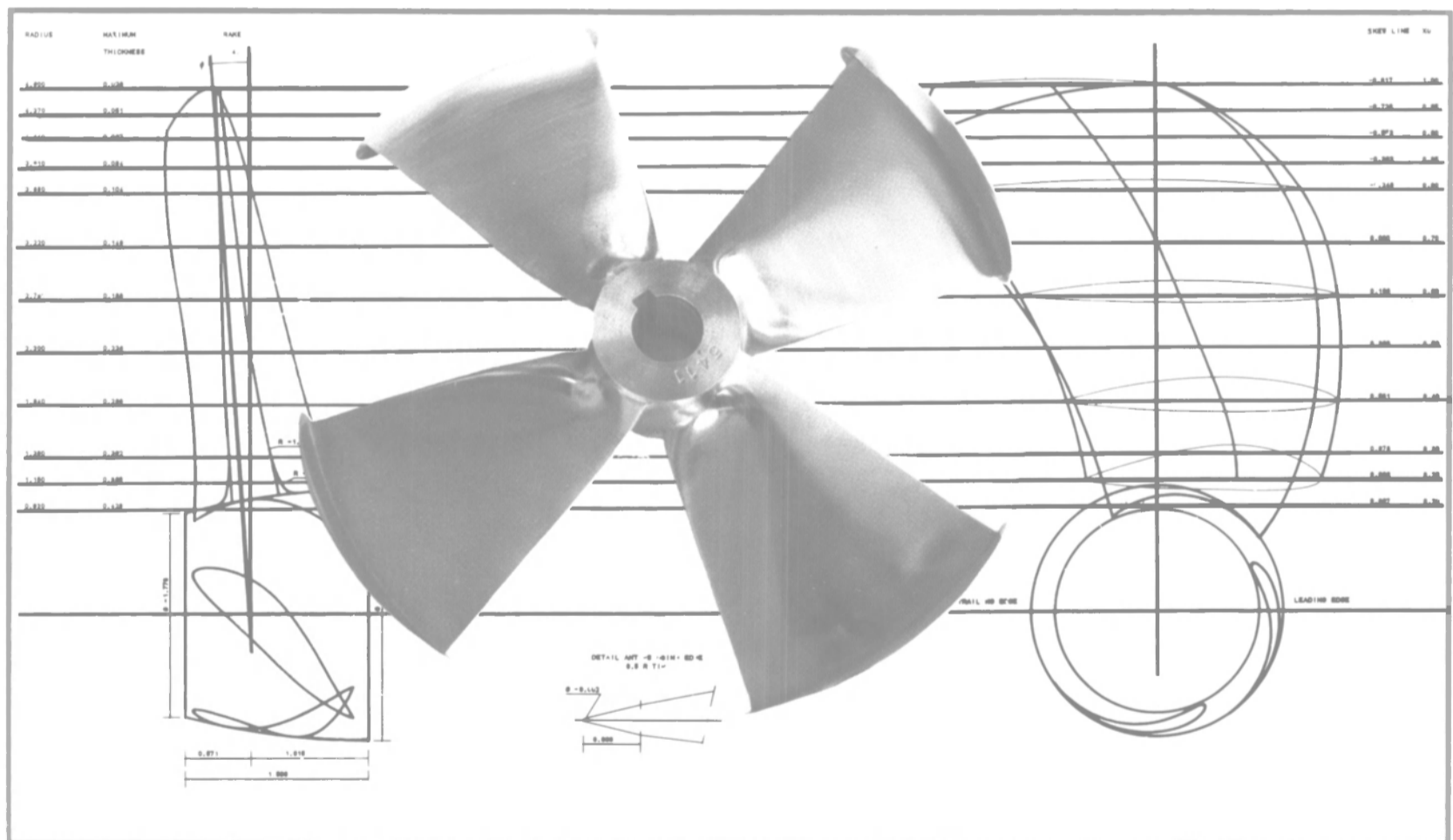
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### New Catalog On Workboat Engines Available From Detroit Diesel Allison

A new catalog describing the company's marine diesel engines for workboat applications is available from Detroit Diesel Allison Division, General Motors Corporation. Titled "Detroit Diesel Engines — Commercial Marine Models," the eight-page brochure provides detailed information about 17 different engines for

commercial marine propulsion systems.

The new brochure also highlights product features that help increase productivity and profitability in the commercial marine industry, and explains DDA's comprehensive after-sale support programs and warranties.

For a free copy of the brochure, write to **Timothy Lemmon**, Dept. MR, Detroit Diesel Allison, P.O. Box 81, Birmingham, Mich. 48012. Ask for publication number 6SA 117.

### Two More Jackup Rigs Costing \$70 Million Ordered From Bethlehem

Two Bethlehem Steel Corporation shipyards have each received contracts from Griffin-Alexander Drilling Company of Houston to build mat-supported, jackup drilling rigs at a total cost of about \$70 million.

One unit, the Griffin-Alexander V, will be constructed at Bethlehem's Beaumont, Texas, yard and

the other, the Griffin-Alexander IV, will be built at the Sparrows Point, Md., yard. The rigs, capable of drilling 30,000-foot wells in 200-foot water depths, are scheduled for delivery in March and May 1982. Each will feature 1,000,000-pound combination drilling loads and substructures capable of being cantilevered 45 feet aft of the platform.

**Sherman C. Perry**, general manager at the Beaumont yard, said these contracts bring to five the number of drilling rigs under contract at Bethlehem yards for Griffin & Alexander — three at Beaumont and two at Sparrows Point.

### A.M. Barton Appointed Assistant GM At Electric Boat Division

Arthur M. Barton has been appointed assistant general manager, planning and control at General Dynamics' Electric Boat Division, Groton, Conn.

In announcing this appointment, **P. Takis Veliotis**, General Dynamics' executive vice president and Electric Boat general manager, said Mr. Barton will have responsibility for the comptroller's and planning organizations, the new construction program offices, and the division's management systems development.

He joined the nuclear submarine shipyard in 1962 as a project contractor administrator. He later served as manager of contract administration and manager of cost engineering. Since 1972 he has been comptroller.

### HNG Corporation Has Acquired Alamo Barge Group Of Companies

Houston Natural Gas Corporation (HNG) has announced completion of the transaction to acquire the Alamo Barge group of companies. The operating name of the new HNG subsidiary is Alamo Barge Lines, Inc.

The previously announced acquisition agreement, which involves a tax-free exchange of HNG common stock, had been pending because of regulatory and other business requirements which now have been met.

The Alamo group, headquartered in Houston, includes Alamo Chemical Transportation Company, Alamo Barge Lines, East-West Towing Company, and Marine Barge Lines, Inc.

In addition to marine transportation on U.S. rivers and intra-coastal waterways, HNG is involved in the transmission and sales of natural gas and natural gas liquids, exploration and production of oil and natural gas, production and marketing of carbon dioxide and other industrial and medical gases, coal mining, construction of barges and towboats, and marine services to the offshore petroleum industry.

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## Laumeister, Kroll And Arkens Appointed VPs At The Ansul Company

Appointments of three new vice presidents have been announced by The Ansul Company, Marinette, Wis. They are **Hugh M. Laumeister**, vice president of Marketing; **Leonard R. Kroll**, vice president and general manager of the Fire Systems Division; and **Henry E. Arkens**, vice president

and general manager of the Chemical Division.

Mr. Laumeister will have charge of the development and marketing of all fire protection products. He has been with the company since 1975, first as national sales manager and, since 1978, as general manager of the Standard Products Division. Previously, he was with General Electric for eight years in various sales and marketing positions.

Mr. Kroll will head the newly

formed Fire Systems Division, which will handle the company's fire protection contracting business. He joined Ansul in 1975 as finance / administration manager for Fire Protection. In 1977, he was named manager of the Engineered Systems Division.

Mr. Arkens has been general manager of the Chemical Division since 1977, and is responsible for the marketing, development, and manufacture of all Ansul chemical products. He has been with

the company since 1948 and served in a number of field chemical sales capacities until he was appointed industrial chemicals sales manager in 1965. Beginning in 1968, he served in various planning and business development functions for the division, and in 1974 was named marketing manager for specialty chemicals.

## Bobzien Named Chairman, Greene President At Jeffboat, Incorporated

Two changes involving top management positions at Jeffboat, Incorporated, the Jeffersonville, Ind., shipbuilding unit of Texas Gas Transmission Corporation's Inland Waterways Services division, were announced recently.

**H.J. Bobzien Jr.**, who formerly held the position of president, was named chairman and chief executive officer, and **R.W. Greene III**, who had served as executive vice president, was appointed president and chief operating officer.

Mr. Bobzien also will continue in his existing responsibilities as president and chief executive officer of the Inland Waterways Services division, and as president of American Commercial Barge Line Company (ACBL).

In addition to his promotion at Jeffboat, Mr. Greene also is one of two group vice presidents appointed in the Inland Waterways Services division. Also named to that position is **J. Robert Hard**, formerly vice president of transportation services at ACBL, who also was appointed executive vice president of the barge line.

Mr. Greene joined ACBL in 1968 as an administrative assistant. Prior to being named executive vice president of Jeffboat in 1978, he held a number of other managerial positions.

## New Brochure Details Stainless Steel And Specialty Alloys

A new four-page metallurgical brochure provides detailed specifications on the broad line of stainless-steel and specialty alloys available for centrifugally cast parts from Wisconsin Centrifugal, Waukesha, Wis., a leading U.S. producer of centrifugal castings for original equipment manufacturers.

The brochure contains data on regularly produced alloys, as well as special and unusual alloys available for custom production, including Argon Oxygen Decarburized (AOD) refined alloys. Alloy categories include chrome, chrome nickel, heat resistant, nickel-copper and super alloys. The alloys are described in terms of similar industry specifications, chemical compositions, and mechanical properties.

For a free copy of Bulletin 300, write to Wisconsin Centrifugal, Inc., Dept. MR, P.O. Box 827, Waukesha, Wis. 53187.



## HYDE MEETS USCG AND IMCO REGULATIONS

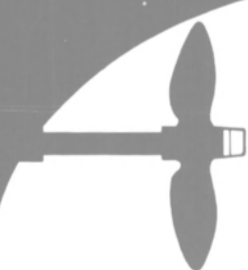
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## Zidell Launches Another Big Grain Barge For Shaver Transportation

George Shaver, president of Shaver Transportation Company, announced that Zidell Exploration, Inc. has launched the fourth of a continuing series of large grain barges built for Shaver. These barges, each of 3,750 tons capacity, have the largest tonnage capability of any grain barges presently operating on the Columbia River System. This additional barge is capable of transporting 150,000 tons per year.

This barge will be placed in service for the exclusive use of Lees-Carney Company, a grain merchandising firm having been engaged in business in the Northwest for more than 25 years.

The launching ceremonies took place at Zidell's yard in Portland, Ore., with the christening by Mrs. Susan Carney.

This new addition to the Shaver fleet of tugs and barges will inaugurate a year of celebration of the firm's 100th anniversary in the water transportation business of the Pacific Northwest.

## David Linde Named To Head Coast Guard's N.Y. Marine Safety Division

Capt. David J. Linde has been assigned as Chief of the Third Coast Guard District's Marine Safety Division, relieving Capt. George Wood.



Capt. David J. Linde

In his new position, Captain Linde administers many Coast Guard programs, including port safety and security, commercial vessel safety, and marine environmental protection. He also is program manager for the Merchant Marine Technical branch of the Marine Safety Division, which is responsible for plan review on all U.S. ship construction in the Northeastern United States, Canada, and Europe.

Prior to his recent assignment, he was Commanding Officer of MIO New York from June 1979 to June 1980. During his 28-year career, Captain Linde has served onboard four Coast Guard cutters and with three Marine Inspection Offices. He also was assigned to the Marine Technical Division at Coast Guard Headquarters for eight years, including being Chief of that Division from 1974 to April 1977.

## Navidyne Satellite Navigators Ordered By French Owner

Navidyne Corporation has received an order from Compagnie General Maritime (CGM), Paris, for seven ESZ-4000 satellite navigators for installation aboard CGM's modern container vessels. The order was placed with Navidyne's French agent, Sperry Marine Systems, France.

The ESZ-4000 was selected by CGM after an extensive evaluation of the equipment at sea aboard the Atlantic Cognac, according to Navidyne president A. Clifford Barker.

Since its introduction to the merchant shipping market in 1978, the ESZ-4000 has been installed aboard more than 1,000 vessels throughout the world. A major reason for the product's

widespread acceptance, according to Mr. Barker, is the ESZ-4000's operating simplicity. It provides direct readout of all navigation and routing information simultaneously on a CRT display.

Navidyne Corporation was founded in 1973 and is headquartered in Newport News, Va. The company maintains a network of sales and service agents throughout the world.

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The FmV SURE ONE is so successful that some competitors now purchase and include it in their own systems. After exhaustive testing, THE SURE ONE was recently chosen by a major oil company for retrofit installations throughout its vast tanker fleet.

AUM/FmV's worldwide sales and service organization proudly offers immediate delivery of the FmV SURE ONE Flue Gas Valve from stock in sizes from 350 mm through 800 mm (14 in. through 32 in.) in both DIN or ASA flanges. If you are planning any IGS retrofit installation, new building or any other application requiring reliable shut-off of high temperature low pressure gases, contact AUM for full information on this remarkable device.

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MR

### \$3.5-Million Navy Contract Awarded To Uniflite For Special Warfare Craft

The U.S. Naval Sea Systems Command has awarded a \$3.5-million contract to Uniflite, Inc., Bellingham, Wash., for construction of 36-foot, Sea-Fox special warfare craft, including associated equipment, road trailers, and spare parts. The company did not disclose the number of units to

be built, whose speed and mission are classified.

Under a previous contract, Uniflite developed the prototype of this new combat vessel, which has successfully completed an extensive operational evaluation by the U.S. Navy. The new contract covers the first of several procurements planned by the Naval Sea Systems Command over the next three years.

James J. Doud Jr., Uniflite pres-

ident, said that this contract is an important milestone in the company's long-established history as a major supplier to the U.S. Navy of fiberglass boats and small craft for military application.

Delivery of the new boats will be to naval installations in San Diego and Norfolk, commencing in July 1981 and continuing through February 1982.

The Sea-Fox boats, to be built in the company's Bellingham

plant, will have a 10-foot beam with 3-foot draft, and will be powered with twin GM Detroit Diesel engines rated at 450 bhp each.

Construction will be of fiberglass reinforced plastic. Each boat will be fitted with extensive communications and navigational gear, and will be equipped with light armament.

### Steve Vorenkamp Returns To Halter Marine, Inc. As Director Of Services

Steve B. Vorenkamp has rejoined Halter Marine, Inc. as director of services, responsible for corporate production control, estimating, and purchasing. The announcement was made by Halter president Floyd J. Naquin, who welcomed the return of the executive as another outstanding addition to the shipbuilding firm's management staff.



Steve B. Vorenkamp

Mr. Vorenkamp had been vice president and general manager of Halter Marine in the early 1970s. Mr. Naquin noted that the new director of services had played a key role in the initial growth of Halter during his 3½ years at the company's helm.

Prior to returning to Halter, Mr. Vorenkamp was associated with Continental Underwriters Ltd., and had been vice president of worldwide operations for Acadian Marine Services Inc., New Orleans. He left Halter in 1971 to manage a joint venture between Santa Fe Drilling Company and Waage of Norway.

### Robert Sturges Named Marketing Manager (USA) For Consafe Group

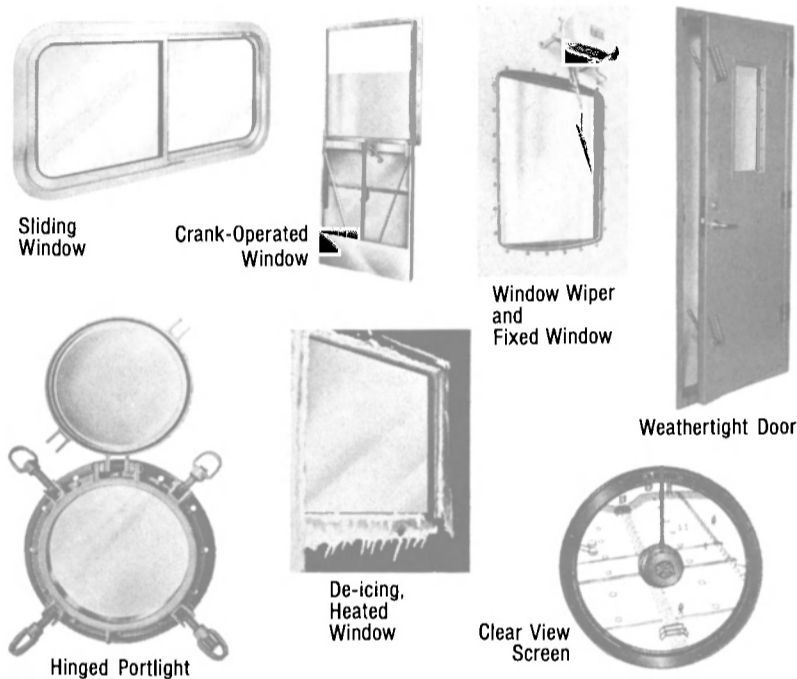
Consafe Group, Gothenburg, Sweden, has appointed Robert Sturges as marketing manager (USA) of their Isolamin Agency. In this capacity, he will be responsible for the sale and technical service directed to the offshore drilling and U.S. maritime industries. Mr. Sturges has been involved in marine sales and service for over 15 years.

Isolamin is a completely prefabricated accommodation paneling system, which has received USCG approval as well as IMCO and SOLAS recognition.

Brochures and technical information can be obtained by writing to Robert Sturges, Consafe, Inc., Dept. MR, P.O. Box 40339, Houston, Texas 77040.

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Merchant Marine Act, 1936, as amended.

*The undersigned directly placed the above Bonds.*

**Merrill Lynch White Weld Capital Markets Group**

Merrill Lynch, Pierce, Fenner & Smith Incorporated

May, 1980

*This announcement appears as a matter of record only.*

**\$15,000,000**

**United States Government Guaranteed  
Ship Financing Bonds**

issued by

**Waterman Steamship Corporation**

affiliate of

**Transway International Corporation  
Waterman Industries Corporation**

consisting of

11 $\frac{3}{8}$ % Sinking Fund Bonds, Series R-AA, Due not later than  
March 31, 2003

Payment of principal and interest is guaranteed by the  
United States of America under Title XI of the  
Merchant Marine Act, 1936, as amended.

*The undersigned has underwritten and publicly offered the above Bonds.*

**Merrill Lynch White Weld Capital Markets Group**

Merrill Lynch, Pierce, Fenner & Smith Incorporated

May, 1980

*This announcement appears as a matter of record only.*

**\$24,300,000**

**United States Government Guaranteed  
Ship Financing Bonds**

and

**\$62,000,000**

(Cumulative)

**United States Government Guaranteed  
Construction Period Ship Financing Notes**

issued by

**Levingston Falcon I Shipping Company  
Levingston Falcon II Shipping Company  
Levingston Falcon III Shipping Company**

Payment of principal and interest is guaranteed by the  
United States of America under Title XI of the  
Merchant Marine Act, 1936, as amended.

*The undersigned have underwritten and publicly offered the above Notes and  
Bonds, the proceeds of which provide a portion of the interim and per-  
manent debt financing for three 36,000 DWT dry bulk carriers under  
construction for the respective Levingston Falcon Shipping  
Companies, each of which is a partnership controlled by*

**Ashland Oil, Inc.**

and

**The Falcon Shipping Group**

**Merrill Lynch White Weld Capital Markets Group**

Merrill Lynch, Pierce, Fenner & Smith Incorporated

**Warburg Paribas Becker**

A. G. Becker

June, 1980

*This announcement appears as a matter of record only.*

**\$20,000,000**

**United States Government Guaranteed  
Ship Financing Bonds**

issued by

**Waterman Steamship Corporation**

affiliate of

**Transway International Corporation  
Waterman Industries Corporation**

consisting of

\$4,000,000	9.50% Sinking Fund Bonds, Series C	(Hull 2307)
	Due not later than June 15, 1985	
\$3,000,000	10.00% Sinking Fund Bonds, Series D	(Hull 2307)
	Due not later than June 15, 1989	
\$3,000,000	10.25% Sinking Fund Bonds, Series E	(Hull 2307)
	Due not later than June 15, 1992	
\$4,000,000	9.50% Sinking Fund Bonds, Series CC	(Hull 2308)
	Due not later than June 15, 1985	
\$3,000,000	10.00% Sinking Fund Bonds, Series DD	(Hull 2308)
	Due not later than June 15, 1989	
\$3,000,000	10.25% Sinking Fund Bonds, Series EE	(Hull 2308)
	Due not later than June 15, 1992	

Payment of principal and interest is guaranteed by the  
United States of America under Title XI of the  
Merchant Marine Act, 1936, as amended.

*The undersigned has underwritten and publicly offered the above Bonds.*

**Merrill Lynch White Weld Capital Markets Group**

Merrill Lynch, Pierce, Fenner & Smith Incorporated

June, 1980

**Andre Schwartz, Vice President**

(212) 637-2277



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## GE Turbines Will Power Two Coal-Fired Ships In Australian Trade

Coal-fired steamships are making a comeback on the high seas. Bulkships, limited of Sydney, has ordered two 75,750-dwt bulk carriers to serve the Australian bauxite trade. The coal-fired steamships will be powered by

General Electric Company geared marine steam turbines.

The ships will haul bauxite between Weipa and Gladstone, Queensland, Australia — a distance of 1,250 miles. The ships will be chartered to Queensland Alumina, Limited. The first is scheduled to go into service during the last quarter of 1982.

**Raymond J. Walsh**, manager of marine sales at General Electric's

Industrial and Marine Steam Turbine Division in Lynn, Mass., said the soaring cost of petroleum has significantly altered the economics of ship operation and ownership. He said more and more ship-owners and builders are investigating the possibility of reemploying coal-fired propulsion systems, which now offer superior economics on many of the world's trade routes.

The propulsion equipment for the Bulkships vessels will be supplied by General Electric and Cantieri Navali Reuniti, GE's manufacturing associate in Genoa, Italy. Each will be powered by a 19,000-shp geared marine steam turbine.

The selection of coal-fired propulsion systems was based on economic studies that indicate that at anticipated increases in the price of oil, the use of coal will produce substantial savings in operating costs of the vessels.

## New Bulletin Available On Racal Airstream's Supplied-Air Systems

Racal Airstream, Inc., Rockville, Md., announces the publication of a new sales bulletin describing the newly introduced Airstream supplied-air systems. The AH30 standard supplied-air system and the AH31 system for welders incorporate the features of Airstream-powered air-purifying units into a supplied-air configuration.

The sales sheet explains the lightweight, balanced features of the systems, which are said to provide helmet stability and worker comfort. Technical specifications outline airflow and noise levels, plus compliance with head and face protection standards.

Sales literature on supplied-air systems and the complete line of Racal Airstream-powered air-purifying products is available from **Sue Quinn**, Dept. MR, Racal Airstream, Inc., 1151 Seven Locks Road, Rockville, Md. 20854.

## MECO Has New Line Of Water Desalinators—Literature Available

Mechanical Equipment Company, Inc. (MECO), New Orleans, has developed a new line of packaged water desalination equipment, the Water-Wizard reverse osmosis water maker.

Ten models are available ranging in capacities from 1,300 to 30,000 gallons of fresh water per day, with dry weights from 1,000 to 5,770 pounds.

Each unit is skid-mounted and self-contained with its own control and instrument panels, filtration, and chemical treatment systems. Customer field installation is limited to feed, product, and waste water connections, and power supply to the electric panel.

The units are said to feature simple operation, efficient filtration, effective pre-treatment, easy access for maintenance, and full instrumentation.

Service and spare parts support are available in New Orleans, Aberdeen, Singapore, and Abu Dhabi, with other sales offices in London, and Abu Dhabi, plus a worldwide agents' network.

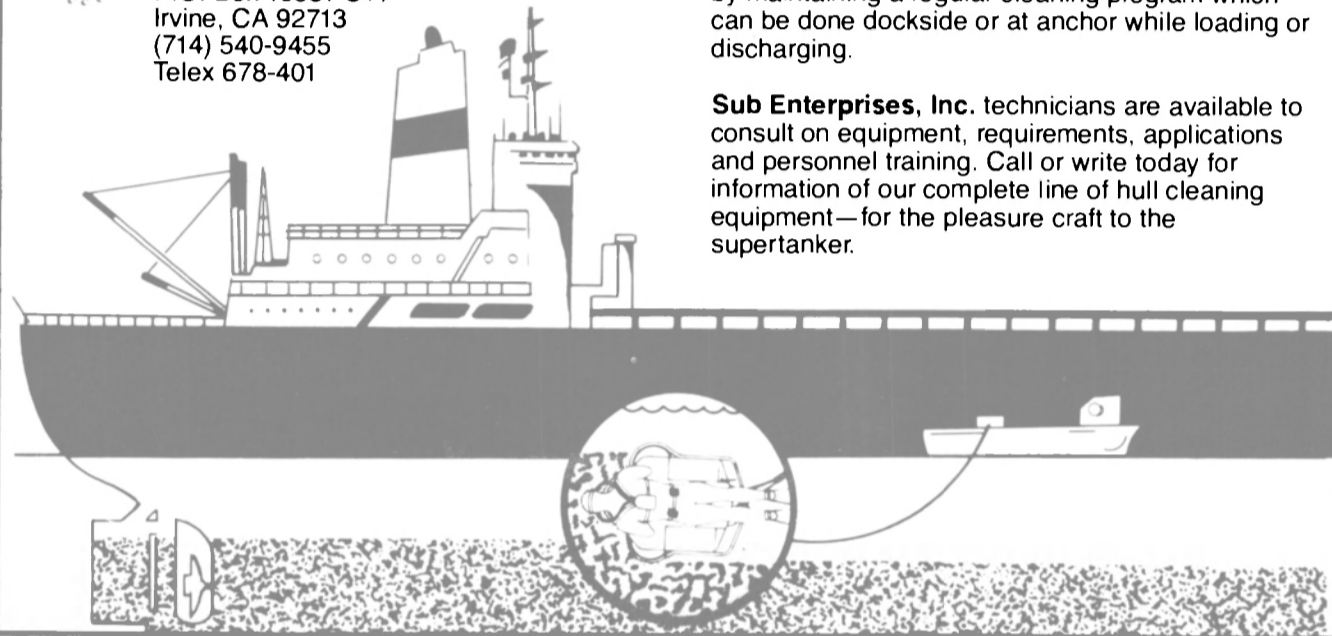
For free literature and additional information, write to **S. Disi**, Dept. MR, MECO, 861 Carondelet Street, New Orleans, La. 70130.

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### MarAd Approves Title XI On Four Drilling Barges To Cost \$44.7 Million

The Maritime Administration has approved in principle the application by Goldrus Marine Drilling Company, Houston, for a Title XI guarantee to aid in financing the construction of four posted drilling barges.

Red Fox Industries, Inc. of New Iberia, La., delivered the first of the four 209-foot-long submersible barges recently, and expects to complete construction on the remainder by the end of February 1981. The vessels are capable of drilling to a depth of 30,000 feet, and will be used in exploratory and developmental drilling operations in the shallow inland coastal waters of Texas and Louisiana.

The Title XI guarantee would cover over \$33 million, or 75 percent of the estimated cost of \$44,722,818.

### Racor Introduces In-Line Diesel Fuel Heater —Literature Available

Cold-weather hassels with icing, waxing, and related problems have reportedly become things of the past with the development of the new Racor RX-20 in-line diesel fuel heater.

The RX-20 is an efficient, compact-sized unit. It combines heat-rise efficiency and reliability in a rugged unit, with low maintenance requirements. Engine radiator fluid is used to keep the diesel fuel above the cloud point and flowing, even in subzero weather. The manufacturer reports this permits the use of No. 2 diesel in winter, without the need for additives.

The design of the RX-20 eliminates the possibility of internal leaks, and the diesel fuel does not make contact with the radiator fluid. All metal surfaces are non-corrosive.

Heat is exchanged from the tube bundle containing hot radiator fluid to the cold fuel being circulated around the tubes as the two liquids move through separate compartments of the compact in-line fuel heater.

During warm-weather operations, the RX-20 is turned off manually by an integral control valve, eliminating any possibility of overheating the diesel fuel.

Racor RX-20 fuel heaters, like Racor fuel filter/water separators, are sold and serviced by more than 3,000 dealers worldwide.

For free literature or additional information write to Norbert Zogelman, Dept. MR, Racor Industries, Inc., Filtration Division, P.O. Box 3208, Modesto, Calif. 95353.

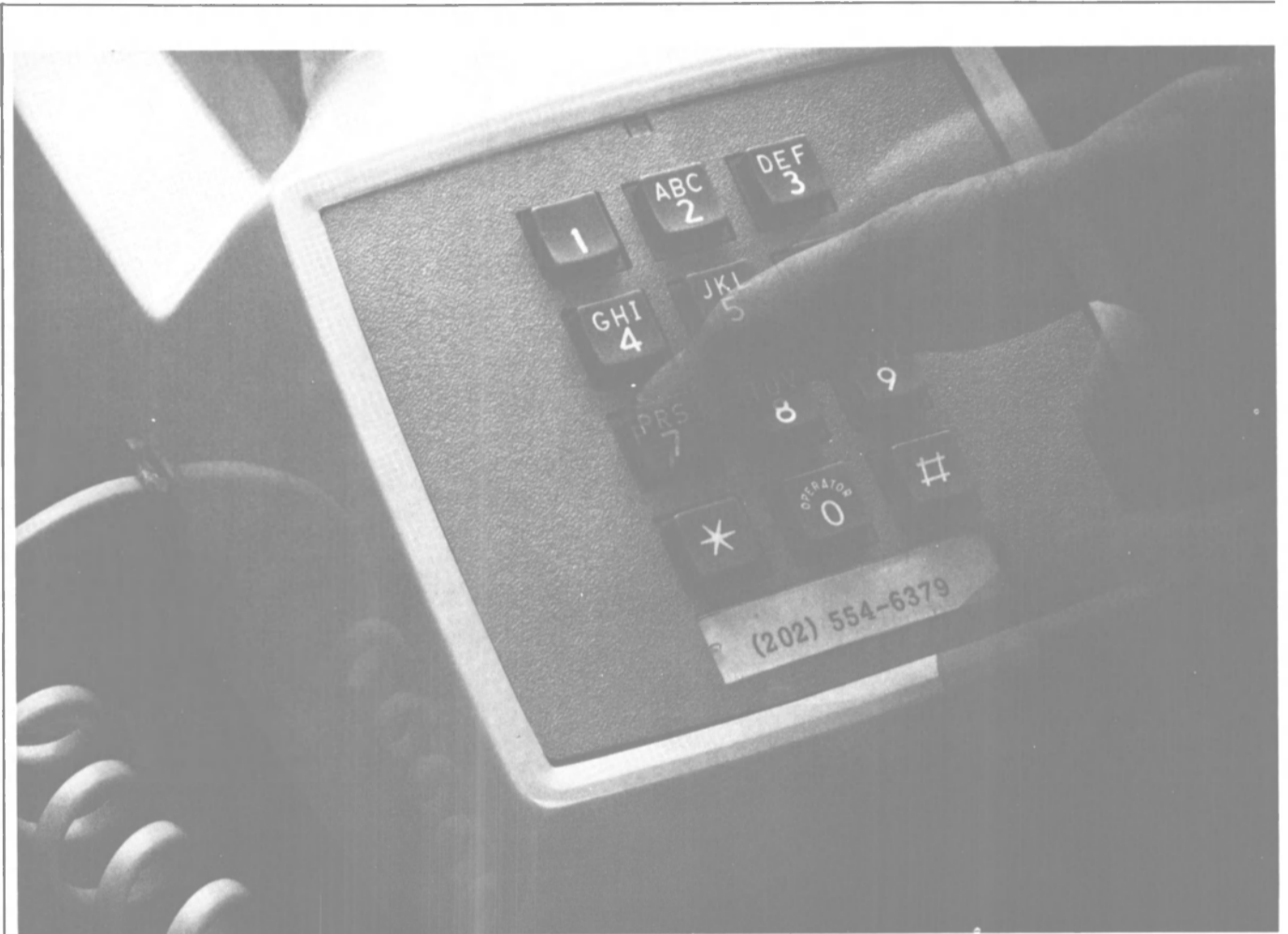
### O'Boyle Firm Appointed Sales Representative For Esgard Of Louisiana

The New Jersey firm of Richard F. O'Boyle, Inc., has been named sales associate for Esgard Inc., a Lafayette, La., manufacturer of rust and corrosion preventatives that are distributed worldwide.

Richard F. O'Boyle, president of the sales firm, said his organization will represent the entire product line of Esgard ranging from Bio-Kote, a new bio-degradable, non-petroleum, rust preventive for marine vessels, barges, and rigs to Flange-Kote, a product that preserves flange faces, nuts and studs. Esgard also makes pipe coatings, break-in oil, internal marine tank coatings, exterior

Kotes-All for multiple purpose use, heavy duty wire, rope, and cable coatings and a series of aerosols.

The O'Boyle firm also represents ship repair and supply organizations from 19 different countries to U.S.-based owners and operators. The organization is headquartered in Aberdeen, N.J. 07747, and reached through P.O. Box 595.



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**Charleston Naval Civilian  
Administrators Elect Officers**

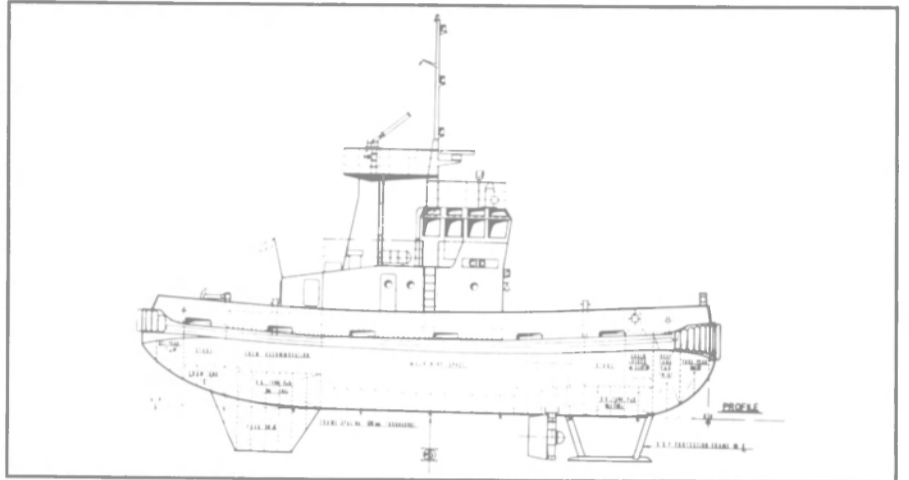


At a recent meeting of the Charleston (South Carolina) Naval Shipyard Chapter of the Naval Civilian Administrators Association, the above new slate of officers was elected. Front row, L to R: **S.H. Smith**, secretary; **R.A. Manning**, vice president; **E.R. Wilson**, president; and **R.G. Steward**, treasurer. In back row are members of the board of directors: **R.E. Davison**, **J.T. Day**, **H.K. McCormick**, and **W.W. Scott**. **J.J. Nemeth Jr.** (not in photo) also was elected a member of board of directors.

**Schottel Gets Contracts  
For Six Tractor Tugs**

Schottel of America, Inc. has announced the signing of two contracts with Astilleros Unidos, S.A. of Mexico City (the government-owned shipbuilding group), for the design of six 22-meter Schottel Tractor Tugs, as well as

the supply of the complete propulsion machinery package for these Schottel-propelled tugboats. The design, based on the well-developed Schottel Tractor Tug, will be completed by Schottel England by Burness, Corlett and



Six Schottel Tractor Tugs such as above have been ordered by Mexico's state-owned shipbuilding group. Vessels will be designed by Burness, Corlett and Partners and built in Mexico by Astilleros Unidos yard.

**These companies are using  
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Slidell, La.  
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Placement of these securities has been arranged by the undersigned.  
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\$ 1,000,000	10.25 %	Sinking Fund Bonds Due July	15, 1985
\$ 1,750,000	10.50 %	Sinking Fund Bonds Due January	15, 1987
\$ 2,000,000	10.55 %	Sinking Fund Bonds Due July	15, 1989
\$ 1,600,000	10.625%	Sinking Fund Bonds Due January	15, 1991
\$11,500,000	10.75 %	Sinking Fund Bonds Due January	15, 2006

Principal and interest guaranteed under Title XI of the  
Merchant Marine Act, 1936, as amended.

**Kidder, Peabody & Co.**  
Incorporated

July, 1980

Partners (BCP), Basingstoke, who has had extensive experience in designing Tractor Tugs over the years. BCP has taken over the responsibility for the design of the vessels, including workshop drawings, installation drawings, piping and electrical diagrams.

The Tractor Tugs will be twin-propelled, and mounted in the bow section with two Schottel Rudder-Propellers, Model SRP 300/300DST, including a nozzle of 52 inches ID for higher thrust efficiency. They will be driven by General Motors Detroit Diesel Engines 16V-92, supplied by George Engine Company of Harvey, La. Each will produce 600 hp per shaft, running at 1,800 rpm. The total reduction ratio within the Rudder-Propeller is 3.97:1.

"The Co-Pilot 2000" full-follow-up, electric hydraulic steering system will be employed giving the propeller/nozzle a steering speed of 2 1/4 rpm. The advantage of using Rudder-Propellers lies in the fact that instant thrust is available in any desired direction through 360 degrees, and each Rudder-Propeller can be steered independently of each other. They will produce a total thrust of 16 tons, and the calculated speed of the vessel is 12 knots.

Astilleros Unidos will build these six vessels at its shipyard in Mexico. Upon completion, these vessels will be delivered to Pemex, the state-owned oil company, where they will join two other Schottel-propelled Tractor Tugs of larger horsepower, operating since 1978 for mooring services off the coast of Mexico. The vessels are also equipped with a complete fire-fighting system, and are built under ABS Classification + A-1E + AMS.

### Frazier Appointed Senior Vice President-Sales And Marketing At ACBL

Tom Frazier III, formerly vice president of sales, has been named senior vice president of sales and marketing at American Commercial Barge Line Company (ACBL), a unit of the Inland Waterways Services division of Texas Gas Transmission Corporation.

In addition, vice presidential appointments were announced for M.L. Harris, D.J. Barker, J.R. Bullard, and W.N. Whitlock.

Mr. Frazier's association with ACBL began in grain sales in 1964. He became director of dry bulk sales for Commercial Transport Company, an affiliate of ACBL, in 1965. Two years later he was made vice president of CTC and director of dry bulk sales for ACBL. He was elected vice president and assistant sales manager of ACBL in 1972, and vice president of sales in 1975.

Mr. Harris, formerly general counsel of the barge line, now be-

comes vice president and general counsel. Mr. Barker, who previously was director of regulated and terminal sales, was named vice president and general sales manager for the company. Mr. Bullard, formerly assistant vice president for fleet operations, was appointed vice president of river operations. Mr. Whitlock advances from the position of assistant vice president of fleet maintenance to vice president of fleet maintenance.

### New Brochure Available From Waukesha Division On Special Alloy Castings

For designers, specifiers and buyers of specialized castings involving stainless steels, corrosion-resistant alloys, non-galling alloys and other superior quality castings, the Waukesha Division of Abex Corporation, Waukesha, Wis., announces a new 16-page full-color brochure outlining en-

gineering capabilities, alloy specifications, molding methods, and other services.

Although Waukesha castings are used in practically all industries, its alloys have been particularly suitable in pump and valve body manufacturing and nuclear power components.

For a free copy of the brochure, write to Bill Barron, Dept. MR, Waukesha Division, Abex Corporation, 1300 Lincoln Avenue, Waukesha, Wis. 53186.

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Compact and waterproof, they will transmit emergency signals to aircraft as far as 300 miles away. Their special magnesium battery systems have a storage life guaranteed for 6 full years (FCC requires replacement at the half-life).

All units are constructed with LED test lights which assure operating readiness. They are designed to operate for 48 continuous hours at temperatures of -20° C, and will last many days longer in warmer waters.

Models RLB-14 and RLB-15 are fully automatic and approved by the U.S. Coast Guard as Class "A" EPIRB's.

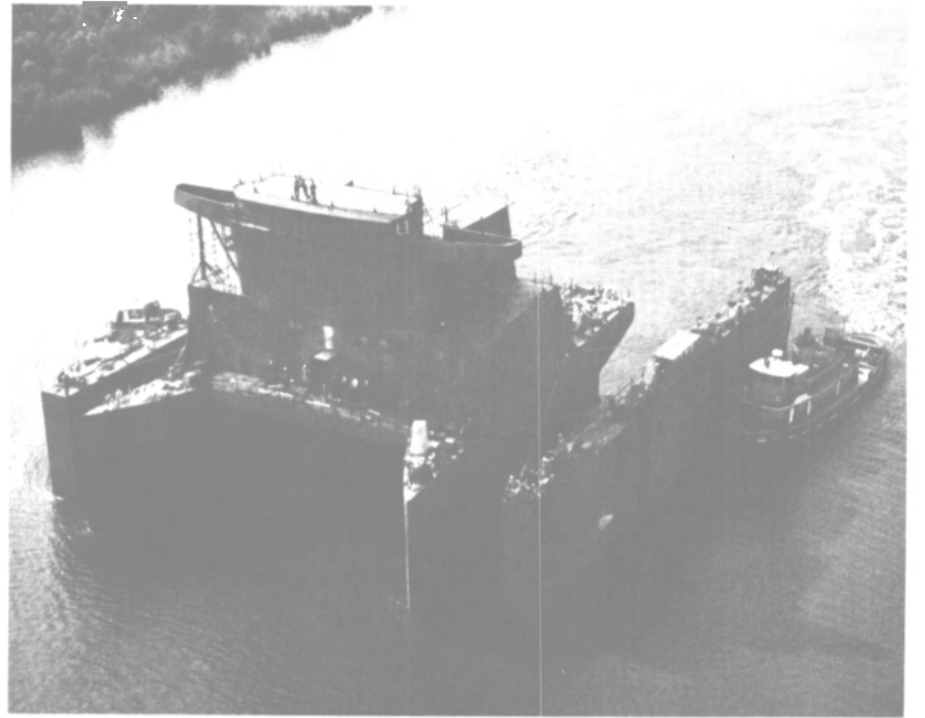
There can be no compromise in the quality of your marine safety equipment. If it isn't foolproof, it isn't worth having aboard.

All our EPIRB units are utterly reliable. If they weren't, they wouldn't be ACR.

For more information, write or call: ACR Electronics, Inc., 10-99 3901 North 29th Avenue, Hollywood, FL 33020. (305) 921-6262.



When all else fails.



Recent launch of Catug USS Jacksonville at Halter Marine's Chickasaw, Ala., division marked first use of yard's new 4,000-ton drydock. Powered by two 9,100-bhp Delaval Enterprise diesel engines, Catug is largest vessel yet built by Halter.

## Halter Launches Its First Giant Catamaran Tug

The first 133-foot catamaran tug (Catug) built by Halter Marine, Inc. was launched recently at the company's Chickasaw, Ala., division. Scheduled for delivery in November, the giant twin-hulled craft will sail to Sparrows Point, Md., where she will be mated to a 645-foot oceangoing barge being built there by Bethlehem Steel Corporation. The tug-barge unit is named the USS Jacksonville.

Halter is building six of the Catugs as subcontractor to Bethlehem, and an additional tug for

C & H Sugars, Inc. The USS Jacksonville is being built at a cost of some \$52.6 million for Artemis Marine Company of Lake Success, N.Y. She will carry refinery products between St. Croix, Virgin Islands, and New York City at a speed of approximately 16 knots.

The Catug has a beam of 90 feet 4 inches, depth at side of 39 feet, and design draft of 27 feet. Normal operating draft will be 32 feet 6 inches, and normal displacement 3,080 tons. She will have capacity for 80,000 gallons



Occupying the dais for christening of the 133-foot Catug were (left to right): Harvey Walpert, Halter project manager; Peter Constat, vice president of Apex Marine; Gwen Shumock, Chickasaw senior accounting clerk and matron of honor; Dan Strahan, general manager, Halter Chickasaw division; and Ann Billie, Chickasaw executive assistant and sponsor of the vessel.

of ballast water, 77,000 gallons of heavy fuel, 73,000 gallons of diesel fuel, 20,000 gallons of lube oil, and 51,000 gallons of fresh water.

Propulsion is by two Delaval Enterprise DMRV-16-4, direct-reversing diesel engines each rated at 9,100 bhp at 450 rpm. Philadelphia Gear Corporation supplied the reduction gears, the engine monitoring system is by Galbraith-Pilot Marine, and the electro-hydraulic, ram type steering gear was provided by Sperry. Delaval supplied the pneumatic engine controls.

Floyd J. Naquin, president of Halter Marine, said the Catug launch represented several "firsts" for the company, which is known primarily as the world's largest builder of support vessels for the offshore petroleum industry.

"This Catug clearly demonstrates Halter's capability to construct large, complicated ocean-going ships. For 25 years we built our reputation on the construction of innovative boats; now we have expanded our reputation to include the construction of innovative ships," explained Mr. Naquin.

The 1,600-gt Catug is the largest vessel yet built by Halter Marine. The launch also marked the first job for the 4,000-ton-capacity Halter drydock that was used to float the vessel.

The new drydock was built at Halter's Industrial Canal and Chickasaw divisions especially for the Catug program. It will be utilized in ship-repair operations during the two-month spans between Catug launches.

### New Climax Band Saw Cuts Compound Angles— Literature Available

Versatile, compound-angle metal cutting is now possible with the new Climax Anglematic band saw. With a cutting head that tilts from 0 to 90 degrees and a vise that swivels through 75 degrees, the saw will cut nearly any compound angle, simple angle, or make standard vertical cuts. With the head tilted 90 degrees, horizontal slabbing or sectioning cuts can be made. Hydraulic tilt and lift of the cutting head allow quick set-ups.

The Anglematic will handle round stock up to 9 1/2 inches in diameter and rectangular stock up to 9 1/2 by 15 inches. Continuous feed of any length stock is possible with an optional feed table. Blade speed is variable from 100 to 300 fpm, with drive power provided by a 3-hp motor. Stock feed rates are variable from 0 to 5 fpm.

For more information and free literature on the Anglematic band saw, write to **Richard F. Benham**, Dept. M.R., Climax Manufacturing Company, P.O. Box 230, Newberg, Ore. 97132.

### Energy-Conserving Flow Meter To Be Marketed By Gems Sensors

Gems Sensors Division of Transamerica Delaval Inc. has acquired exclusive rights to develop and market a new line of liquid flow meters, it was announced by **Milton Aron**, general manager of the Farmington, Conn.-based level and flow switch manufacturer.

The energy-saving flow meters work on a "fluid conservation through measurement" principle, according to **Dan Sabatino**, flow meter inventor and patent holder who is working as part of the research, development, and engineering team at Gems. The flow meter is designed for "slow" flow applications from 1/100 gallon up to 300 gallons per hour. Unlike analog devices, it operates on a

constant digital pulse output, Mr. **Sabatino** added.

"We have already started preparing prototypes for various markets in preparation for product introduction later this year," Mr. **Aron** stated.

Preliminary inquiries should be addressed to **Milton Aron**, Gems Sensors Division of Transamerica Delaval Inc., Dept. MR, Farmington Industrial Park, Farmington, Conn. 06032.



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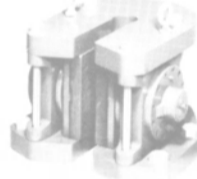
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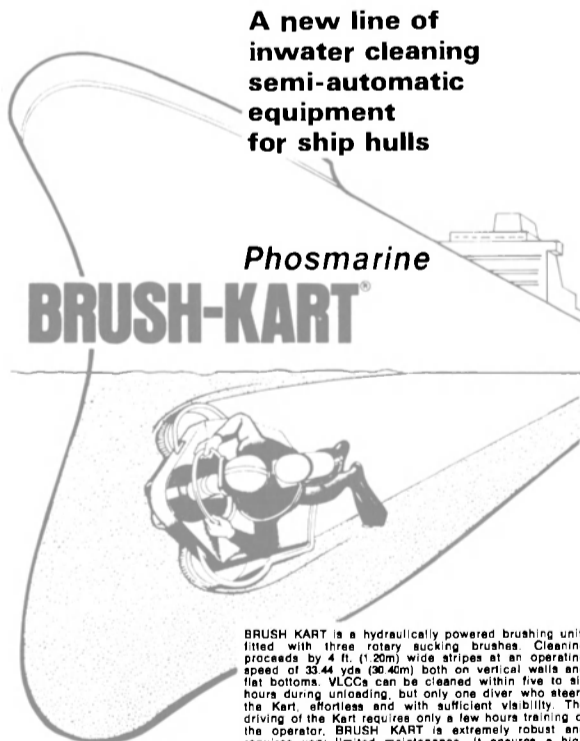
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**PSI To Furnish Steering Gear For Ogden Product Carriers At Avondale**

Propulsion Systems, Inc., Kent, Wash., has been awarded a contract to furnish PSI/Frydenbo rotary-vane steering gear for two product carriers being built by Avondale Shipyards for Ogden Marine, Inc.

The use of the PSI/Frydenbo

rotary vane steering gear is becoming popular among owners and shipyards due to the advantages of low pressure hydraulics in combination with simple, compact design.

The ever-increasing concern over the latest USCG and IMCO requirements has spurred the move to rotary-vane steering gear for product carriers and tankers due to the safety features inherent to the PSI/Frydenbo design.

Lockvalves that prevent fluid loss from the actuator in the event of a ruptured pipeline are furnished as standard equipment. Dual independent power units are also provided, each capable of moving the rudder at a rate not less than 2-1/3 degrees per second.

More than 265 PSI/Frydenbo rotary vane steering gear units have been supplied on various

types of vessels in the United States, as well as some 6,000 units worldwide.

**New Joint Venture Firm Formed By Sub-Sea Systems And John Brown**

Sub-Sea Systems has announced the formation of a new joint venture company headquartered in Houston. SUBMAR, Inc. is owned jointly by Sub-Sea Systems of Escondido, Calif., and John Brown and Company, Ltd. of London, England, through its subsidiary, UDI Group, Ltd. of Aberdeen, Scotland.

SUBMAR will provide technical services, field repair, local parts stock, equipment for leasing, and sales support for Sub-Seas's underwater television and hardwire diver communications equipment, plus UDI's sonar, and wireless communications equipment.

Richard D. Jones has been named vice president and general manager of SUBMAR. He brings to the organization extensive experience in offshore instrumentation and monitoring equipment, engineering and management, and an understanding of commercial diving and support industries. He will head a broad-based technically oriented organization to support the offshore industry.

SUBMAR has begun operations at 5151 Mitchelldale, Suite A-2, Houston, Texas 77092; telephone (713) 688-6228.

**Sea Cushion Fenders Installed At Blount Island Terminal**

The Port of Jacksonville has installed twenty 6 by 12-foot Sea Cushion® fenders at the Blount Island container terminal in Jacksonville, Fla. The fenders cover about 1,800 feet at the two containership berths on the pier, and are installed along the dock face as a permanent part of the docking facility. They provide increased standoff and greater protection for the jetty and the vessels it serves than did the fendering originally installed at the terminal when it was constructed.

The Jacksonville Port Authority was looking for fenders with "properties of low maintenance, long life, and durable design." They found that Seaward International's Sea Cushion fenders offered these qualities.

A 1,200-foot wharf addition is being designed for the Blount Island facility, and Sea Cushions are also the favored fendering system for the face of this new wharf.

Sea Cushion fenders are available in sizes to fit all dock and ship-to-ship applications. For additional information on these fenders, write to **Sidney H. Shaw**, Dept. MR, Seaward International, Inc. 6269 Leesburg Pike, Falls Church, Va. 22044.

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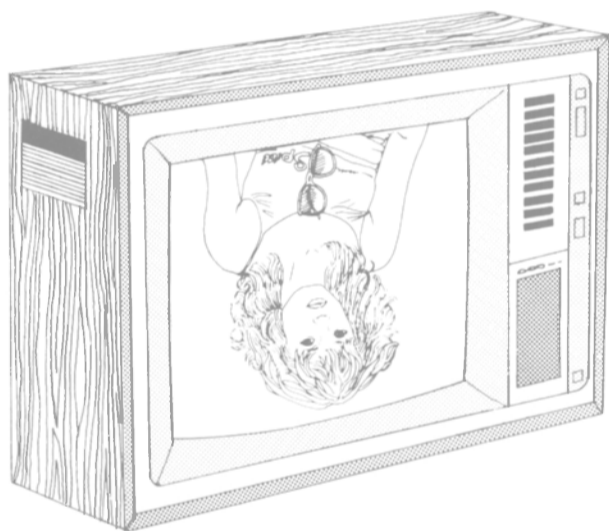
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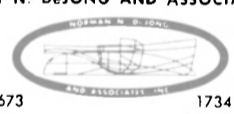
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
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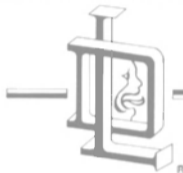
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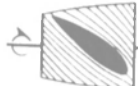
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## Campbell Launches Another GM-Powered Superseiner

Campbell Industries of San Diego recently launched another tuna superseiner in its current series. The 1,200-ton-capacity Coopeatun II was built for Cooperativa de Pescadores del Pacifico, R.L. of Puntarenas, Costa Rica, and will be skippered by longtime tuna-fishing veteran **Tim Tafova**.

True to his promise to continually update Campbell vessels, president **Peter G. Schmidt** pointed out some arrangement modifications made aboard the Coopeatun II. The more important revisions involve the relocation of upper engine room elements, including the hydraulic power pack and refrigeration compressors. "These are very practical changes," Mr. Schmidt said, "primarily because they result in more efficient piping systems that are more readily installed and serviced."

Provisions have also been made for future helicopter operations and the installation of scanning sonar, though such items will not be part of the ship's gear when she first sails in early September. Additionally, the Coopeatun II is the first Campbell seiner to carry a MARCO 350-hp bow thruster. The unit is driven by a Caterpillar 3406TA diesel.

The Coopeatun II is 221 feet 5 inches long with a beam of 40 feet 3 inches and a depth of 26 feet 10 inches. She will cruise at about 16 knots with power provided by a General Motors EMD 20-645-E7B diesel rated at 3,600 bhp at 900 rpm. The main engine drives a five-bladed stainless-steel Coolidge propeller through a Falk reduction and reversing gear at a shaft speed of 179 rpm.

Auxiliary power comes from four Cater-



Superseiner Coopeatun II was launched recently at San Diego yard of Campbell Industries. Propulsion power is provided by General Motors EMD 3,600-bhp engine; auxiliary power comes from four Caterpillar diesels.

pillar D353TA diesels, three of which drive KATO 300-kw 440-volt generators. The fourth unit drives the fishing machinery through a MARCO HPD pump drive unit, with backup power provided by another MARCO HPD coupled to one of the generator drive sets.

The Coopeatun II will be fully outfitted

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to fish the world's oceans, featuring MARCO fish deck machinery highlighted by the WS-444 purse seine winch with independent drum drive. On a previous Campbell tuna superseiner, this model winch pursued a 750-fathom net in 12 minutes 35 seconds. Also provided by MARCO are a 56-inch Puretic Power Block, power block inhaul winch, anchor winch, brailing winch, corkline winch, and main boom topping winches. Main boom vang winches are by Gearmatic.

In keeping with her up-to-date refinements, the Coopeatun II carries a full complement of today's complex electronics and navigational aids. There are two radars, a depth sounder, weather facsimile system, and an ADF, all by Furuno, along with Sperry's gyrocompass, autopilot, and 8T magnetic autopilot.

The ship also carries a Magnavox satellite navigation system and a wide variety of communication sets and related equipment.

#### Four Key Marketing Executives Promoted At Bath Iron Works

President **John F. Sullivan Jr.** of Bath Iron Works has announced four key appointments in marketing to accomplish the shipyard's new-business objectives in naval and merchant ship construction and overhauls.

**Richard W. Thorpe Jr.** was promoted to assistant to the vice president-marketing; **Gordon H. Falt Jr.** to manager-overhaul marketing; **Roy L. Reed Jr.** to manager-commercial marketing; and **Edward J. Tremblay** to manager-Navy marketing.



Richard W. Thorpe Jr.



Gordon H. Falt Jr.

Mr. **Thorpe** has been with Bath Iron Works since 1965 in positions ranging from Navy ship contract administration to corporate long-range planning. Also, he was recently elected to a two-year term as chairman of the Commercial Shipbuilding Committee of the Shipbuilders Council of America.

Mr. **Falt** has been employed at BIW for more than 20 years. Prior to assuming his



September 1, 1980

new post, he served as assistant marine marketing manager. His previous positions include chief engineer, production and facilities manager, industrial program manager, and Harding Plant manager.

Mr. **Reed** served as purchasing manager for three years before his recent appointment. He has been employed at BIW for 15 years, starting as a buyer-engineer. During that time, he has served as a subcontract supervisor, planning superintendent-material, and general materials purchasing superintendent.

Mr. **Tremblay**, who has been at Bath Iron Works since 1958, was manager of quality assurance for the shipyard before being named manager-Navy marketing. In his new capacity, he will be responsible for all activities relating to new naval shipbuilding



Roy L. Reed Jr.



Edward J. Tremblay

programs. Previously, Mr. **Tremblay** has served as a yard superintendent, responsible for electrical, electronics and weapons systems.

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## Keel Laid At Sun Ship For Second Waterman RO/RO Ship



Shown at recent keel-laying ceremony at Sun Ship are (L to R): Robert Campbell, president, Sun Ship; William Harrison, marine superintendent, Waterman Steamship Corporation; Edward Walsh, president, Waterman Steamship, and Joseph Kleschick, vice president-marketing, Sun Ship.

The keel of the Thomas Heyward, the second in a series of three combination roll-on/roll-off (RO/RO) container vessels being constructed by Sun Ship, Inc. for Waterman Steamship Corporation, was lowered into place during a brief ceremony at the Chester, Pa., yard recently.

The design of the Waterman vessels provides for transporting wheeled vehicles and containers as well as unitized and palletized cargoes. A modification of this design is currently under consideration as a part of the Rapid Deployment Force (RDF).

The ship is equipped with a

full-slewing ramp on the stern, a side cargo port, plus a self-sustaining container crane, for ease of cargo loading and discharge.

Sun Ship is a world leader in the design and construction of RO/RO-type ships. They pioneered the RO/RO concept and built the first large-scale version in 1968.

Sun has delivered 10 RO/RO ships, all of which are in service today—two in the Alaska/Pacific Northwest trade, several in use on the Hawaii-San Francisco route, and the balance in service between Puerto Rico, Florida, and Mid-Atlantic States.



Passenger vessel Island Queen V was placed in service recently by 30,000 Island Cruise Line of Parry Sound, Ontario. Caterpillar-powered tour boat carries 592 passengers on three-hour cruise among Georgian Bay islands.

## Hargrave-Designed Tour Boat Delivered By Hike Metal Products

An international effort has produced a luxurious new tour boat for 30,000 Island Cruise Line of Parry Sound, Ontario, Canada. Designed by J.B. Hargrave, Naval Architects, Inc. of West Palm Beach, Fla., and built by Hike Metal Products Ltd. of Wheatley, Ontario, the new Island Queen V has a steel hull and aluminum superstructure.

Designed to carry 592 passengers on three decks, she has a length of 116 feet and a beam of

28 feet, displacing 166 tons. A double chine is incorporated in the hull to maintain stability while reducing the wake to a minimum, allowing the vessel to pass through the many narrow passages and restricted channels in the area without disturbing the shoreline. Skegs are fitted port and starboard to aid in drydocking the vessel with limited facilities.

The vessel is propelled by two Caterpillar 3408 TA diesel engines

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with Caterpillar 7211 reverse-reduction gears. A MARCO T80 hydraulic bow thruster is also fitted, and all are controlled by Kobelt pneumatic controls. Electrical power is supplied by two Kato generators driven by Caterpillar 3304 engines.

In addition to one open and two enclosed passenger decks, the Island Queen V includes a spacious wheelhouse, owner's lounge, fully equipped snack bar, and four rest rooms. Six-foot-wide aisles, large windows, upholstered seats, and open observation areas forward and aft on each deck contribute to passenger comfort on the three-hour, 12-knot cruise around Parry Island and among many of the 30,000 Islands of Georgian Bay.

The Island Queen V is the third vessel designed by Hargrave for 30,000 Island Cruise Line, joining a 106-foot aluminum vessel carrying 400 passengers and an 88-foot steel vessel carrying 300 passengers. The 88-foot boat, Sea Prince II, was also built by Hike and was placed in service in 1979.

J.B. Hargrave, Naval Architects, Inc. is a naval architecture, marine engineering, and consulting firm located at 205½ Sixth Street, West Palm Beach, Fla. 33401. The firm offers design services for both pleasure boats and commercial vessels.

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**ASNE To Publish  
Index For Naval  
Engineers Journal**

The American Society of Naval Engineers announces the publication of the Naval Engineers Journal Cumulative Index. The Index provides a comprehensive guide to nearly a century of technological information contained in 397 issues of the Journal (1889 through 1979). Anyone in naval, maritime, coastal, or offshore activities will find the Index to be an indispensable research tool.

This bound 700-page volume will be divided into four sections. The heart of the Index cites all Journal articles of enduring technical value. They are arranged in chronological order and highlight

the author, number of pages, and number of references. This section contains abstracts of all articles published since 1950. The next section is an alphabetical listing of articles by subject matter. In addition, there is a section that is an alphabetical listing of articles by author. These sections all contain referential symbols giving cross-reference to the chronological section. Finally, there is a section that will reference Jour-

nal information of historical interest.

Technical articles from future issues of the Journal will regularly be entered into the Maritime Research Information Service, which will maintain a computerized version of the Index. Thus, current information will be continually available to researchers pending future revision of the Index.

The Naval Engineers Journal

Cumulative Index will be available by November of this year. The Index will cost \$40 for ASNE members and \$50 for nonmembers. Orders received from individuals prior to September 1 will enjoy the prepublication rates of \$25 for members and \$35 for nonmembers. Orders should be mailed to the Naval Engineers Journal Cumulative Index, 1012 14th Street, N.W., Suite 807, Washington, D.C. 20005.

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## Belcher Oil's Spill Control Conference To Begin September 30

Government and industry will join forces on October 1 to create an oil spill on the waters of Florida's Cypress Gardens tourist attraction. That's the "bad" news. The good news is that they will clean it right up.

This dramatic exercise in coping with hazardous spills is to be part of the 7th Annual Spillage Control Conference & Workshops, a nonprofit meeting completely underwritten as a public service by Belcher Oil Company of Miami. The conference will be cosponsored by the U.S. Coast Guard 7th District, Region IV of the U.S. Environmental Protection Agency, the Florida De-

partment of Natural Resources, and the Florida Spillage Control Association.

Of course, no petroleum products will actually be spilled. Rather, combinations of shredded paper and colored vegetable oil will simulate the disaster.

Scheduled for September 30 through October 2 at Lake Buena Vista near Orlando, the conference will bring together hundreds of pollution control specialists from throughout the U.S. and abroad, representatives of industry, government, educational, and environmental organizations.

Participants will learn how to prevent all types of oil, chemical and hazardous material spills. They also will be schooled in the latest techniques in spill control and cleanup.

Belcher Oil, a unit of The Coastal Corporation, Houston, has operations from Maine to Florida on the East Coast, around the Gulf of Mexico to Texas and up the Mississippi River to Memphis.

For additional information on the conference, contact **Roger Pynn**, Belcher Oil Company, P.O. Box 52550, Miami, Fla. 33152; (305) 551-5289.

## CMA Line Appoints TTT Ship Agencies As U.S. General Agents

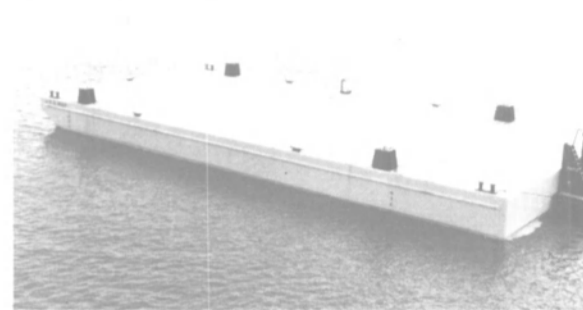
Compagnie Maritime d'Affretement (CMA), New York, has announced the appointment of TTT Ship Agencies, Inc., New York, as their general agents in the United States for its service to Eastern Mediterranean ports.

For the past one and one-half years, CMA has provided an independent liner service from New York, Baltimore, and Charleston to Beirut and Tripoli in Lebanon and Tartous and Lattakia in Syria. CMA also accepts cargo for inland points, with particular emphasis on destinations in Iraq.

**Albert Pritt** of TTT Ship Agencies has been appointed line manager for this service. He has had extensive experience in both the Mediterranean and Near East regions.

## Maxon Marine Delivers Custom-Built River Barges

Fabrication of custom-built marine equipment for three Midwest firms has been completed recently by Maxon Marine Industries, Inc. of Tell City, Ind.



Three identical deck barges (one shown above) were ordered by the J.S. Alberici Construction Company, Inc. of St. Louis. Dimensions of each barge are 110 feet by 52 feet by 7 feet 6 inches. Each is equipped with four spudwells and a fuel tank that meets the U.S. Coast Guard requirements for fuel containment. River service classification of A-1 was awarded to these barges after inspection by the American Bureau of Shipping.

A heavy-duty crane barge, built on speculation, was sold to Greater Cincinnati Marine Service, Cincinnati only one month after its completion. This crane barge, 110 feet by 50 feet by 6 feet 10 inches, provided the newest addition to several Maxon crane barges previously owned by this Ohio firm.

For better service to Ohio River traffic, Norman Wooten, Inc. ordered a dock barge, 200 feet by 50 feet by 7 feet, from Maxon. This barge will be moored upstream from Jeffersonville, Ind., for use as office space, midstream servicing, and supplies. The facility is scheduled for opening in early fall.

Located at Mile 726 on the Ohio River, Maxon Marine Industries maintains an experienced staff in marine design, construction, conversion, and repair.

## Joslin And Schade Promoted To New Positions At Interstate & Ocean Transport

**Stephen A. Van Dyck**, chief operating officer of Interstate and Ocean Transport Company, Philadelphia, recently announced the appointments of **Royal D. Joslin** to the new position of director of bulk transportation, and **William H. Schade** to the newly created position of East Coast chartering manager.



Royal D. Joslin



William H. Schade

Mr. Joslin joined Interstate and Ocean Transport in 1979 as assistant to **James H. Sanborn**, vice president, East Coast Group. He will be responsible for the company's diversification into the tug/barge transportation of dry-bulk commodities, including coal.

Mr. Schade joined Interstate in 1966 as

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**MAERSK GETS SECOND PORTAINER** — Paceco, Inc., a subsidiary of Fruehauf Corporation, recently delivered a Portainer® crane to Maersk Container Service Company at Port Newark, N.J. The shoreside crane, a 45-ton A-frame model, has an articulated boom for stowage in a highly congested air traffic area. The boom, when fully extended in its working position, has an outreach of 113 feet; backreach over the terminal is 30 feet, with a 50-foot span between rails. This is the second Portainer crane installed at Maersk's Port Newark terminal since 1975.

operations coordinator. He will be responsible for chartering, rates, contract administration, and sales in the East Coast Group. Mr. Schade and Mr. Joslin will both report to James H. Sanborn.

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**AGREEMENT REACHED** — Yoshio Sato (right), manager of IHI's Engineering Department, material handling equipment engineering division, shakes hands with Bobby Thompson, president of TBW Industries, Houma, La., after they concluded talks on TBW Industries manufacturing IHI's Mark II Series hydraulic deck machinery. Also on hand was John Hudson, president of TBW's SMATCO International Division.

TBW Industries of Houma, La., announces the signing of a license agreement with Ishikawajima-Harima Heavy Industries Co., Ltd. (IHI) of Tokyo. The announcement was made by Robert M. Thompson, president of TBW Industries, and Yoshio Sato, manager-engineering department, of the Material Handling Equipment Division of IHI.

According to Mr. Thompson, the license covers TBW's manufacture of IHI's Mark II Series electrohydraulic cranes and deck machinery. The equipment is designed for application on commercial maritime vessels and includes cranes from 5 to 80-ton capacities in both single and double configurations. TBW's Smatco plant in Houma will be used as the manufacturing facility. Certain sub-assemblies will be manufactured at other TBW plant locations and shipped to the Houma plant for final assemblies and tests.

It was also revealed that through a second license agreement, TBW will be able to offer IHI's unique low-speed, high-torque hydraulic motors for inclusion into this machinery.

"All products covered under the respective licenses can be produced with 100-percent American content as applicable," Mr. Thompson revealed. "To the best of our knowledge, we are the first U.S. firm to offer complete U.S.-made electrohydraulic deck cranes for the maritime industry."



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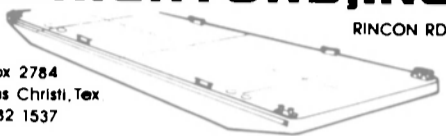
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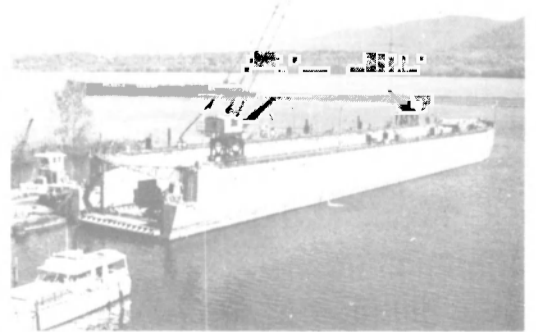
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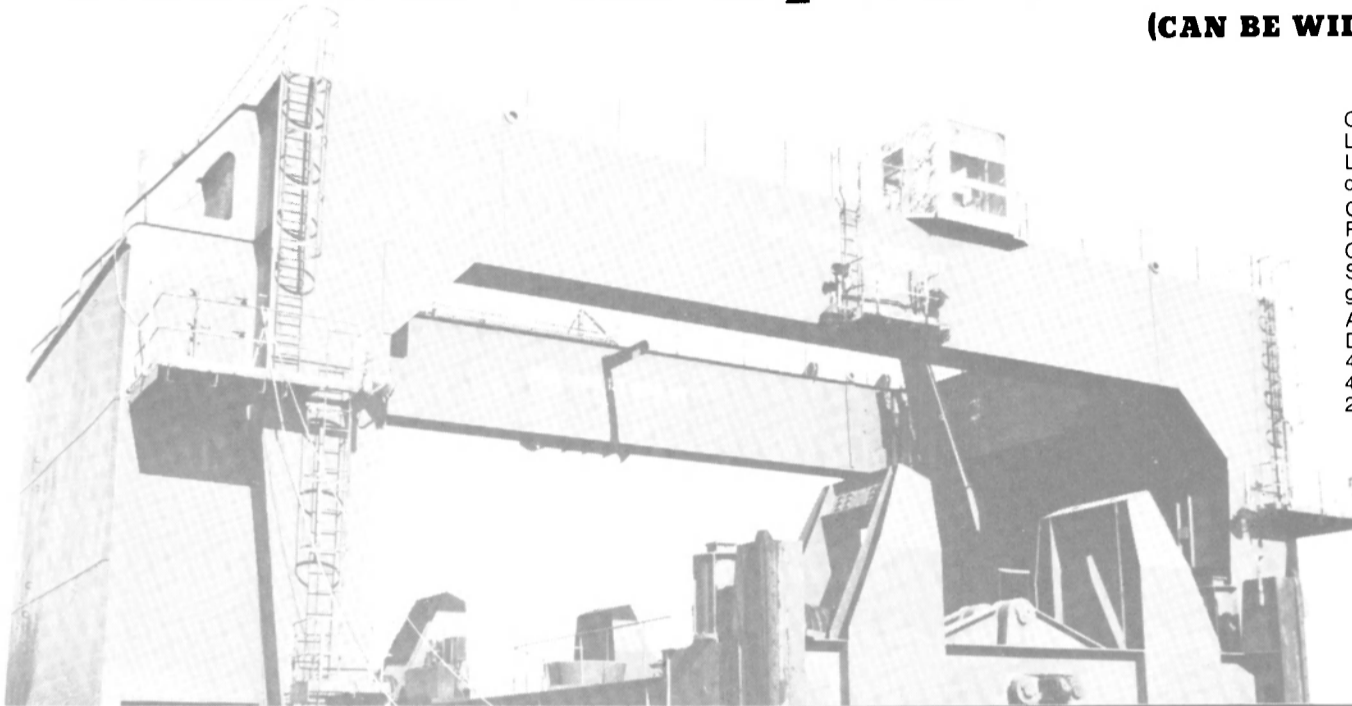


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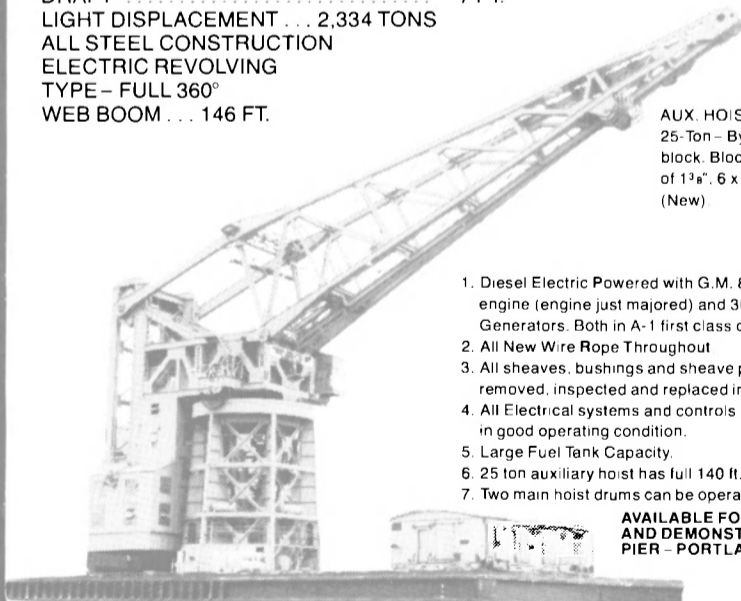
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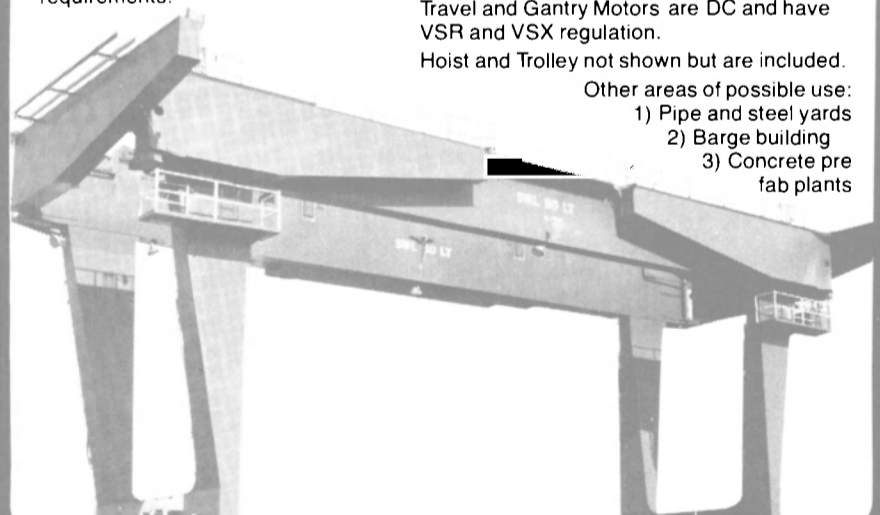
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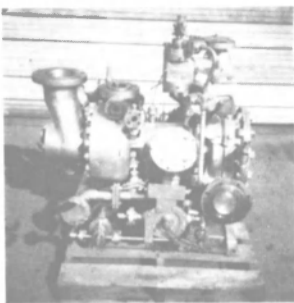


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GPM 280  
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54" X 66" and 54" X 77"  
14 Dog—operated from top side  
by T-Key, with dogs marked to  
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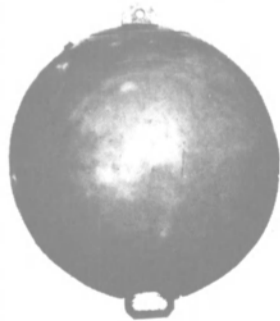
**4-DOG**  
24" X 30"  
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4 Dogs on underside. Top side is flush and dogs are operated with T-Key openers.

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About 58" diam. With tieplates top & bottom. Est. wt 680 lbs each.

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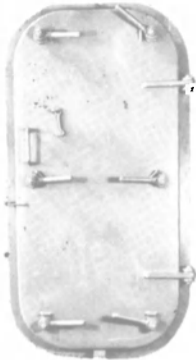
3 Available — 5 ft X 9 ft — with wood bumpers

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NEW WATERTIGHT DOORS**

**Steel Dogs**



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

**SIZE**

26"x48" 26"x66"  
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EACH DOOR

**IMMEDIATE DELIVERY**



**NEW 7" RADIUS  
PANAMA CHOCKS**

(MEET PANAMA REGULATIONS)

14" X 10" CLEAR OPENING

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

**NEW UNUSED 12" X 6 1/2" PANAMA CHOCKS  
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Closed chocks — 12" X 6 1/2" inside opening — 23" overall outside — 8" high — 15" high — 7" radius — weight 110 lbs. IN STOCK.

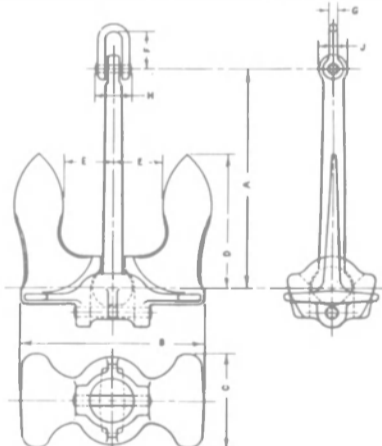
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10 EA. 5" x 15" I.D. STEEL RINGS  
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25 EA. #7 — 17 EA. #5

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1000 WATT  
FLOODLIGHTS**



**NEW — UNUSED**

HEAVY DUTY CAST ALUMINUM marine floodlights—series 48116—ADE 16. U.L. Marine listing 595—also USCG accepted. Mogul base—will handle 1000 watt incandescent or clear metal Halide bulb. Corrosion-resistant—hinged door.

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**FROM OUR QUICK DELIVERY DEPARTMENT**

**FOR T-2 TANKERS**



● Rotors for G.E. 525KW DORV-325M aux. turbo-gen. sets. Also rotors for Westinghouse 538KW turbo-gen. sets.



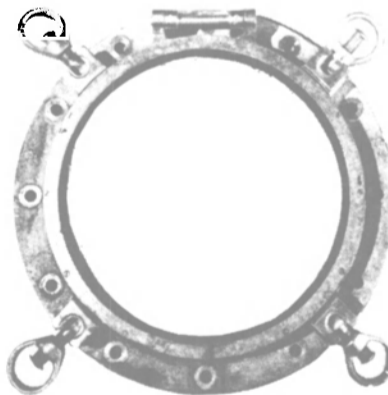
● G.E. Revolving Field — August 1979 Certificate — for immediate delivery

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15 1/2" CLEAR OPENING  
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R.W. Fernstrum & Company, 1716 Eleventh Avenue, Menominee, MI 49858  
James D. Nall Co., Inc., 3195 NW 20th Street, Miami, FL 33142  
York Division (Borg-Warner Corp.), P.O. Box 1592, York, PA 17405

### BEARINGS-Rubber, Metallic, Non-Metallic

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Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309  
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850  
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

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Butterworth Systems Inc., 224 Park Ave., Florham Park, NJ 07932  
GMMC/Porta-Shotblast, 1112 Davidson Road, Nashville, Tenn. 37205

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Combustion Engineering, Inc., Windsor, Connecticut 06095

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Goodyear Aerospace (Industrial Brakes Division), Box 477, Berea, KY 40403

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Crown Assets Disposal Corp., 300 Notre Dame St., Ville St.-Pierre, Quebec, Canada H8R 3Z6  
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Gulf Oil Trading Co., 1290 Ave. of the Americas, N.Y., N.Y. 10019

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Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913  
Megsystems, Inc., 5909 West 130th Street, Cleveland, OH 44130  
Seatronic Engineering & Mfg. Co., 1230 E. Joppa Rd., Towson, MD 21204  
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.  
Transamerica Delaval, Inc., Gem Sensors Div., Spring Lane, Farmington, CT 06032

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### DECK MACHINERY-Cargo Handling Equipment

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

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General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, Massachusetts 02360

Golten Marine Company, Inc., 162 Van Brunt Street, Brooklyn, NY 11231

Teledyne Metal Finishers, 1725 East 27th Street, Cleveland, OH 44114

Teledyne Metal Finishers, 3125 Brinkerhoff Road, Kansas City, KS 66115

Twin Disc, Incorporated, Racine, Wis. 53403

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Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014

Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014

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

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

Baldi, Inc., P.O. Box 350, Chester, PA 19016

Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014

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

J. H. Menge & Company, Inc., P. O. Box 23602, New Orleans, La. Rockwell International, Power Tool Division, 400 N. Lexington Ave., Pittsburgh, PA 15208

Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080

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

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

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Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850

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

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General Electric Credit Corp., P.O. Box 8300, Stamford, Conn. 06904

Greyhound Leasing & Financial Co., Greyhound Tower, Phoenix, AZ 85077

Kidder, Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005

Salomon Brothers, One New York Plaza, New York, N.Y. 10004

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

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IDT Corp. (Intersystems Design & Technology Corp.), P.O. Box 1590, Summerville, S.C. 29483

### GANGWAYS

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

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

Julius Mock & Sons, Inc., 20 Vesey St., New York, NY 10017

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Phosmarin Equipment (Phoceeone Sous-Marine S.A.), 21 Boulevard de Paris, 13002 Marseille, France

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Fredriksstad mek. Verksted, N. American Agents, American United Marine Corp., 575 Madison Ave., New York, N.Y. 10022

### INFORMATION-Marine

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Dupont Company, Nemours Bldg. RM C31H6, Centre Rd. Bldg., Wilmington, DE 19898

IDT Corp. (Intersystems Design & Technology Corp.), P.O. Box 1590, Summerville, S.C. 29483

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Adams & Porter, 5 World Trade Center, Suite 6433, New York, N.Y. 10048

Alexander & Alexander, Inc., 1185 Ave. of the Americas, New York, N.Y. 10036

Midland Insurance Co., 160 Water St., New York, N.Y. 10038

Whitehall Brokerage, Inc., 17 Battery Place, New York, NY 10004

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### LIGHTING EQUIPMENT-Lamps, Fixtures, Searchlights

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Oceanic Electrical Mfg. Co., 157 Perry Street, New York, N.Y. 10014

Oreck Corp., 100 Plantation Rd., New Orleans, LA 70123

Perko Inc., P.O. Box 6400D, Miami, Florida 33164

Phoenix Products Company, 4785 North 27th Street, Milwaukee, WI 53209

Port Electric Supply Corp., 157 Perry Street, New York, N.Y. 10014

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General Electric Company - Bldg. 2, Rm 216, Schenectady, N.Y. 12345

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American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004

Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015

Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026

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

Designers & Planners Inc., One State Street Plaza, New York, N.Y. 10004

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Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050

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Phillip Gresser Associates, Ltd., 3250 South Ocean Blvd., Palm Beach, FL 33480

Morris Guralnick Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107

Hampton Roads Engineering, Inc., 119 E. Little Creek Rd., Norfolk, VA 23505

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Jantzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227

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George E. Meese, 194 Acton Rd., Annapolis, Md. 21403

Metritape, Inc., 33 Bradford Street, Concord, MA 01742

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Nickum & Spaulding Associates, Inc., 911 Western Ave., Seattle, WA 98104

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and 657 Mission St., San Francisco, Calif.

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Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426

George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007

T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2

R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235

Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963

Thames Engineering Consultants Inc., P.O. Box 589, New London, Ct. 06320

Timisco, 622 Azalea Road, Mobile, AL 36609

Corning Townsend III, 18 Church St., Georgetown, CT 06829

Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706

Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N.Y. 10016

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XPLO Corporation, 229 Fifth Street, Gretna, LA 70053

### NAVIGATION & COMMUNICATIONS EQUIPMENT

American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526

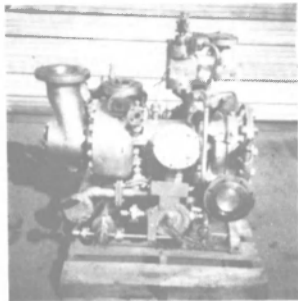
Collins Marine Corp., Pier 32, San Francisco, CA 94105

Communication Associates, Inc., 200 McKay Road, Huntington Station, N.Y. 11746

Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024

**PACIFIC TYPE TBA-12  
BOILER FEED STEAM TURBO PUMP**

GPM 280  
PSIG 575 inlet (555')  
Steam inlet 425/740°  
F/15 EXH  
BHP 139  
Trip throttle valve  
Woodward PG governor



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"If you can draw it", "We can make it"

"We weld everything, but a broken heart"

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5000 2nd St., Long Island City, N.Y. 11101

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PIPE • VALVES • FITTINGS • FLANGES

**NEW — UNUSED  
FLUSH HATCHES**

**14-DOG**

54" X 66" and 54" X 77"  
14 Dog—operated from top side  
by T-Key, with dogs marked to  
show open & closed positions.



**4-DOG**

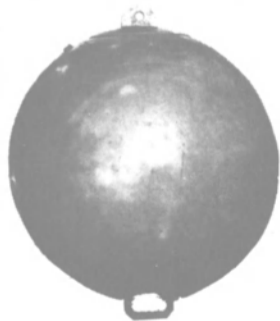
24" X 30"  
and  
30" X 30"



4 Dogs on underside. Top side is flush and dogs are  
operated with T-Key openers.

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
Marine Warehouse (301) 752-1077



**NEW — UNUSED  
SPHERICAL  
MOORING  
BUOYS**

About 58" diam. With  
tieplates top & bottom.  
Est. wt 680 lbs each.

**CYLINDRICAL BUOYS**

3 Available—5 ft X 9 ft—with wood bumpers

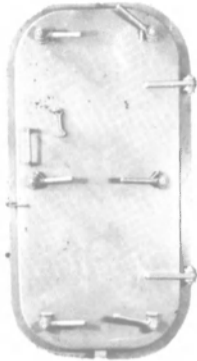
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Marine Warehouse (301) 752-1077

**FOR SALE**

**NEW WATERTIGHT DOORS**

Steel Dogs



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

SIZE

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

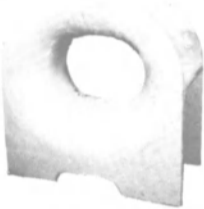
EACH DOOR

**IMMEDIATE DELIVERY**

**NEW 7" RADIUS  
PANAMA CHOCKS**

(MEET PANAMA REGULATIONS)

14" X 10" CLEAR OPENING



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

**NEW UNUSED 12" X 6 1/2" PANAMA CHOCKS**

FOR SMALL VESSELS



Closed chocks—12" X 6 1/2" in-  
side opening—23" overall out-  
side—8" high—15" high—7"  
radius—weight 110 lbs. IN  
STOCK.

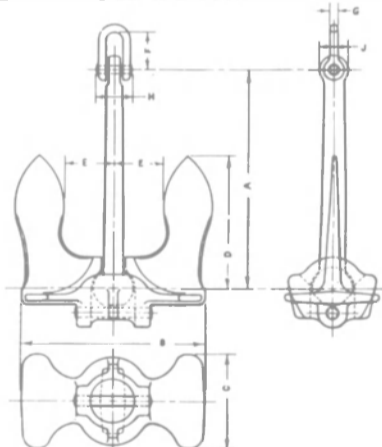
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**ANCHORS — CHAIN**

DETACHABLE LINKS

PEAR-SHAPED DETACHABLE LINKS



**LARGE BALDT-TYPE ANCHORS**

16000 LBS/12000 LBS/8000 LBS/3000 LBS

10 EA. 5" x 15" I.D. STEEL RINGS

3 EA. R.P. ANCHOR SHAX 3 7/8" STK, 3 7/8" PIN

**NEW CHAIN**

10 X 90 Ft. 3" DILOK CHAIN — ABS

9 X 90 Ft. 2" DILOK CHAIN — ABS

**NEW SWIVELS**

3 EA. 2 3/8" — 3" E&E SWIVELS

13 EA. 3 1/8" DETACHABLE LINKS

PEARSHAPED DETACHABLE LINKS

25 EA. #7 — 17 EA. #5

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**CROUSE HINDS**

**1000 WATT  
FLOODLIGHTS**



**NEW — UNUSED**

HEAVY DUTY CAST ALUMINUM  
marine floodlights—series 48116—  
ADE 16. U.L. Marine listing 595—  
also USCG accepted. Mogul base  
—will handle 1000 watt incandes-  
cent or clear metal Halide bulb.  
Corrosion-resistant—hinged door.

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FROM OUR QUICK DELIVERY DEPARTMENT

**FOR T-2 TANKERS**



• Rotors for G.E. 525KW DORV-325M aux.  
turbo-gen. sets. Also rotors for Westinghouse  
538KW turbo-gen. sets.



• G.E. Revolving Field — August 1979 Cer-  
tificate — for immediate delivery

• 1 Main circulating pump — complete —  
Ingersoll-Rand 24CVM. New certif. 1979 —  
completely rebuilt.

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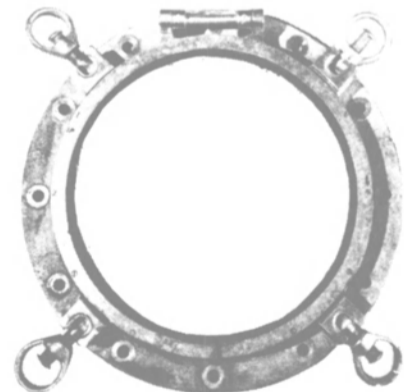
**15 1/2" & 16" CLEAN BRASS**

4-DOG MARINE

**PORTLIGHTS**

15 1/2" CLEAR OPENING

16" CLEAR OPENING



Recently carefully hand removed from ocean vessels.  
Suitable for re-use on shipyard conversions or for ma-  
rine ornamental use. Heavy marine standard glass . . .  
clear or can be furnished frosted for use in special loca-  
tions.

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# BUYERS DIRECTORY

## AIR CONDITIONING AND REFRIGERATION—REPAIR & INSTALLATION

Adrick Cooling Corp., 30 B. Remington Blvd., Ronkonkoma, N.Y. 11779  
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231  
R.W. Fernstrom & Company, 1716 Eleventh Avenue, Menominee, MI 49858  
James D. Nall Co., Inc., 3195 NW 20th Street, Miami, FL 33142  
York Division (Borg-Warner Corp.), P.O. Box 1592, York, PA 17405

## BEARINGS—Rubber, Metallic, Non-Metallic

Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062  
Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309  
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850  
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

## BLASTING—Cleaning—Equipment

Butterworth Systems Inc., 224 Park Ave., Florham Park, NJ 07932  
GMMC/Porta-Shotblast, 1112 Davidson Road, Nashville, Tenn. 37205

## BOILERS—Tube Cleaning

Combustion Engineering, Inc., Windsor, Connecticut 06095

## BRAKES

Goodyear Aerospace (Industrial Brakes Division), Box 477, Berea, KY 40403

## BROKERS

Capt. Astad Company, Inc., P.O. Box 53434, New Orleans, La. 70153  
Crown Assets Disposal Corp., 300 Notre Dame St., Ville St.-Pierre, Quebec, Canada H8R 3Z6  
Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004  
Mowbray's Tug and Barge Sales Corp., 21 West St., N.Y., N.Y. 10006  
Max Rouse & Sons, Inc., P.O. Box 5250, Beverly Hills, CA 90213

## BUNKERING SERVICE

Belcher Company of New York, Inc., 48-02 54th Avenue, Maspeth, NY 11378  
Gulf Oil Trading Co., 1290 Ave. of the Americas, N.Y., N.Y. 10019

## CARGO TRANSFER & ACCESS EQUIPMENT

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

## CHOCKING SYSTEMS

Philadelphia Resins Corp., 20 Commerce Drive, Montgomeryville, Pa. 18936

## CLOCKS

Wempe Chronometerwerke Germany, Stubbenhuk 25 2000 Hamburg 11, Germany

## COILS—Cooling, Heating, Ventilating

Colmac Coil, Inc., Colville, Wash. 99114

## CONTAINERS—Cargo Container Handling

Paccoco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

## CONTROL SYSTEMS—Monitoring

Arnesen Marine Systems, Inc., One Battery Plaza, New York, NY 10004  
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913  
Megastystems, Inc., 5909 West 130th Street, Cleveland, OH 44130  
Seatron Engineering & Mfg. Co., 1230 E. Joppa Rd., Towson, MD 21204  
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.  
Transamerica Delaval, Inc., Gem Sensors Div., Spring Lane, Farmington, CT 06032

## COUPLINGS

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

## CRANES—HOISTS—DERRICKS—WHIRLEYS

Clyde Iron, a unit of AMCA International Corp., Suite 102, 2300 West Loop South, Houston, TX 77027  
M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07087  
J. D. Neuhaus, Witten-Heven, Hebezeuge, D 5810 Witten-Heven, West Germany  
Paccoco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

## DECK MACHINERY—Cargo Handling Equipment

Appleton Machine Co., Marine Division, 618 S. Oneida St., Appleton, WI 54911  
Markey Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134

## DIESEL ACCESSORIES—CYLINDER LINERS

B & W Marine Service, One State Street Plaza, New York, N.Y. 10004  
General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, Massachusetts 02360  
Goltan Marine Company, Inc., 162 Van Brunt Street, Brooklyn, NY 11231  
Teledyne Metal Finishers, 1725 East 27th Street, Cleveland, OH 44114  
Teledyne Metal Finishers, 3125 Brinkerhoff Road, Kansas City, KS 66115  
Twin Disc, Incorporated, Racine, Wis. 53403

## DOORS—Watertight—Joiner

Walz & Krenzer Inc., 400 Trabold Road, Rochester, N.Y. 14624

## DRAFTING EQUIPMENT

AM Bruning, 1834 Walden Office Square, Schaumburg, IL 60196

## ELECTRICAL EQUIPMENT

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

## EQUIPMENT—Marine

ATCO Marine Corp., 603 Dean Street, Brooklyn, NY 11238  
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013  
Baldt, Inc., P.O. Box 350, Chester, PA 19016  
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014  
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550  
J. H. Menge & Company, Inc., P. O. Box 23602, New Orleans, La.  
Rockwell International, Power Tool Division, 400 N. Lexington Ave., Pittsburgh, PA 15208  
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080  
Schwepper Beschlag GmbH, Postfach 101110, 5620 Velbert 1, West Germany  
Sudoimport, 5 Kalyaevskaya, Moscow K-6, USSR  
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

## EVAPORATORS

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

## EXPANDED METALS

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

## FANS—VENTILATORS—BLOWERS—HEATEXCHANGERS

Coolmar Heatexchangers B.V., P.O. Box 54156 3008 JD Rotterdam, (The Netherlands) Waalhaven Z.Z. 52  
Hartzell Propeller Fan Company, 901 S. Downing Street, Piqua, OH 45356

Joy Manufacturing Co., 338 So. Broadway, New Philadelphia, Ohio 44663  
Zidell Explorations, 3121 S.W. Moody St., Portland, Ore. 97201

## FENDERING SYSTEMS—Dock & Vessel

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

## FINANCING—Leasing

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

## FITTINGS & HARDWARE

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

## FURNITURE

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

## GANGWAYS

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

## HATCH & DECK COVERS—Chain Pipe

Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207  
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016  
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696  
Julius Mock & Sons, Inc., 20 Vesey St., New York, NY 10017

## HULL CLEANING

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

## HYDRAULICS

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

## INERT GAS—Generators—Systems

Comar Corporation, P.O. Box 460, Worcester, MA 01613  
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039  
Fredrikstad mek. Verksted, N. American Agents, American United Marine Corp., 575 Madison Ave., New York, N.Y. 10022

## INFORMATION—Marine

Maritime Data Network, 300 Broad Street, Stamford, CT 06901

## INSULATION—Cloth, Fiberglass

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

## INSURANCE

Adams & Porter, 1819 St. James Place, Houston, Texas 77027  
Adams & Porter, 5 World Trade Center, Suite 6433, New York, N.Y. 10048  
Alexander & Alexander, Inc., 1185 Ave. of the Americas, New York, N.Y. 10036  
Midland Insurance Co., 160 Water St., New York, N.Y. 10038  
Whitehall Brokerage, Inc., 17 Battery Place, New York, NY 10004

## KEEL COOLERS

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

## LADDERS

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

## LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights

ACR Electronics, Inc., 10-99 3901 North 29th Avenue, Hollywood, FL 33020  
Oceanic Electrical Mfg. Co., 157 Perry Street, New York, N.Y. 10014  
Oreck Corp., 100 Plantation Rd., New Orleans, LA 70123  
Perko Inc., P.O. Box 6400D, Miami, Florida 33164  
Phoenix Products Company, 4785 North 27th Street, Milwaukee, WI 53209  
Port Electric Supply Corp., 157 Perry Street, New York, N.Y. 10014

## LNG CONTAINMENT

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

## LUMBER

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

## MACHINE TOOLS

Climax Manufacturing Company, P.O. Box 230, Newberg, OR 97132

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

## MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING

A.L. Burbank & Co., Ltd., Marine Thermotest Dept., One World Trade Center, Suite 2811, New York, NY 10048  
General Electric Company—Bldg. 2, Rm 216, Schenectady, N.Y. 12345  
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080

## MOORING SYSTEMS

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

## NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS

Advanced Marine Enterprises, Inc., Suite 500, 2341 Jefferson Davis Highway, Arlington, Va. 22202  
Agemar, Avenida 3E No. 71-51, Edif. Acuario (Planta Baja) Apartado 1465, Maracaibo, Venezuela  
American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004  
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015  
J.L. Bludworth, P.O. Box 2441, Corpus Christi, TX 78403  
Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130  
CCS Marine Associates Ltd., 2784 Crescentview Drive, N. Vancouver, B.C. Canada V7R2V1  
C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd., Jacksonville, Florida 32211  
CTS & Associates, 11320 S.W. 108 Court, Miami, Fla. 33176  
CADCOM, 107 Ridgely Ave., Annapolis, MD 21401  
Childs Engineering Corp., Box 333, Medfield, Mass. 02052  
John P. Colletti & Associates, P.O. Box 13378, Pittsburgh, PA 15243  
Columbia-Sentinel Engineers Western, Inc., P.O. Box 21542, Seattle, WA 98111

Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026

Crane Consultants Inc., 15301 1st Ave., So. Seattle, Washington 98148

C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048

Norman N. DeJong & Associates, Inc., 1734 Emerson St., Jacksonville, Fla. 32207

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

Designers & Planners Inc., One State Street Plaza, New York, N.Y. 10004

Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034

Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050

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

Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006

John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110

L.R. Glisten & Associates, Inc., 610 Colman Bldg., 811 First Ave., Seattle, Wash. 98104

Phillip Gresser Associates, Ltd., 3250 South Ocean Blvd., Palm Beach, FL 33480

Morris Guralnick Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107

Hampton Roads Engineering, Inc., 119 E. Little Creek Rd., Norfolk, VA 23505

J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048

Hydraulics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810

Jantzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227

James S. Kroger & Co., Inc., 3333 Rice St., Miami, Fla. 33133

Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460

Lucander Designs, P.O. Box 711, San Perla, TX 78590

Alan C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063

John J. McMullen Associates, Inc., 1 World Trade Center, New York, N.Y. 10048

MacLear & Harris, Inc., 28 West 44 Street, New York, N.Y. 10036

Marine Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114

Marine Design Inc., 401 Broad Hollow Road, Rte. 110, Melville, N.Y. 11746

Marine Technical Associates, Inc., 195 Paterson Avenue, Little Falls, NJ 07424

Maritime Service Company, 1357 Rosecrans St., Suite B, San Diego, CA 92106

Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225

Mechanical Resources Inc., 191 Cambridge Avenue, Jersey City, N.J. 07307

George E. Meese, 194 Acton Rd., Annapolis, Md. 21403

Metritape, Inc., 33 Bradford Street, Concord, MA 01742

Nelson & Associates, Inc., 1405 N.W. 167th Street, Miami, FL 33169

Nickum & Spaulding Associates, Inc., 911 Western Ave., Seattle, WA 98104

Robert B. Niederberger, P.E., 507 Evergreen Road, Severna Park, MD 21146

Norgard and Clark, 114 Sansome St., San Francisco, CA 94104

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 SW 57th Ave., Fort Lauderdale, Fla. 33317

M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013 and 657 Mission St., San Francisco, Calif.

Sargent & Herkes, Inc., 611 Gravier St., New Orleans, La. 70130

Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316

Seacor Systems Engineering Associates, Corp., P.O. Box 2030, 19 Cherry Hill Industrial Park, Perina Blvd., Cherry Hill, NJ 08003

Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426

George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007

T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2

R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235

Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963

Thames Engineering Consultants Inc., P.O. Box 589, New London, Ct. 06320

Timco, 622 Azalea Road, Mobile, AL 36609

Corning Townsend III, 18 Church St., Georgetown, CT 06829

Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706

Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N.Y. 10016

Thomas B. Wilson, 920 North Avalon Blvd., Wilmington, CA 90744

XPLO Corporation, 229 Fifth Street, Gretna, LA 70053

## NAVIGATION & COMMUNICATIONS EQUIPMENT

American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526

Collins Marine Corp., Pier 32, San Francisco, CA 94105

Communication Associates, Inc., 200 McKay Road, Huntington Station, N.Y. 11746

Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024

Dantronics Co., P. O. Box 673, Rye, NY 10580

Electro-Nav, Inc., 1201 Corbin St., Elizabeth Marine Terminal, Elizabeth, N.J. 07201

EPSCO, Inc., 411 Providence Highway, Westwood, Mass. 02090

Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080

Galbraith Pilot Marine Division, 166 National Road, Edison, NJ 08817

Harris Communications, RF Communications Division, 1680 University Avenue, Rochester, NY 14610

Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913

Hose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631

ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611

Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780

Iatron Corp., 5 Alfred Circle, Bedford, MA 01730

Krupp Atlas-Elektronik, 550 Mamaronck Avenue, Harrison, NY 10528

Maritel, Inc., 139 Old Solomon's Island Road, Annapolis, MD 21401

Nav-Com, Inc., 711 Grand Blvd., Deer Park, NY 11729

Navidyne Corp., 11824 Fishing Point Drive, Newport News, VA 23606

Navigation Communications Systems, Inc., 20100 Plummer Street, Chatsworth, CA 91311

North American Philips Communication Corp., 91 Mckee Road, Mahwah, N.J. 07430

RCA Service Co., Building 204-2, Camden, N.J. 08101

Radar Devices, Inc., 2955 Merced Street, San Leandro, CA 94577

Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103

Raytheon Ocean Systems Company, Westminster Park, Risho Avenue, East Providence, RI 02914

Rockwell International, Collins Telecommunications Products Division, Cedar Rapids, IA 52406



Simrad Inc., 1 Labriola Court, Armonk, N.Y. 10504  
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of  
Sperry Rand Corp.  
Texas Instruments Inc., P.O. Box 226080, M/S 3107, Dallas, TX  
75265  
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin,  
Texas 78721

#### OILS—Marine—Additives

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

#### OIL/WATER SEPARATORS

Alfa-Laval, Inc., 2115 Lindwood Avenue, Ft. Lee, NJ 07024  
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932

#### PAINTS—COATINGS—CORROSION CONTROL

Belzona Molecular Metallife Inc., 224 7th Street, Garden City, NY  
11530  
"CONSOL" manufactured by Hanline Bros., Inc., 1400 Warner St.,  
Baltimore, MD 21230  
Devoe Marine Coatings Co., P.O. Box 7600 Louisville, KY 40207  
Eureka Chemical Company, 234 Lawrence Ave., So. San Francisco,  
CA 94080  
International Paint Co., 17 Battery Place North, Suite 1150,  
New York, N.Y. 10004  
Kaiser Aluminum & Chemical Corp., 300 Lakeside Drive (Room  
1139KB) Oakland, CA 94643  
Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O.  
Box 250, Edison, N.J. 08817  
The Skybryte Co., 3125 Perkins Ave., Cleveland, OH 44114

#### PETROLEUM SUPPLIES

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

#### PIPE—HOSE—Cargo Transfer, Clamps, Couplings

Camlock Flange Sales Corp., 449 Sheridan Blvd., Inwood, L.I.,  
N.Y. 11696  
Hydro-Craft, Inc., 4223 Edgeland, Royal Oak, Mich. 48073  
Kubota, Ltd., 22, Funade-cho 2-chome, Naniwa-Ku, Osaka, Japan  
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken,  
N.J. 07030

#### PLASTICS—Marine Applications

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

#### PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines,

#### Gears, Propellers, Shafts, Turbines

Alco Power Inc., 100 Orchard St., Auburn, N.Y. 13021  
Alstom-Atlantique, 2 quai de Seine, 93203 Saint-Denis, France  
Arma Steel/Advanced Materials Div., 703 Curtis St.,  
Middletown, OH 45043  
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150  
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081  
Burmeister & Wain, One State Street Plaza, New York, N.Y. 10004  
Burmeister & Wain Alpha Diesel AS, DK-1400 Copenhagen K,  
Denmark  
Caterpillar Tractor Company, Engine Division, Peoria, IL 61629  
Calt Industries' Fairbanks Morse Engine Division, Beloit,  
Wisc. 53511  
Combustion Engineering, Inc., Windsor, Connecticut 06095  
Coalgate Propellers, 1601 Fairview Ave. East, Seattle, Wash. 98102  
Electro-Motive Division, General Motors Corp., LaGrange, Ill. 60525  
Elliott Company, (Div. of Carrier Corp.), Jeanette, PA 15644  
General Electric Co., Diesel Power Products, 2901 E. Lake Rd.,  
Erie, PA 16531  
MTU of North America, Inc., 10450 Corporate Drive, Sugar Land,  
TX 77478  
Maritime Industries, Ltd., 6307 Laurel St., Burnaby, B.C. Canada  
V5B 3B3  
Michigan Wheel/Gulf Coast, P.O. Box 1528, Pascagoula, MS  
39567  
Motive Power Corp., P.O. Box 365, Mineola, NY 11501  
70124  
Omnitruster Inc., 15418 Cornet Ave., Santa Fe Springs, CA 90670  
Oosterhuis Industries, P.O. Box 30587, New Orleans, LA 70190  
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014  
Propulsion Systems Inc., 21213 76th Ave., So., Kent, WA 98031  
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166  
Skinner Engine Company, P.O. Box 1149, Erie, PA 16512  
Tacoma Boatbuilding Co./Escher Wyss, 1840 Marine View Dr.,  
Tacoma, WA 98422  
Transamerica DeLaval, Inc., Engine & Compressor Div.,  
550 85th Ave., Oakland, CA 94621  
Transamerica DeLaval, Inc., Turbine & Compressor Div., P.O. Box  
8788, Trenton, N.J. 08650  
Turbine Specialties, Inc., P. O. Box 207, West State Street Road,  
Salina, KS 67401  
Voith Schneider of America—U.S. Agent: Eli Sharprut, 347 Evelyn  
St., Paramis, N.J. 07652

#### PUMPS—Repairs—Drives

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

#### REFRIGERATION—Refrigerant Valves

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

#### ROPE—Manila—Nylon—Hawsers—Fibers

American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431  
Jackson Rope Co., Reading, Pa. 19603  
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

#### RUDDER ANGLE INDICATORS

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

#### SANITATION DEVICES—Pollution Control

Argo Marine Pollution Systems Division, 140 Franklin St., New  
York, N.Y. 10013  
Envirovac (Division of Dometic Inc.), 1260 Turret Drive, Rockford,  
IL 61111  
Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood,  
L.I., N.Y. 11696  
Marland Environmental Systems, Inc., N. Main Street, Walworth,  
WI 53184  
Microphar, Inc., P.O. Box 490, Willits, CA 95490  
Red Fox Industries, P.O. Drawer 640, New Iberia, LA 70560  
Research Products/Blankenship, 2639 Andion, Dallas, Texas 75220  
St. Louis Ship FAST Sewage Systems, 611 East Marceau St.,  
St. Louis, Mo. 63111  
Sigma Treatment Systems, 2 Davis Ave., Frazer, PA 19355

#### SCAFFOLDING EQUIPMENT—Work Platforms

Patent Scaffolding Co., 2125 Center Ave., Fort Lee, N.J. 07024  
Spider Staging Sales Co., P.O. Box 182, Renton, Washington 98055  
Trus Joist Corp., P.O. Box 60, Boise, Idaho 83707

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Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa.  
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Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913  
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken,  
N.J. 07030

#### SHIPBREAKING—Salvage

American Ship Dismantlers, Inc., Division of Schnitzer Industries,  
3300 N.W. Yeon Avenue, Portland, Ore. 97210  
The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202  
Levin Metals Corporation, 1310 Canal Blvd., Richmond, CA 94807  
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

#### SHIPBUILDING STEEL

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

#### SHIPBUILDING—Repairs, Maintenance, Drydocking

A.D.M. (Amsterdam Drydock Mfg.), Moatschappij bv, P.O. Box  
3006, 1003 AA, Amsterdam, Holland  
AMT, Inc., 2400 N.W. 39th Avenue, Miami, FL 33142  
Asmar Shipyards Co., Astilleros y Maestranzas de la Armada,  
Prat 856, Piso 14, Casilla 150-V, Valpariso, Chile, S.A.  
Astilleros Espanoles S.A., 17 Padilla, P.O. Box 815, Madrid, Spain  
Astilleros Unidos de Veracruz, S.A., San Juan de Ulua S/N,  
Apdo. Postal 647, Veracruz, Ver., Mexico  
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150  
Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085  
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004  
Blount Marine Corp., P.O. Box 368, Warren, RI 02885  
Boeing Marine Systems, P.O. Box 3707, Mail Stop 14-11, Seattle,  
WA 98124  
Ira S. Bushey & Sons, Inc., 764 Court Street, Brooklyn, N.Y. 11231  
Cantieri Navali Riuniti, Via Cipro, 11, 16100 Genova, Italy  
Carrington Slipways Pty. Ltd., Old Punt Road, Tomago, N.S.W.,  
Australia 2322  
Centromor, One World Trade Center, Suite 3557, New York, N.Y.  
10048  
China Shipbuilding Corp., c/o Allegro Transportation Supply Co.,  
One Penn Plaza, Room 1606, New York, NY 10001  
Coastal Dry Dock & Repair Co., Building 131, Brooklyn Navy  
Yard, Brooklyn, N.Y. 11205  
Conrad Industries, P.O. Box 790, Morgan City, La. 70380  
Curacao Drydock Co., Inc., P.O. Box 153, Willemstad, Curacao,  
Netherlands Antilles  
Curacao Drydock, 26 Broadway, Suite 741, New York, N.Y. 10004  
Delattre-Levivier, Tour Fiat, Cedex 16, 92084 Paris La Defense,  
France  
Dorbyl Ltd., Military Road, 1 Industrial Sites, West Bank,  
5201 East London Republic of South Africa  
Dravo Steelship Corp., R.4, Box 167, Pine Bluff, Ark. 71602  
Empresa Nacional Bazan, Paseo de la Castellana 65, Madrid 1  
Spain  
Equitable Shipyards, Inc., P.O. Box 8001, New Orleans, La. 70122  
FMC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave.,  
Portland, Oregon 97208  
Galveston Shipbuilding Co., P.O. Drawer 2660, Galveston,  
TX 77553  
HBC Barge, Inc., Grant Building, Pittsburgh, PA 15219  
Halifax Industries, Ltd., P.O. Box 1477, Halifax, Nova Scotia,  
Canada, B3K 5H7  
Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189  
Havre de Grace, Havre de Grace, Md.  
Hitachi Shipbuilding & Engrg. Co., Ltd., 47 Edoberi 1-Chome,  
Nishi-Ku, Osaka, Japan  
Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central  
Post Office, Kowloon, Hong Kong  
Hudson Shipbuilders, Inc., P.O. Box Q, Pascagoula, MS 39567  
Jackson/New York, 29 45 Richmond Terrace, Staten Island, NY  
10303  
Jeffboat, Inc., Jeffersonville, Ind. 47130  
Keppel Shipyard Ltd., P.O. Box 2169, 325, Telok Blangah Road,  
Singapore 4  
Kockums Shipyard, S-201, 10 Malmo 1, Sweden  
Levingston Shipbuilding, P.O. Box 968, Orange, TX 77630  
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue,  
S.W., Seattle, Wash. 98134  
J. Ray McDermott & Company, Inc., 1010 Common Street, New  
Orleans, LA 70160  
MacGregor Land & Sea, Inc., 135 Dermody Street, Cranford, NJ  
07016  
Mangone Shipbuilding Co., 819 South 80th Street, P.O. Box 5446,  
Houston, TX 77012  
Matton Shipyard Co., Inc., P.O. Box 645, Cohoes, New York 12047  
J. Ray McDermott & Co., Inc., P.O. Box 60035, New Orleans,  
LA 70160  
Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625,  
Tampa, Fla. 33681  
Mississippi Marine Towboat Corp., P.O. Box 539, Harbor Front  
Industrial Park, Greenville, MS 38701  
Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655  
Nashville Bridge Company, P.O. Box 239, Nashville, TN 37202  
National Steel & Shipbuilding Corp., San Diego, Calif. 92112  
Newport Shipbuilding & Repair, P.O. Box 5426, Houston, TX  
77012  
Newport News Shipbuilding & Dry Dock Co., 4101 Washington  
Ave., Newport News, Va. 23607  
North American Hydraulics, P.O. Box 278, Brampton, Ontario  
Canada L6V 2L1  
O.A.R.N. (Officine Allestimento-Riprazioni Navi), P.O. Box 1395,  
Genoa, Italy 16100  
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif.  
94501  
Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla.  
33156  
Perth Amboy Dry Dock Co., Perth Amboy, N.J. 08862  
Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767  
Port Houston Marine, Inc., 7220 J.W. Peavy Drive, Houston, TX  
77012  
Port of Portland, P.O. Box 3529, Portland, OR 97208  
S.E.B.N., Societa Esterzio Bacini Napoletani, Via Marinella  
Varco N.6 (80133) Naples, Italy

St. Louis Shipbuilding—Federal Barge, Inc.,  
611 East Marceau, St. Louis, Mo. 63111  
STE Marie Yard & Marine, Inc., 741 East Portage Ave., Sault Ste  
Marie, MI 49783  
Savannah Shipyard Co., P.O. Box 787, Savannah, GA 31402  
Sembawang Shipyard Ltd., Sembawang, P.O. Box 3, Singapore  
9175

The Service Machine Group, Inc., P.O. Box 2664, Morgan City,  
LA 70308

Setenave-Estaleiros Navais De Setubal, P.O. Box 135, Setubal,  
Portugal

Sudaimport, 5 Kalyaevskaya, Moscow K-6, USSR  
Swiftships Inc., P.O. Box 1908, Morgan City, LA 70380

Tacoma Boatbuilding Co., Inc., 1840 Marine View Drive, Tacoma,  
WA 98422

Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004  
Total Transportation Systems Inc., 813 Forest Dr., Newport News,  
VA 23606

Total Transportation Systems (International) A/S, Bjornegarden,  
P.O. Box 28, N5201 Oslo, Norway

Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316  
Tug Barge Systems, Inc., subsidiary of Ingram Corp., 4100 One  
Shell Square, New Orleans, La. 70139

Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken,  
N.J. 07087

Wiley Manufacturing, a unit of AMCA International Corp.,  
P.O. Box 97, Port Deposit, MD 21904

Zigler Shipyards, P.O. Box 2607, Morgan City, La. 70380

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Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of  
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#### SMOKE INDICATORS

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

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

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Francis B. Crocco, Inc., P.O. Box 1411, San Juan, Puerto Rico 00903  
Hull & Cargo Surveyors, Inc., 99 John St., New York, NY 10038

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Butterworth Systems Inc., 224 Park Ave., P.O. Box 352,  
Florham Park, N.J. 07932

Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken,  
N.J. 07030

Salwico, Inc., 77 River St., Hoboken, N.J. 07030

#### TANK LEVELING INDICATORS

Transamerica DeLaval, Inc., Gem Sensors Div., Spring Lane,  
Farmington, CT 06032

Vu-Gage System, 150 E. 42nd St. (Room 910), New York, NY  
10017

Zesco, Inc., 3131 Brian Park, Suite 1095, Houston, TX 77042

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Elston Avenue, Chicago, IL 60614

Delong Corp., 29 Broadway, New York, N.Y. 10006  
Houston Marine Services, Inc., First State Tower, (Suite 509),  
Houston, TX 77015

Transportation Concepts & Techniques Inc., 1020 West Main Street,  
Charlottesville, VA 22903

TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.  
Bay-Houston Towing Co., 805 World Trade Bldg., Houston,  
Texas 77002

Chotin Transportation, Inc., 580 Walnut St., Cincinnati, Ohio 45202  
Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202

Henry Gillen's Sons Lighterage, 21 West Main St., Oyster Bay,  
N.Y. 11771

Gulf Fleet Marine Corporation, Canal Place One, Suite 2400,  
New Orleans, LA 70130

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

McDonough Marine Service, P.O. Box 26206, New Orleans, La.  
Moran Towing & Transportation Co., Inc., One World Trade Center,  
Suite 5335, New York, N.Y. 10048

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

#### UNDERWATER SERVICES—Contracting

SeaTec International Ltd., Blackburn Industrial Center, Gloucester,  
MA 01930

#### VALVES AND FITTINGS

Dover Corporation, Norris Division, P.O. Box 1739, Tulsa, OK  
74101

Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ  
07207

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

Marland Environmental Systems Inc., N. Main St., Walworth,  
WI 53184

Rockwell International, Flow Control Division, 400 N. Lexington  
Avenue, Pittsburgh, PA 15208

Stacey Valve Co., 29 Meserole Ave., Brooklyn, N.Y. 11222  
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229

Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928  
Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186

#### WINCHES AND FAIRLEADERS

Bloom Inc., Highway 20, West Four Miles, Independence, IA 50644  
Clyde Iron, a unit of AMCA International Corp., Suite 102,  
2300 West Loop South, Houston, TX 77027

Gearmatic Co. Ltd., 7400 132nd Street, Surrey, B.C., Canada  
Markey Machinery Co., 79 South Horton St., Seattle, Washington  
98134

Smith-Berger Manufacturing Corporation, 3236 16th Avenue S.W.,  
Seattle, WA 98134

#### WINDOWS

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

#### WIRE AND CABLE

Anixter Bros., Inc., 4711 Golf Road, One Concourse Plaza,  
Skokie, Illinois 60076

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

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#### ZINC

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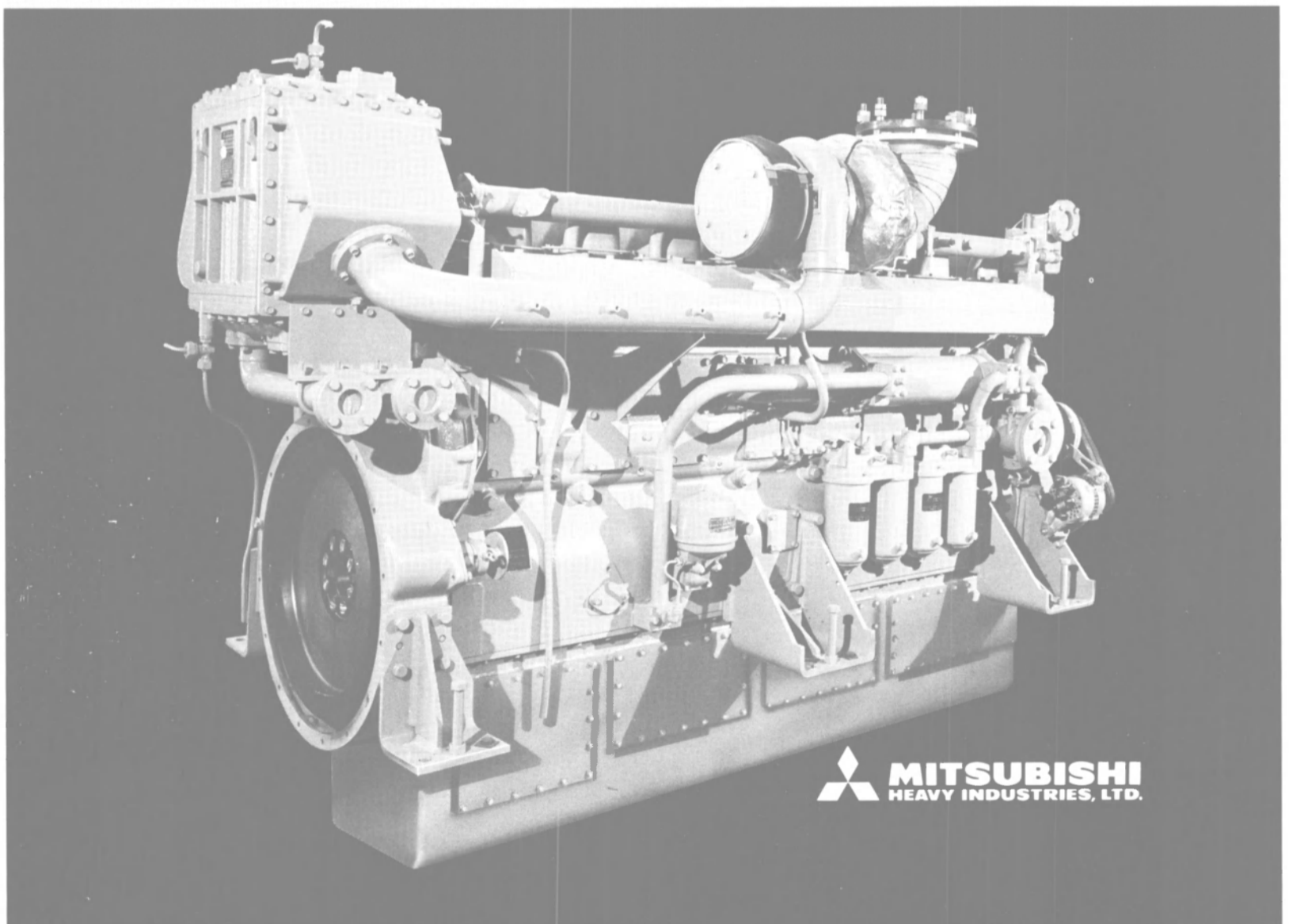
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