

MARITIME REPORTER AND ENGINEERING NEWS



ANNUAL OUTSTANDING VESSELS REVIEW

'Safaniya Five'

**Halter Delivers
Pigging/Maintenance Vessel
For Work In Arabian Gulf**

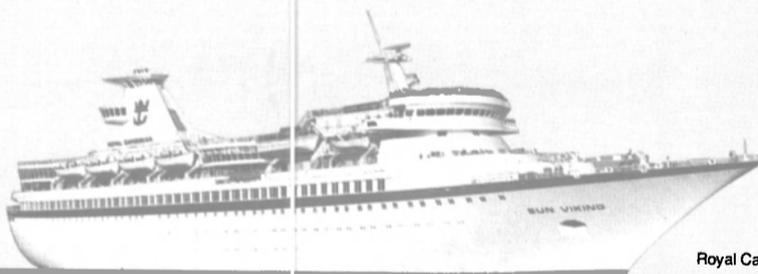
(SEE PAGE 8)

**Annual
Outstanding Vessels
Review**

(SEE PAGE 22)

DECEMBER 1, 1981

With BP Marine International American ship owners can think of 300 ports as home.



Royal Caribbean Cruise Lines' Sun Viking.



More than 4000 ships
receive BP's high quality
lubrication services in over
60 countries.

BP North America Trading Inc.

New York
New Jersey
New Orleans
Houston
Los Angeles

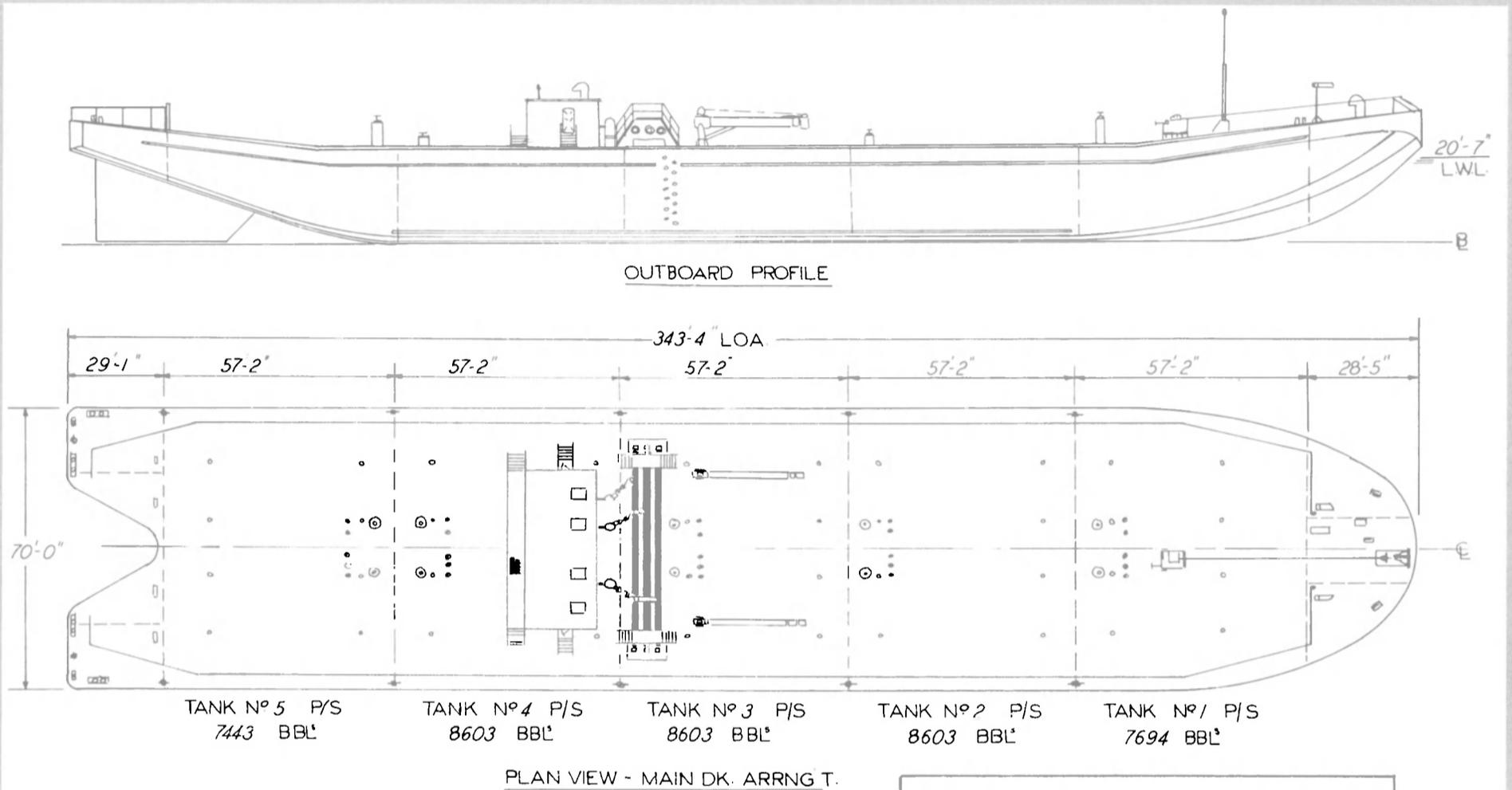
Telephone 201 494 3900

BP marine international. Serving America and the World.

Write 124 on Reader Service Card

New 80,000 Barrel Barge

Available for Oil and Chemical Transportation



This new barge, McAllister 80, is available for freightment or charter.

- Suitable for clean petroleum products and chemicals. Tanks fully coated with inorganic zinc.
- Capable of loading or discharging 3 cargoes simultaneously.
- Able to handle 10 segregations.

Call John Alban, General Manager,
Oil Transportation Division at
(212) 269-3200 or any of the McAllister
offices listed below.



McALLISTER 80 CHARACTERISTICS

VESSEL PARTICULARS

1.	LENGTH, O.A.	343'-4"
2.	BREADTH	70'-0"
3.	DEPTH	24'-7"
4.	LOADLINE DRAFT	20'-7"
5.	DEADWT. @ 20'-7"	9546 L.T.
6.	A.B.S. * A-1 OIL BARGE OFF SHORE	
7.	TOTAL CAPACITY @ 100% FULL	81892 BBL

MACHINERY PARTICULARS

1.	ENGINES: (3) GM DIESELS 12V-71
2.	PUMPS: (3) GOULDS 16x12-3500GPM
3.	GENERATOR: (1) G.M. 2-71 W/ 30 KW. 230/115 VAC. 3 PHASE

McAllister Brothers, Inc. Towing and
transportation. 17 Battery Place,
New York, N. Y. 10004. (212) 269-3200.
Baltimore (301) 547-8678 • Norfolk (804) 627-3651
Philadelphia (215) 922-6200 • San Juan (809) 724-2360

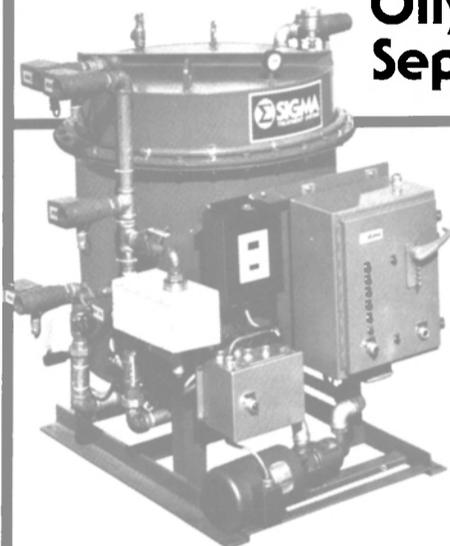
McAllister



Write 243 on Reader Service Card

INTRODUCING SIGMA SH2

Oily Water Separators



U.S. Coast Guard
Certified . . .
and meets
IMCO standards. . .
combines low cost and
low maintenance with
compact size and
automatic operation.

- Unique self-cleaning coalescer practically eliminates maintenance . . . no cartridges to change.
- Completely automatic continuous operation based on bilge level.
- Effluent meets or exceeds USCG and IMCO standards.
- Takes little space . . . just one tank on a compact skid.
- Wide range of sizes . . . for small work boat to supertanker
- Optional monitor system automatically recirculates effluent, if oil content reaches 15 ppm . . . outputs for strip chart recorder and remote alarm included.

See our full line of Oily Water Separators — Marine Sanitation Devices at "SHIPASIA '81" in Hong Kong.



SIGMA TREATMENT SYSTEMS
Sigma Treatment Systems, Inc.
Merry Meadows RD 1, Box 70,
Chester Springs,
Pennsylvania, USA 19425
215/363-5650
Telex: 902014

Manufactured
in U.S.A. with
foreign components

Write today
for free
brochure.

Write 341 on Reader Service Card

MarAd Approves Farrell Lines Ship Charter To Military Sealift Command

The Maritime Subsidy Board has approved a Farrell Lines Incorporated request to charter the Austral Lightning and Austral Rainbow to the Military Sealift Command (MSC) for two years with three one-year optional extensions.

The 820-foot, 29,800-dwt barge and container carriers were built with the aid of construction-differential subsidy by Avondale Shipyards, Inc., New Orleans, La., in the early 70s. Prior to the approval of this charter they had been operated under operating-differential subsidy contract MA/MSE-352.

Under the terms of the board's approval the ships will go off subsidy at the end of the voyages preceding the charter and will continue to operate without subsidy until their redelivery from MSC.

83 Vessel \$3.4-Billion Program Planned By Japanese Shippers

Japan's six largest shipping companies plan to invest more than \$3.4 billion in construction of 83 new cargo vessels during the next three years, according to the Japan Development Bank (JDB).

The construction will consist mainly of carriers of non-oil energy resources, presumably coal carriers needed to meet rising demands for the fuel from Japanese industries.

A major part of these new-buildings, it is anticipated, will be subsidized under the government-sponsored annual ship construction programs, normal practice in Japan.

Sources at the JDB revealed that Nippon Yusen Kaisha (NYK) plans to build 24 new vessels, Mitsui O.S.K. Lines (MOL) another 23, Kawasaki Kisen Kaisha ("K" Line) 17 and Yamashita-Shinnihon Steamship Co. (Y.S. Line) another 13.

Bank officials disclosed that there were a number of grim assessments of the future for the Japanese shipping industry which included a continued sluggish dry cargo market and rising bunker fuel costs.

ONLY MARITIME REPORTER GIVES YOUR ADVERTISING THESE POWERFUL SALES BUILDING ADVANTAGES

- **WORLD'S LARGEST** circulation to buying influence readers
- **LARGEST US** circulation to buyers
- **LARGEST INLAND/OFFSHORE** (Shallow draft) circulation to buyers
- **100% REQUESTED CIRCULATION**...in writing...by each individual reader
- **MOST CURRENT CIRCULATION**...MR's total circulation is 100% qualified. Largest percentage of currently (less than 1 yr.) qualified circulation in the industry.
- **CIRCULATION TO PEOPLE** Total Circulation Address Analysis...99.1% addressed to individual people...by name and title.
- **CURRENT EDITORIAL**...TWICE each month...MR publishes latest info FIRST.
- **BEST READ** because it is CURRENT...weeks ahead of slower monthlies
- **UNEQUALLED PASS-ALONG READERSHIP**...5 readers per single copy...over 200,000 monthly readership
- **FREE READER SERVICE CARD**
- **EXCLUSIVE FREE LISTING** for regular advertisers in Buyers Directory section of all 24 issues for one entire year.
- **DIRECT MAIL SERVICE**
- **DIRECT RESPONSE CARD MAILINGS**

**MARITIME
REPORTER
AND
ENGINEERING NEWS**

MARITIME REPORTER /Engineering News

107 East 31 Street New York, N.Y. 10016
(212) 689-3266

THE ADVERTISING LEADER In 1980, a larger number of advertisers placed more pages of advertising in Maritime Reporter than in the No. 2 magazine.

**MARITIME
REPORTER
AND
ENGINEERING NEWS**

(USPS 016-750)

No. 23

Volume 43

107 EAST 31st STREET
NEW YORK, N. Y. 10016

(212) 689-3266

Telex: MARINTI 424768

ESTABLISHED 1939

Maritime Reporter/Engineering News is published the 1st and 15th of each month by Maritime Activity Reports, Inc. Controlled Circulation postage paid at Waterbury, Connecticut 06701.

Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 107 East 31st Street, New York, N.Y. 10016.

Member



Business Publications
Audit of Circulation, Inc.

Write 162 on Reader Service Card

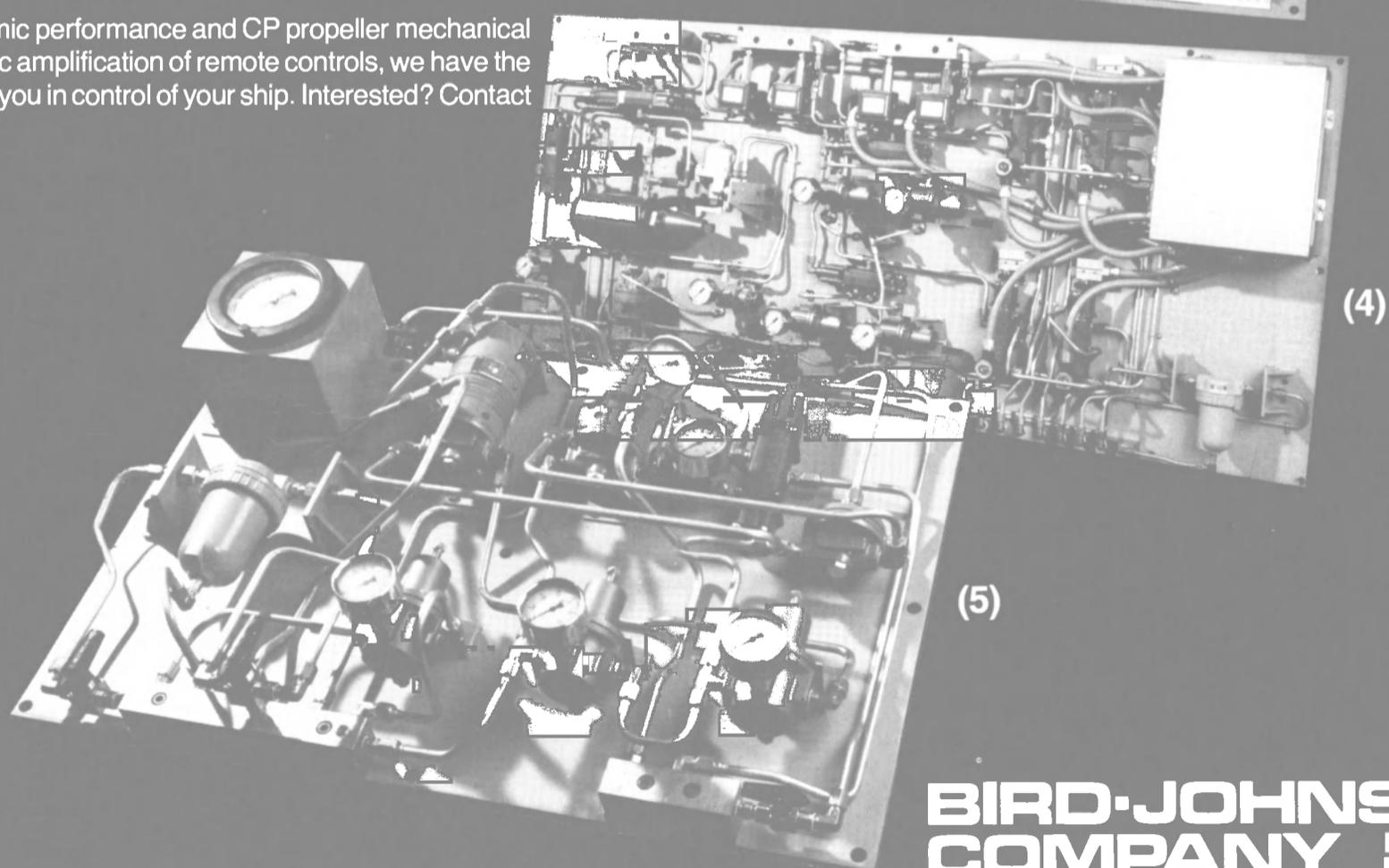
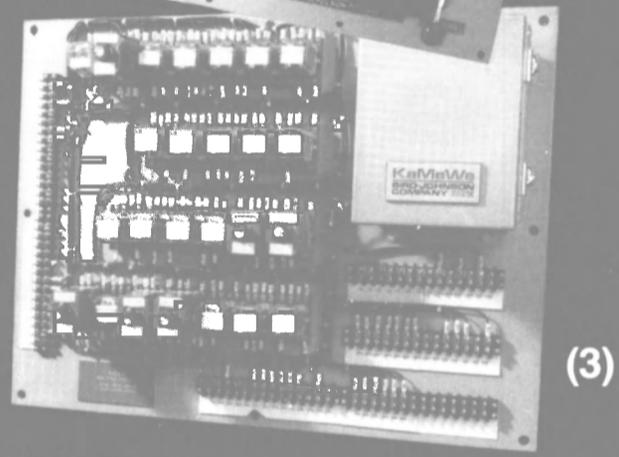
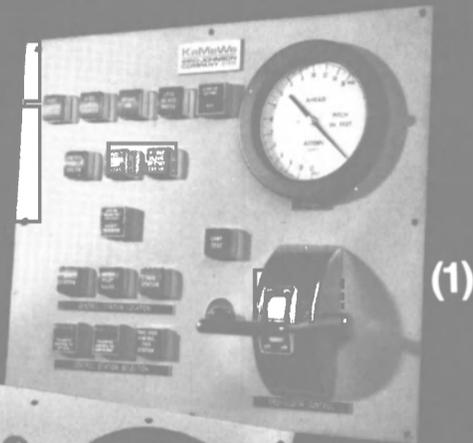
We Have Designs For Your Future Bridge Control Systems

Our CONTROLLABLE PITCH PROPELLERS have featured remote control systems for as long as we've been making them—over 26 years. With that much experience, we have the capability to develop flexible controls, designed to match operator needs with hull and machinery characteristics. Built under ABS survey to ACC or ACCU requirements and backed by comprehensive vibrational and operational testing.

Remote stations are drop-in panels: Pneumatic (1) or Electronic (2) to ease integration with ship control consoles. Control Transfer and Mode Selection Logic (3) is a fail safe system, with low voltage DC for back-up control. Propulsion Load Limit Logic (4) operates on a programmed power-RPM relationship. The pay-off with this system—improved fuel efficiency and less engine wear.

Our patented Engine Load Sharing System (5) provides fuel rack equalization—which results in uniform load between two or more engines driving the same propeller. For FP or CP Propellers, retrofits or new construction, our service tested system compensates for calibration deviations between engine governors throughout the full range of RPM and power.

From hydrodynamic performance and CP propeller mechanical design to hydraulic amplification of remote controls, we have the experience to put you in control of your ship. Interested? Contact us for the details.



**BIRD-JOHNSON
COMPANY** MARINE
DIVISION
110 Norfolk Street, Walpole, MA 02081, (617) 668-9610

Petroterminal De Panama Selects EMH To Construct Tanker-Loading Buoys

EMH, Paris, France, will build two CALM — Catenary Anchor Leg Mooring — buoys for Petroterminal de Panama, S.A. (PtP). The turnkey contract was awarded through Morrison-Knudsen, acting as agent for the pipeline company.

The two SPMs will be built by

EMH at the Tamese yard in Spain and installed off the East Coast of Panama in mid-1982. They will be anchored in 80 feet (24 meters) of water, and each will be capable of loading crude at up to 60,000 bhp into a 150,000-dwt tanker.

According to **Jean Alleaume**, EMH president, his firm already is building two CALM units similar to those ordered by PtP. One will be installed late in 1981 in the Rospo Mare field in the Adri-

atic for ELF-Italiana. A second buoy is being constructed for Total-ABK and will be installed off Abu Dhabi in the Abu Al Bu Khoosh field.

The PtP project will improve the distribution link between the North Coast Alaska oil fields and Atlantic ports. Currently, Alaska crude is shipped by supertanker to the Pacific terminus of the Panama Canal, transferred to canal-size tankers, shipped through the canal, then retrans-

ferred to large tankers for transport to the final destination.

When the pipeline is operational, the crude will be pumped overland at a rate of approximately 800,000 bpd, bypassing the Canal completely. There will be tank farms at both ends of the pipeline, dock-unloading facilities at the Pacific terminus, and the EMH-built buoys on the Atlantic side.

EMH also has under construction a fixed-column SPM — Single Point Mooring — that will be installed at Cayo Arcas off the Mexican Coast late in 1981. Operated by PEMEX, it will load tankers of up to 350,000 dwt.

New, improved Doppler Speed Logs and Docking Systems from Straza



MRQ-4012D Single Axis Speed Log with Echo Sounder



MRQ-4015D Dual-Axis Speed Log with Echo Sounder

IMPROVEMENTS:

- Microprocessor based system—improves control and adds functions to system
- RS422 serial interface—provides direct input to ship's computer. Also allows up to 1200 ft. cable lengths for remote displays. (Bow display for SBM)
 - Bright, easy-to-read LED digital display
 - Depth sounder included in logs
 - Completely sealed front panel

SAME:

- The transducer, proven accuracy and reliability, and same 1980-81 system prices.
- CONCLUSION: Ametek-Straza continues to meet the maritime industry's needs with improved systems—at no increase in price!



Remote Wing and Bow Display

Contact:
Marketing
Department,
AMETEK, Straza
Division,
790 Greenfield Drive,
P.O. Box 666,
El Cajon, CA 92022.
Telephone: (714) 588-3380.
Telex: 69-5436.

AMETEK

Halter To Build Supply Vessel For Pelham Marine

Halter Marine, Inc., New Orleans, La., was recently awarded a contract by Pelham Marine, Inc., also of New Orleans, to construct a 180-foot supply boat. The contract will bring to an even dozen the number of Halter-built boats to operate under the Pelham flag.

The vessel will be powered by two Caterpillar D399 diesel engines and will operate in the Gulf of Mexico. It will be built by Halter's Moss Point, Miss., division and is scheduled for completion in December 1982.

Halter Marine, Inc. is the world's largest builder of supply boats for the offshore oil and gas industry.

Name Peter West VP Of Transway Operations

Peter J. West has joined Transway International Corporation, New York, N.Y., as vice president-operations, a newly created position, it was announced recently.



Peter J. West

Mr. West has corporate staff responsibility for marine transportation, truck trailer manufacturing, and liquefied petroleum gas operations, said **John W. Wolcott**, president and chief executive officer of Transway.

Mr. West most recently had been senior vice president-operations at UMC Industries, Inc., a diversified industrial company in Stamford, Conn. Transway International is a diversified transportation and distribution company whose operations also include several freight-forwarding and related cartage companies.



Moran's 19,000 dwt barge *Caribbean* loading coal in Baltimore for transport to Searsport, Maine.

The Energy to Move Energy

Moving coal takes energy. Moran has both the energy and the know-how to move it efficiently! Over 120 years of experience go into the operation of our cost-saving, coastwise tug and coal barge units.

Make your coal move with Moran. Call or write us to discuss your needs.

Moran Towing Corporation
One World Trade Center • Suite 5335 • New York, NY 10048
Tel. 212-466-3600 • TWX 710-581-2329



SNAME-Hampton Roads Hears Paper On Fuel Savings In Cargo Heating Systems;



Participants at the SNAME-Hampton Roads Section's first meeting of the season were, left to right: S.E. Bevins, technical programs committee; D.L. Blount, chairman; G.E. Ponton, author; R.L. Harrington, vice chairman; and S.A. Tatum, secretary-treasurer.

The Hampton Roads Section of The Society of Naval Architects and Marine Engineers recently held its first meeting of the 1981-82 season at Fisherman's Wharf in Hampton, Va.

This dinner/technical meeting, attended by 88 members and guests, featured a technical paper, "Reducing Fuel Consumption for Liquid Cargo Heating Systems," by George E. Ponton.

Mr. Ponton is the Virginia Beach office manager of Advanced Marine Enterprises, Inc. He is currently participating in the design of structural, piping, ventilation, and electrical systems for various shipyards.

Mr. Ponton's paper presents the results of an analysis to determine potential savings in heating systems for number 6 fuel oil cargoes. Cargo vessels carrying heavy liquid petroleum products such as number 6 fuel oil or asphalt, traditionally have an extensive heating system. This system consists of thousands of feet of 1 1/2- and 2-inch pipe arranged in the bottom of the cargo tanks through which a heat transfer fluid is passed.

A heater, fuel fired usually with diesel oil, is used to raise the temperature of the heating fluid that is forced through the coils. This maintains the cargo at a temperature suitable for off-loading by centrifugal cargo pumps. With the cost of fuel spiraling, an approach that would reduce fuel consumption should be attractive to the owner/operator of such a

vessel. Since positive displacement pumps can handle much more viscous fluids than centrifugal pumps, they were studied for off-loading, instead of using traditional vertical deep well mixed flow pumps.

The analysis of various petroleum cargo vessels indicated that a significant reduction in fuel consumption could be realized with the new cargo pump type by reducing the size of the heaters. Additionally, the quantity of heating coils could be reduced, which would result in decreased construction and operating costs if incorporated into vessel design.

Following the presentation of the paper, it was commented on by Jay Ancarrow of Newport News Shipbuilding, W.D. Burton Jr. of Newport News Shipbuilding, Charles Hornbostel of Transamerica Delaval Inc., and Horace Steven of Naval Sea Systems Command in Portsmouth. All were in agreement that Mr. Ponton's paper would be a valuable aid in new design to reduce cost of heating systems for fuel oil cargoes of this type.

SKILLED LABOR - ANYWHERE - ANYTIME

PIPEFITTERS

FITTERS

ELECTRICIANS

WELDERS

MACHINISTS

RIGGERS

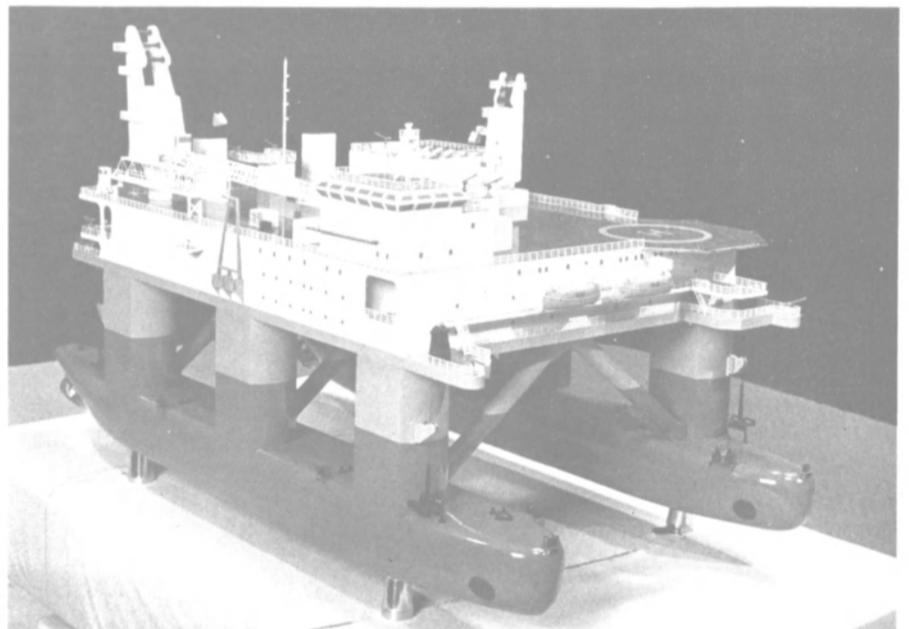
Cisco has employed several thousand 1st Class mechanics in more than 20 marine facilities nationwide. Cisco services are ideal in any labor intensive project that requires trade skills.

OFFICES:
JACKSONVILLE, FL
NEW ORLEANS, LA
NORFOLK, VA
HOUSTON, TX



For More Information, Call
Consolidated Industrial Skills
Corporation, 1528 E. Adams St.,
Jacksonville, FL 32202.
(904) 354-1868.

Multipurpose Semisubmersible Built To Handle North Sea Emergencies



Model of BP/BNOC emergency support vessel lolair.

The emergency support vessel (ESV) lolair, built by Scott Lithgow Ltd. at Greenock on the Clyde for British Petroleum Ltd. and the British National Oil Corporation, is undergoing extensive sea trials before final fitting out and service in the North Sea.

Of a semisubmersible construction, the lolair is a new design of an ESV and incorporates the best marine components in a complex design first put onto paper five years ago. Launched in April and now undergoing extensive sea trials, she is designed to provide a fire-fighting — including well-kill — capability as well as the diving, maintenance, construction, and accommodation facilities.

A four-deck platform 76.5 me-

ters by 51.5 meters (about 251 by 169 feet) sits atop six columns connected to identical-twin pontoons.

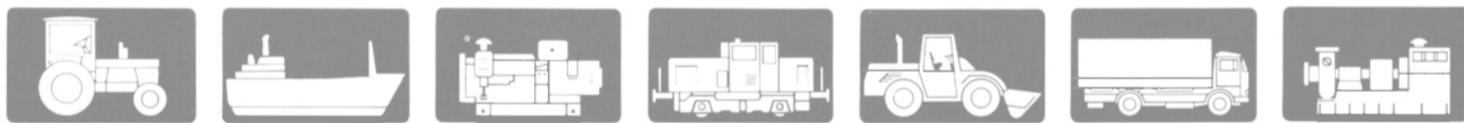
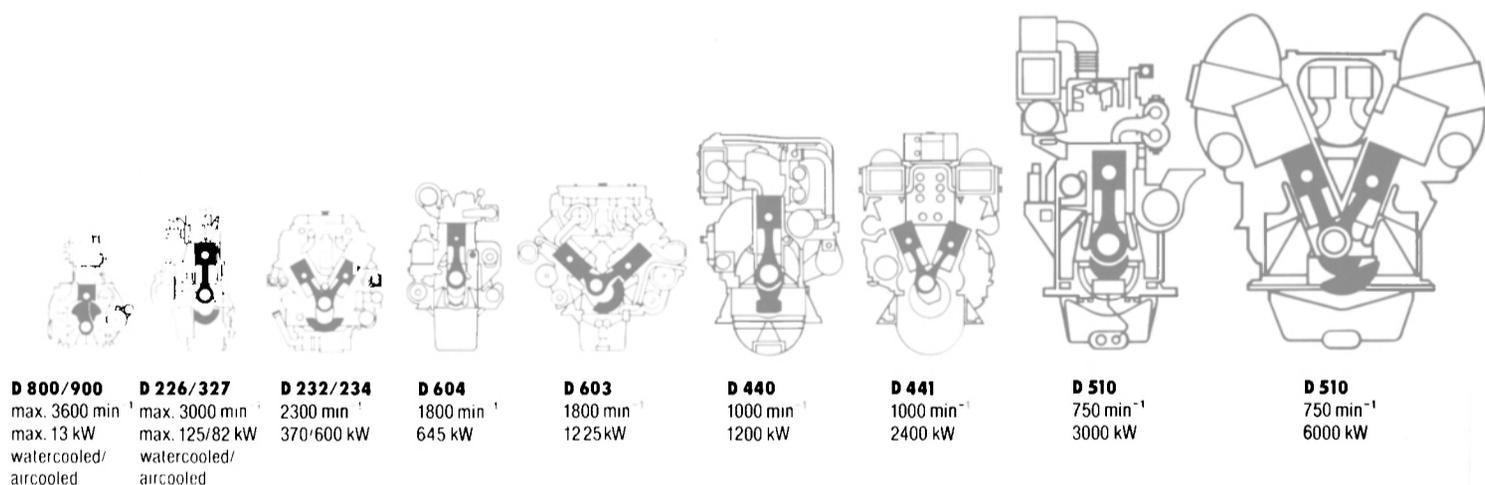
The \$120-million lolair was initially designed as a support vessel in the mid-70s. However, following the Ekofisk blowout in 1977, an emergency role became the prime consideration.

The lolair will be available to attend an emergency outside the North Sea Forties and Thistle fields which it will patrol for the joint owners.

Her operational displacement of 19,600 tons is lighter than any comparable vessel currently in operation. This, together with a lack of any horizontal bracing between columns or pontoons, gives her a transit speed of 12.5

MWM

A complete diesel engine programm from 3 to 6000 kW



MWM MOTOREN-WERKE MANNHEIM AG

D-6800 Mannheim 1 · Post Box 1563 · Tel. (0621) 3841 · Telex 4 62 341
Federal Republic of Germany

In the USA: MWM Murphy Diesel · Milwaukee · Tel. (001-504) · Telex 2-6787 murdiesels

knots, enough to outstrip any other ESV. Bracing is provided by inverted Vs running from column base to mid-platform. Any single bracing member can be lost without affecting capability. Transit draft will be no more than 6.9 meters.

The 102-meter-long pontoons (about 335 feet) contain fuel, water and ballast compartments, as well as pump and motor rooms. Each of the two after motor rooms houses two 2.42-mw Laur-

ence Scott 6.6-kv electric motors that drive the propellers and a 1.5-mw motor for driving a thruster. The forward motor rooms house a 1.5-mw thruster motor and a 2.42-mw motor driving a fire pump through a variable speed fluid coupling.

The six 6.6-kv Laurence Scott generators are powered by six 3.4-mw German-designed M.A.N. diesels built under license in Britain by Harland and Wolff, Belfast. They are situated in two

separate engine rooms on the platform itself and are provided with a switchboard arrangement which, by separating them into three sections, gives a double fall back in an emergency.

At the heart of the Iolair's ability to function in an emergency and support role to rigs and platforms in the North Sea is her dynamic positioning system. The system, supplied by Kongsberg of Norway, uses three computers to control the main

SMM propellers and the four SMM lateral thrusters which are positioned transversely in tunnels in the fore and after ends of each pontoon.

The system, which enables the ESV to hold position continuously in high seas, also can be used in conjunction with four anchors deployed one from each corner of the platform.

The Worthington Simpson fire-fighting system incorporates 16 Knowsley monitors. The vessel is capable of pumping 10,200 cubic meters of water an hour onto a blazing rig 180 meters distant continuously for at least 21 days before having to bunker more fuel. During that time the Iolair would keep her own area cool by showering her total surface area with 5,500 cubic meters of water per hour.

For a top-kill exercise, bulk mud powder permanently stored in four 40-cubic-meter silos in each corner leg would be mixed onboard with chemicals and then pumped at pressure into the well of a stricken rig via a telescopic emergency gangway located at the starboard aft-corner of the vessel.

This gangway also will land or evacuate rig personnel. There is a small ward and fully equipped operating room onboard. Specialized medical personnel will be flown to the ESV when required. During emergency operations, all nonessential crewmen will be lifted off.

When she turns to her daily work however, the Iolair's task is more mundane. Named after a Gaelic eagle she will take up to 120 transient oilmen under her wing as well as offer a fortnightly home to her crew of 100.

The platform deck accommodates a helicopter hanger and landing pad, the view around bridge, a small workshop and two cranes. Both—one capable of 40-ton and the other capable of 100-ton loads—can be used through a moon pool in the platform structure.

For heavier work, strongpoints beneath the moon pool allow the Iolair to lift 500 tons up to three meters off the seabed through her own buoyancy. Her operational draft of 15.25 meters will put the platform 17 meters above sea level while work is taking place.

An integral diving center provides facilities for up to 22 divers employed in both surface work (up to 50 meters down) and saturation diving (to 300 meters down).

Living and sleeping compression accommodation for up to six divers allows saturation work to be undertaken continuously through a bell lowered down a tube in the center starboard column.

An official christening ceremony for the vessel will take place at handover. As yet no date has been fixed for this.

WHEREVER SHIPS GO WHATEVER THEY DO

they're powered with...



RIVER & HARBOR

Freight Car,
Passenger,
and Automobile Ferries

PACIFIC SEAGOING

Passenger and Cargo Liners
Cable Ships

ATLANTIC SEAGOING

Train Ferries

ARCTIC SEAS

Icebreakers
Buoy and Lighthouse Tenders

GREAT LAKES

Bulk Ore Carriers
Self-unloaders
Bulk Cargo Carriers
Freight Car, Passenger, and
Automobile Ferries.
Tankers

MEDITERRANEAN

Colliers

ATLANTIC, NORTH & SOUTH AMERICA

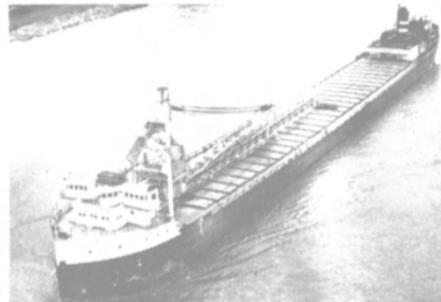
Oceangoing Express Cargo Liners

SOUTH AMERICAN LAKE & RIVER

Tankers
Hopper Dred



Passenger Ferryboat
"Pvt. Joseph F. Merrell"



Bulk Ore Carrier
"J. F. Schoellkopf, Jr."



Passenger and Freight
"Prince George"



Task Force Vessel
U.S.N.S. "Lindenwald"



TRUE OR FALSE?

Obviously an exaggeration today but very true when this ad appeared in 1958 during our 90th year of building steam engines.

With increasing shortages and rising prices of petroleum fuel, a growing number of shipowners are considering the practicality of returning to readily available coal...and that means steam engines by Skinner! If you'd like to tap our 112 years of experience building steam engines for a wide variety of ship and shore applications, call or write:



POWER DIVISION SKINNER ENGINE COMPANY

A Subsidiary of Banner Industries, Inc.

Box No. 1149, Erie, Pennsylvania 16512 USA Phone 814 454-7103 Telex 91-4481



For two upriver coal customers with different operations: upper left, two 195 x 26 x 11 barges; right, a 170 x 20 x 11 barge; foreground, 195 x 35 x 12 hazardous cargo tank barge.

We design each barge for your cargo, so it works more efficiently than one designed for everyone's cargo.

Regardless of similarities between two cargos, a barge built to handle your particular shipping operation and cargo works more efficiently than a standard design, assembly-line barge built for everyone. For whatever cargo you ship, we'll design and build a barge to your specifications and requirements.

Whether you need a general commodity deck or hopper barge, or a sophisticated tank barge with Subchapter "O" cargo requirements, HBC will design a barge with the features and accessories to ship your cargo, your way. And we build them in the size you need, up to 300-feet in length, for single or multiple cargos.

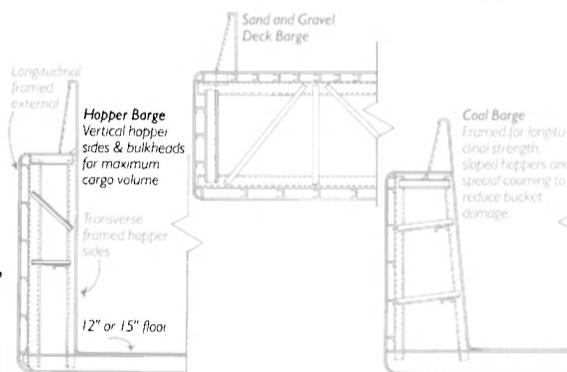
Specify: A hopper and coaming to speed unloading and deflect clamshell

buckets. Rub bars on each barge side to reduce plate wear and deflect other barges. A hopper liner that speeds vacuum unloading of fine powdery cargo. Any combination, layout or capacity of pumping, piping, power, heating or cover systems. Framing, welding, plating or coatings and linings.

Go beyond options and get what you want.

Whatever your cargo, we'll design a barge to match the way you ship it. Like nobody else's barge, for nobody else's cargo.

Our design and construction flexibility, experienced craftsmanship, and advanced facilities, produce quality barges built for each customer's shipping operation, that are competitively priced with barges built for everyone's operation. Contact us, and we'll build one your way.



HBC Barge™

HBC Barge, Inc.

Brownsville, Pennsylvania 15417

Phone: (412) 785-6100

**Construction To Start In Early '82
On \$46 Million Bath Repair Yard**

Bath Iron Works, Portland, Maine, ex-



**Bergeron Delivers 260-Ft.
Oceangoing Barge To
Central Marine Service**

A new, \$1.7-million deck barge almost a city block in length recently joined the fleet of Central Marine Service, Inc., New Orleans-based barge rental company.

The CMS 1263, constructed by Bergeron Industries, Inc., measures 260 feet long, 72 feet wide,

and 16 feet deep. Designed for 2,000 pounds per square foot, the barge can carry 5,147 long tons of cargo at a load line draft of 12 feet 7 $\frac{3}{4}$ inches.

The vessel, built to American Bureau of Shipping classification and certified by the U.S. Coast Guard for unmanned ocean service, contains 1,040 tons of steel and is equipped with heavy duty fenders.

The design was model tested at

the University of Michigan prior to construction.

Killian L. Huger Jr., Central Marine president, said a sister barge of the same type is under construction at Bergeron and will be delivered in several weeks.

Central Marine is one of the largest barge rental firms in the Gulf area, supplying a wide range of inland and ocean barges, available at New Orleans, Houma, and Venice, La.; Houston and Aransas Pass, Texas; and Mobile, Ala.

**Alan F. Hauff Named
Assistant GM, Repair
Division At St. Louis Ship**

Alan F. Hauff has been appointed assistant general manager for marine repair at St. Louis Ship, it was announced by Edward Renshaw, president.



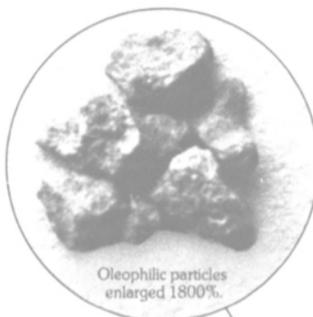
Alan F. Hauff

Mr. Hauff will direct all aspects of marine repair work at the St. Louis yard, including development of new business, customer service, estimating and bidding, and management and direction of the river repair effort.

Mr. Hauff returns to St. Louis Ship from Riverway Shipyard, Grafton, Ill., where he was general manager for the past three years.

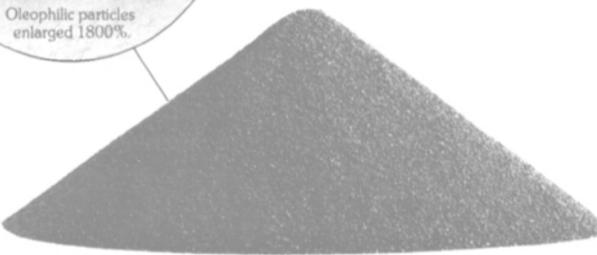
St. Louis Ship is a division of Pott Industries Inc., a subsidiary of Houston Natural Gas Corporation.

Oil/water separation made simple.



Oleophilic particles enlarged 1800%.

Chemically treated oleophilic particles are used for the exclusive integral, permanent filter bed.



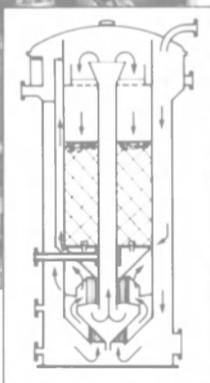
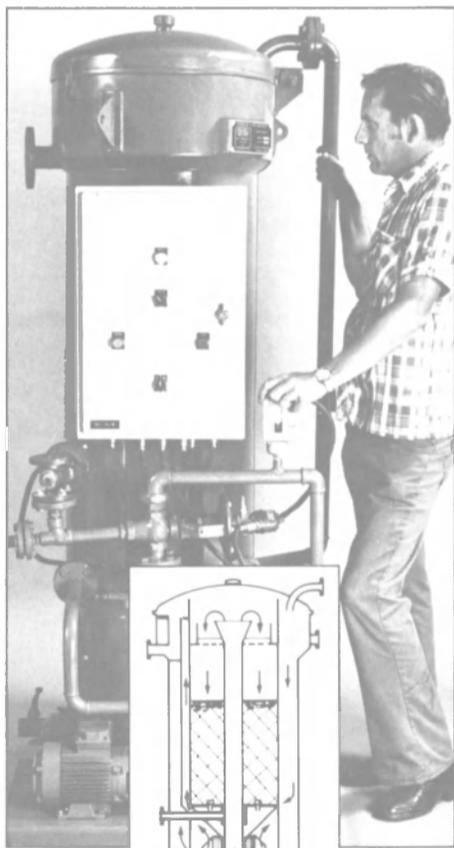
BUTTERWORTH® SFC BW separators feature a permanent filter bed (no dirty cartridges to change, no messy disposal). Automatic operation without attendance is available. U.S. Coast Guard approved.

Special Filtering Material.

One outstanding feature of SFC BW (Separator Filter Coalescer Bilge Water) Oil/Water Separators is the permanent final filter bed. Composed of specially treated oleophilic particles, it can be used over and over again. With heavy use, an annual topping of 5% to 15% is the only filter bed maintenance required. Moreover, treated water discharges are typically less than 2 parts per million of oil... well below the maximum allowable 15 parts per million.

Unattended Operation with Automatic Option.

Because of the permanent final filter bed, SFC BW Separators ordered with the automatic option can operate unattended for weeks at a



automatically starts again.

The 20-minute back-flush cycle occurs only once every 12 to 24 hours of operation, depending upon oil concentration.

Unique Compact Design.

Because of the permanent filter bed, which requires only limited access annually, SFC BW units are very compact. All processing takes place in a single vertical cylinder requiring a minimum of deck space. A 2 cubic meter per hour unit, for example, is only 2 feet in diameter.

Every SFC BW unit is equipped with its own pumps designed to meet a vessel's needs. They do not rely on existing bilge pumps.

U.S.C.G. Approved.

In U.S. Coast Guard certification tests, BUTTERWORTH® SFC BW Oil/Water Separators exceeded U.S.C.G. and IMCO A.393(X) requirements.

SFC BW Oil/Water Separators have also been approved in conformance with A.393(X) by France, Germany, Greece, Italy, Netherlands, Norway,



a pre-set degree of oil saturation, a very accurate vacuum-operated controller stops separation, initiates a cleansing back-flush cycle and sounds an alarm. After back-flushing, separation

Get All the Facts.

SFC BW Oil/Water Separators are available with capacities from 1/2 to 10 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.



Butterworth Systems

BUTTERWORTH SYSTEMS INC.
224 Park Avenue, Box 352
Florham Park, N.J. 07932, USA
Telephone: (201) 765-1546
Cable: BUTT WORTH
NEW YORK
Telex: 136434

BUTTERWORTH SYSTEMS (UK) LTD.
123 Beddington Lane
Croydon CR9 4NX, England
Telephone: 01-684-4049
Cable: MAROPEDOK
CROYDON
Telex: 946524

*In Continental Europe, contact:
Societe d'Etudes et
de Realisations
d'Equipements Petroliers
11, rue du Pont V*

**Free Brochure On Full
Line Of Ropes, Slings,
Fittings And Cargo Gear**

A 12-page color brochure describing the wide range of marine products manufactured and supplied by Atlantic Cordage and five affiliated companies is being offered by the New Jersey firm.

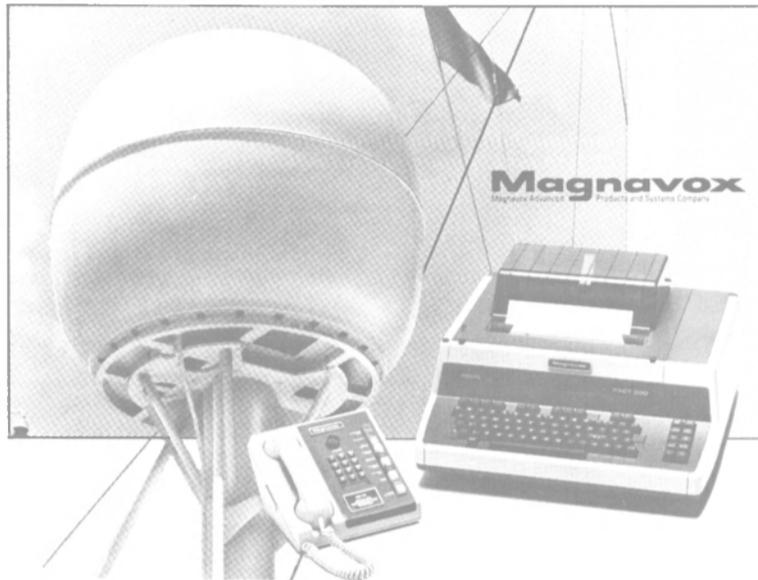
Atlantic of Carteret, N.J., illustrates in photographs and drawings full specifications of its complete line of synthetic, manila and wire rope, chain and wire rope slings, end fittings, and related equipment.

Specification charts of mechanical spliced slings and 6 by 19 and 6 by 37 hoisting ropes are also included.

A wide range of tarpaulins, covers, hoses, slings and nets fabricated in canvas or in vinyl by the Atlantic Industrial Supply Corp. are also depicted.

Also in the brochure is the complete line of gear manufactured for the offshore oil and commercial fishing industries by the Offshore Marine Supply Corp. of Cape May, N.J. Many types of shipboard ladders, oars, and paddles, as well as boatswain chairs and pyrotechnic chests provided by the A.L. Don Company of Matawan, N.J., are detailed in the brochure.

Do your ships qualify for MARAD'S NDF Communications Program?



Then Nav-Com's NDF Package is the solution for your fleet .

Nav-Com has worked with Magnavox and Harris— the top manufacturers in their fields— to bring you the most complete and highest quality NDF package available. Couple this with Nav-Com's professional Engineering, Installation, Training, and Support Service and you have the ideal solution...efficient, economical qualification Program.

Nav-Com's profession assist you with a tech use in preparatio application.

We want you to ha minimum cost to you. and let us tell you the

NAV

MAGNAVOX SATELLITE COMMUNICATIONS

The Magnavox MX-Series of Communication and Navigation equipment are world renowned for their performance and reliability on thousands of sea going vessels of all flags. As a pioneer in the development of Satellite Navigation and Communication systems for the US Government, the same technology and experience has been applied to the commercial marine products. High reliability coupled with a factory trained world-wide support network assures the shipowner of a low cost of ownership.



HARRIS
RCA is also re

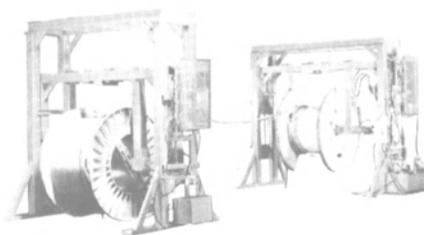
The Nav-Com NDF Package provides:

- * Full and complete compliance with MARAD specifications.
- * Lowest cost of ownership
- * Proven reliability from the Industry's top manufacturers— Magnavox/Harris/Nav-Com
- * Engineered Installation Survey Plan for your approval.
- * Computerized Electromagnetic Compatability Analysis to assure minimum RFI.
- * Professional Installation for future trouble-free operation.
- * Complete system test and checkout.
- * Thorough Operator Training Program.
- * Computerized H.F. Propagation Study of your major routes.
- * Complete Installation Documentation.
- * Nav-Com's continuing support program

Increase Profits T

TAKE-UP, PAY-O WIRE, WIRE RO OTHER FLEXIB

Shaftless Pay-Out



NAV-COM Incorporated
9 Brandywine Drive,
Deer Park, New York, 11729
Telephone: (516) 667-7710
Telex: 645744 NAVCOM NY DEER

Stationary Reeling

For those applications needing the benefit of a reeling and coiling machine, the RSVS II Series is This model utilizes a hydraulic jack for raising a the reel. The RSVS II Series is specifically intend heavy duty applications and under maximum load



Principals shown above at the Philadelphia SNAME meeting are, left to right: F.L. Pavlik, discussor, of Keystone Shipping; J.R. Wittmeyer, coordinator, Sun Ship; M.E. Willis, author, Sun Ship; C.W. Lofft, Section secretary-treasurer, Sun Ship; R.C. Button, discussor, J.J. Henry; and T.P. Campbell, Section chairman, Sun Ship.

SNAME Philadelphia Section Discusses Ship Design By Personal Computers

The Philadelphia Section of The Society of Naval Architects and Marine Engineers held its

personal Computer as an Aid to Preliminary Ship Design," describes a system that is intended to uti-

Three Top Management Changes At Levingston

Edward E. Paden, president of Levingston Industries, Inc., has announced three senior management assignments resulting from the formation of two new companies within the Levingston Group.

Joe Barrios, currently president of Levingston Shipbuilding Company, has been appointed president of the newly formed Levingston Trading Company, based in Orange, Texas.

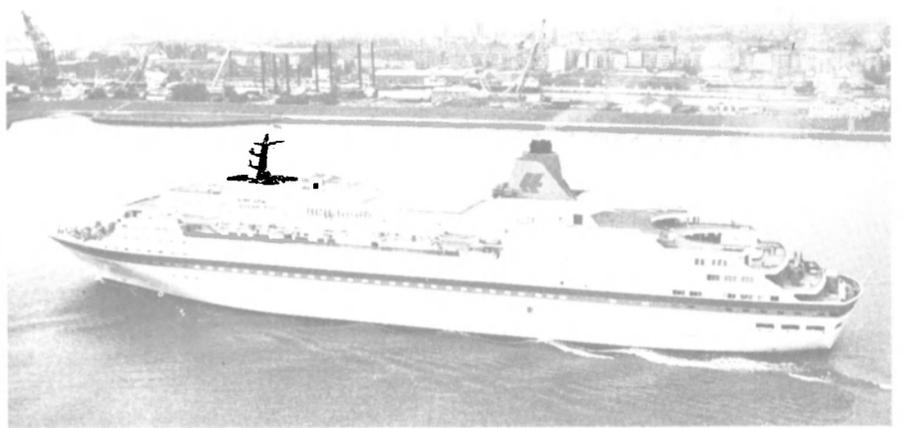
John Serrie, currently vice president, operations, succeeds Mr. Barrios as president of Levingston Shipbuilding Company.

Joe Wise, president of Levingston Marine Corporation, based in Annapolis, Md., is appointed to the additional position of president of the newly formed company—Levingston International, A.G., which will be based in Zug, Switzerland.

Commenting on the formation of Levingston Trading Company, Mr. Paden said that Levingston's recent technology exchange programs with Ishikawajima-Harima Heavy Industries Co., Ltd., and its long association through licensing with Mitsui Engineering and Shipbuilding Company, Ltd., had illustrated the attractiveness of the trading company approach as practiced by the large Japanese engineering groups. Levingston Trading Company will initiate a similar approach through the activities of five existing Levingston Group companies—three marine equipment manufacturing companies, an equipment leasing company and a marine supply company.

With regard to the formation of Levingston International, Mr. Paden said that for several years now Levingston has been sun-

thor, Texas, which builds rigs and other offshore equipment and operates Levingston's ship repair facilities, with the largest existing fleet of drydocks on the Gulf Coast; Levingston Trading Company, in Orange, Texas, which will manage Levingston's activities in the development, production, sale, and leasing of marine equipment and supplies; and Levingston Marine Corporation, in



The new cruise ship M/V Europa (35,000 grt, 600 passengers plus 275 crew) sails down the Weser River for trials by the Bremer Vulkan shipyard.

M/V Europa Completes Sea Trials; Luxury Cruise Liner Filled With Many Environmental Safeguards

The new flagship of the German merchant fleet, the luxury liner M/V Europa, recently completed almost three days of sea trials in the North Sea. The 35,000-grt liner is scheduled to

70/125 BL slow-speed reversible diesels, each with a maximum continuous output of 10,640 kw (2 by 14,460 hp) driving a five-blade fixed-pitch propeller at a service speed of 21 knots. Cruis-

Annapolis, Md., which provides naval architectural and marine engineering services, including engineering support of six overseas shipbuilding companies that are currently licensed to build Levingston-designed drill rigs.

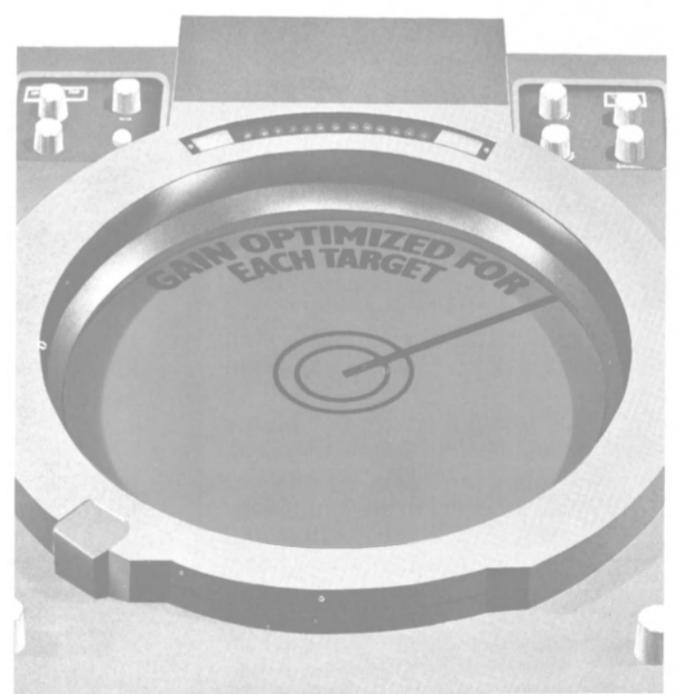
Mr. Paden went on to say that he expects Levingston to continue to grow in its traditional markets with orderly diversification into other marine-related activities.

Free Brochure Details Lube Oil Performance In Four Major Diesels

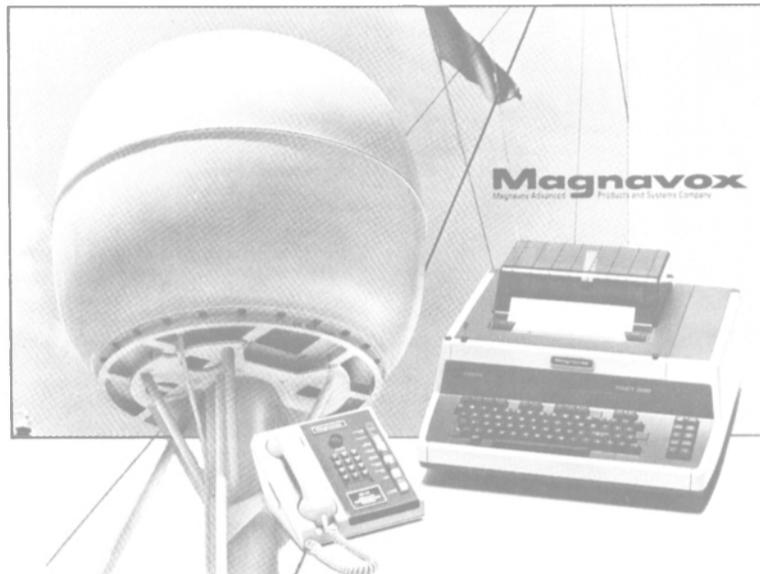
Performance of Shell Oil Company's MVI Caprinus® R Oil in four major makes of medium-speed diesels is detailed in a new 12-page full-color brochure just published by Shell.

Text and photographs are used

Four clear reasons why Racal-Decca's



Do your ships qualify for MARAD'S NDF Communications Program?



Then Nav-Com's NDF Package is the solution for your fleet .

Nav-Com has worked with Magnavox and Harris— the top manufacturers in their fields— to bring you the most complete and highest quality NDF package available. Couple this with Nav-Com's professional Engineering, Installation, Training, and Support Service and you have the ideal solution...efficient, economical qualification Program.

Nav-Com's professional technicians can assist you with a technical application in preparation for your application.

We want you to have the minimum cost to you, and let us tell you the

MAGNAVOX SATELLITE COMMUNICATIONS

The Magnavox MX-Series of Communication and Navigation equipment are world renowned for their performance and reliability on thousands of sea going vessels of all flags. As a pioneer in the development of Satellite Navigation and Communication systems for the US Government, the same technology and experience has been applied to the commercial marine products. High reliability coupled with a factory trained world-wide support network assures the shipowner of a low cost of ownership.



The Nav-Com NDF Package provides:

- * Full and complete compliance with MARAD specifications.
- * Lowest cost of ownership
- * Proven reliability from the Industry's top manufacturers — Magnavox/Harris/Nav-Com
- * Engineered Installation Survey Plan for your approval.
- * Computerized Electromagnetic Compatibility Analysis to assure minimum RFI.
- * Professional Installation for future trouble-free operation.
- * Complete system test and checkout.
- * Thorough Operator Training Program.
- * Computerized H.F. Propagation Study of your major routes.
- * Complete Installation Documentation.
- * Nav-Com's continuing support program

NAV-COM Incorporated
9 Brandywine Drive,
Deer Park, New York, 11729
Telephone: (516) 667-7710
Telex: 645744 NAVCOM NY DEER

NAV



Principals shown above at the Philadelphia SNAME meeting are, left to right: F.L. Pavlik, discussor, of Keystone Shipping; J.R. Wittmeyer, coordinator, Sun Ship; M.E. Willis, author, Sun Ship; C.W. Lofft, Section secretary-treasurer, Sun Ship; R.C. Button, discussor, J.J. Henry; and T.P. Campbell, Section chairman, Sun Ship.

SNAME Philadelphia Section Discusses Ship Design By Personal Computers

The Philadelphia Section of The Society of Naval Architects and Marine Engineers held its October meeting at the Engineers' Club in center city, Philadelphia. About 70 members and guests turned out for the presentation of a paper on an interesting aspect of the use of the hand-held computer.

Following the social hour and dinner, chairman **Tom Campbell** turned the session over to coordinator **Jim Wittmeyer**, who introduced the speaker and author, **Merville E. Willis** of Sun Ship.

Mr. Willis's paper, "The Per-

sonal Computer as an Aid to Preliminary Ship Design," describes a system that is intended to utilize the availability of the personal programmable computer to enable the designer to obtain a much greater grasp of the hull characteristics at an early stage. It is possible to obtain the hydrostatics at shallow drafts — information that is essential for designing effectively to the IMCO ballast rules for tankers.

The discussors for the evening were **Frank L. Pavlik**, **Daniel J. Dekoff**, **Jan A. Lorenzen**, and **Roger Button**.



The new cruise ship M/V Europa (35,000 grt, 600 passengers plus 275 crew) sails down the Weser River for trials by the Bremer Vulkan shipyard.

M/V Europa Completes Sea Trials; Luxury Cruise Liner Filled With Many Environmental Safeguards

The new flagship of the German merchant fleet, the luxury liner M/V Europa, recently completed almost three days of sea trials in the North Sea. The 35,000-grt liner is scheduled to undertake her maiden voyage on January 8, 1982.

The vessel was built by Bremer Vulkan shipyard, Bremen, West Germany, and was launched and christened on December 22, 1980. The ship is owned by KG MS Europa de Breschag, Bremer Schiffsvercharterungs-AG & Co. KG, from which Hapag-Lloyd AG will be taking her on time-characters when she enters into service.

The Europa is powered by two Bremer Vulkan M.A.N. K7SZ

70/125 BL slow-speed reversible diesels, each with a maximum continuous output of 10,640 kw (2 by 14,460 hp) driving a five-blade fixed-pitch propeller at a service speed of 21 knots. Cruising speed will normally be in the 14 to 18-knot range. The ship will accommodate 600 passengers and a crew of 275. Built to Germanischer Lloyd classification, the 656-foot-long cruise liner is the first newbuilding to be placed in passenger service by Hapag Lloyd since World War II.

The generating equipment comprises five diesel-driven generators which deliver a total 8,500 kw, plus two shaft generators driven by the main engines and designed to use surplus output while cruising. In addition, one emergency generator at 875 kva or 700 kw is supplied.

Besides the exhaust gas boilers linked with the main and auxiliary engines, the Europa is equipped with two oil-fired boilers each providing 12,500 kg/h of steam generation.

In addition to the luxurious surroundings, restaurants, and general ambiance, the design of the vessel incorporates many safety features. A double-skin construction was employed in housing the generating and propulsion machinery — including a separate watertight compartment for the former; modular construction was employed for the propulsion and generating machinery, switchgear, and steam generating plant, thus providing the required duplication; the engine room was fitted with a double carbon dioxide fire extinguisher system; the main fire bulkheads were built without air-conditioning vent breaks; and all passenger cabins were positioned above the bulkhead deck.

The Europa was subjected to extensive model testing for hydrodynamics and aerodynamics in order to optimize resistance, propulsion, behavior in heavy seas,

Z-Bom

Bottom & Zone Sampler

Zesco proudly introduces the sampler that will end problem sampling.

Z-BOM (patent pending) is an all in one liquid sampler for 3 cork types with maximum capacity of 1 quart.

One Z-BOM sampler (patent pending) allows you to take accurate samples at any level — zone, bottom or off-bottom.

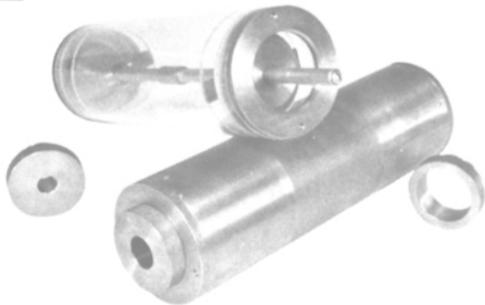
Its unique interchangeable construction was designed to meet your needs. Visual inspections are now convenient with the optional clear plexiglas body. It is also easier to clean.

Available units come in brass, or stainless steel.

For further information, call or write Zesco, Inc.



ZESCO, INC. 3694 Westchase Dr., Houston, Texas 77042
(713) 978-6120 TWX 910-881-5399



maneuverability, propeller cavitation and oscillations, exhaust gas flow, and wind load. Equally exhaustive tests were made regarding static and dynamic behavior of the structural elements. Noise, vibration, and ventilation tests were conducted with full-scale, mock-up cabins.

When the Europa was designed, special attention was paid to environmental protection, and as a result the ship satisfies all conceivable national and international requirements.

Wind tunnel tests were conducted so that passengers would not be exposed to exhaust gases on the open-air decks. This was achieved. The design and dimensions of the funnel keep away all exhaust gases.

Engine exhaust outlets: noise and dirt on open-air decks is minimized by combining various sound-reduction units. Engine exhaust outlets have separate noise-reducers. There are a total of 11 exhaust outlets: two for the main engines, five for the diesel generators, one for the port emergency diesel, two for the auxiliary boilers, and one for the garbage incinerator.

Exhaust gas outlets from the garbage incinerator: soot and odors from this unit are also nonexistent on the open decks. The garbage incinerator is fitted with nine parallel cyclones which separate ash on the gravity principle.

Three sewage treatment plants are provided for waste disposal.

The following installations are provided to prevent oil pollution: two sloptanks for the storage and interception of bilge water; two oil extraction units for the separation of bilge water. The de-oiled water conforms to the latest IMCO regulations for coastal waters (oil residue of less than 15 ppm; and water pumped overboard by the extraction units is continually monitored. If permitted levels are exceeded, the installations automatically stop the discharge of oil-polluted water. Oil residues are burnt in the garbage incinerator.

Garbage is collected by means of a shaft running underneath all the accommodation decks.

Facilities are also available aboard the Europa for the disposal of noncombustible solid objects such as bottles and cans.

Award RCA \$339 Million In Contracts For Navy's Aegis Weapon Systems

RCA Missile and Surface Radar, Moorestown, N.J., has received \$339 million in contracts for Aegis weapon systems for three additional U.S. Navy ships in the Aegis class of guided missile cruisers.

The awards cover production and integration effort for the third and fourth cruisers in the

series, CG 49 and CG 50. Delivery of the weapon systems for these ships is scheduled for 1983-84.

The awards also encompass long-lead production items for CG 51, the fifth cruiser in the class.

The Aegis class's first ship, Ticonderoga, was christened May 16, 1981, by First Lady Nancy Reagan. Ticonderoga will be commissioned and join the fleet in early 1983.

The Aegis weapon system, which is the nucleus of the cru-

ser's combat system, was developed by RCA. Radar-based and computer-controlled, the system is capable of automatically detecting, tracking, and engaging multiple missile, aircraft, and surface threats simultaneously.

RCA produces AN/SPY-1A radar systems for the Aegis weapon systems which are assembled and tested—less ordnance—at RCA's Moorestown plant prior to delivery to Ingalls Shipbuilding. RCA is also responsible for en-

gineering and integrating the complete ship combat system.

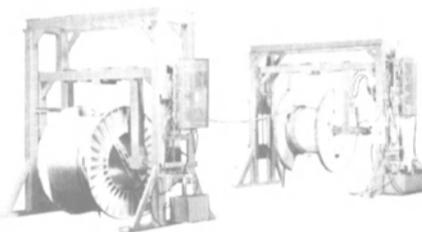
Aegis cruisers form a new class of gas turbine-powered ships based on the proven hull and propulsion system designs of the Spruance-class destroyers. The Navy plans to build at least 18 of the Aegis cruisers during the 1980s. The \$338.9-million awards include previously announced funding of \$109.7 million for long-lead production for the third and fourth systems.

Increase Profits The REEL-O-MATIC® Way!

SYSTEMS, INCORPORATED

TAKE-UP, PAY-OUT & COIL YOUR WIRE, WIRE ROPE, CABLE AND OTHER FLEXIBLE MATERIALS.

Shaftless Pay-Out & Take-Up Machinery

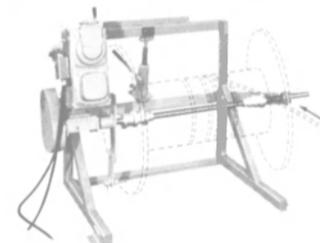


ROM's WT (Walk-Through) Pay-Out and WTCD (Walk Through Center Drive) Take-Up Series machinery allows the machine to be bolted right to the floor. When the reels are loaded and unloaded they sit directly on the floor. No pits, ramps or shafts — just labor saving speed and safety. Lifting and Stub Shaft (pintle) positioning is achieved by an independent hydraulic system.

UP TO 20,000 LB. CAPACITIES*

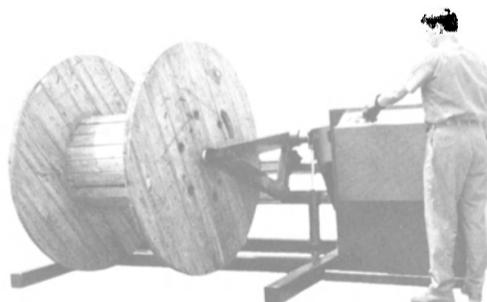
Stationary Reeling & Coiling Machinery

For those applications needing the benefit of a stationary reeling and coiling machine, the RSVS II Series is the answer. This model utilizes a hydraulic jack for raising and lowering the reel. The RSVS II Series is specifically intended for use in heavy duty applications and under maximum load conditions.



UP TO 5,000 LB. CAPACITIES*

Floor Mounted Pintle Take-Up & Pay-Out Equipment



The FMPT 5M shown above is a floor mounted pintle type shaftless take-up machine. Lifting and stub shaft (pintle) positioning is achieved by hydraulic cylinders with a touch of a button. A hydraulic motor for power winding the material onto the reel is used. The FMPT, like much of ROM'S product line, requires a single operator.

UP TO 20,000 LB. CAPACITIES*

TWO YEAR WARRANTY ON ALL PRODUCTS

*CALL (717) 252-3614 About Your Special Applications

REEL-O-MATIC®

SYSTEMS, INCORPORATED

Or Write:
418 Hellam St.
Wrightsville, Pa. 17368

Three Top Management Changes At Levingston

Edward E. Paden, president of Levingston Industries, Inc., has announced three senior management assignments resulting from the formation of two new companies within the Levingston Group.

Joe Barrios, currently president of Levingston Shipbuilding Company, has been appointed president of the newly formed Levingston Trading Company, based in Orange, Texas.

John Serrie, currently vice president, operations, succeeds Mr. Barrios as president of Levingston Shipbuilding Company.

Joe Wise, president of Levingston Marine Corporation, based in Annapolis, Md., is appointed to the additional position of president of the newly formed company—Levingston International, A.G., which will be based in Zug, Switzerland.

Commenting on the formation of Levingston Trading Company, Mr. Paden said that Levingston's recent technology exchange programs with Ishikawajima-Harima Heavy Industries Co., Ltd., and its long association through licensing with Mitsui Engineering and Shipbuilding Company, Ltd., had illustrated the attractiveness of the trading company approach as practiced by the large Japanese engineering groups. Levingston Trading Company will initiate a similar approach through the activities of five existing Levingston Group companies—three marine equipment manufacturing companies, an equipment leasing company and a marine supply company.

With regard to the formation of Levingston International, Mr. Paden said that for several years now Levingston has been supporting its overseas licensees through the provision of engineering services and the procurement of U.S.-manufactured equipment and supplies. The establishment of a specialized organization is a logical development for the coordination of these overseas activities.

Mr. Paden also commented on the continued expansion of the Levingston Group's activities. Revenues have grown at an annual rate in excess of 25 percent over the past five years and are expected to continue to grow at about this rate. In order to keep each of the Group's activities at a manageable level it was necessary to create additional companies within the Group. Levingston's activities will now be organized into four principal companies, all subsidiaries of Levingston Industries, Inc.:

Levingston Shipbuilding Company, in Orange, Texas, which builds offshore rigs and commercial ships and is currently bidding on U.S. Navy shipbuilding contracts; Texas Gulfport Shipbuilding Company, in Port Ar-

thur, Texas, which builds rigs and other offshore equipment and operates Levingston's ship repair facilities, with the largest existing fleet of drydocks on the Gulf Coast; Levingston Trading Company, in Orange, Texas, which will manage Levingston's activities in the development, production, sale, and leasing of marine equipment and supplies; and Levingston Marine Corporation, in

Annapolis, Md., which provides naval architectural and marine engineering services, including engineering support of six overseas shipbuilding companies that are currently licensed to build Levingston-designed drill rigs.

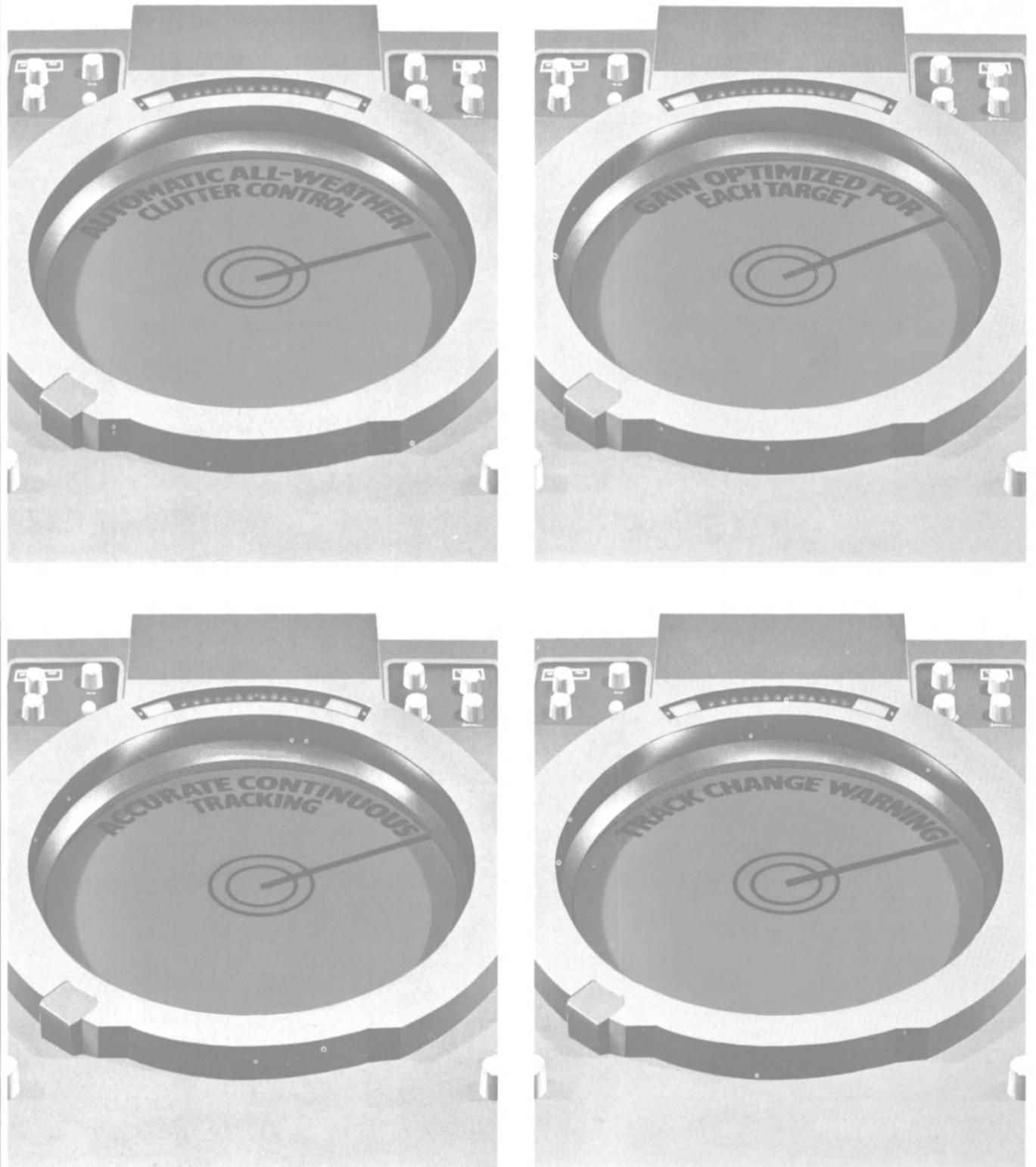
Mr. Paden went on to say that he expects Levingston to continue to grow in its traditional markets with orderly diversification into other marine-related activities.

Free Brochure Details Lube Oil Performance In Four Major Diesels

Performance of Shell Oil Company's MVI Caprinus® R Oil in four major makes of medium-speed diesels is detailed in a new 12-page full-color brochure just published by Shell.

Text and photographs are used

Four clear reasons why Racal-Decca's



Mark Twain, on piloting a riverboat:

“I loved that profession far better than any I have followed since, and I took a measureless pride in it.”

“Old Times on the Mississippi”

There's a deep feeling of accomplishment that goes with pushing tons of barge and freight up and down the river. Now, as in the 1850's, it takes superior men and rugged machinery. Gulf Marine Lubricants are manufactured for these men and this machinery. Gulf products and Gulf services meet the standards of the river.

Gulftow® Oils for marine diesel crankcases

Gulf Harmony® Oils for lubricating gears, bearings and compressors

Gulf Harmony AW Oils for hydraulic systems

Gulf Fluid Lubcotes® to protect wire ropes, chains & sprockets

Gulf No-Rust for rust prevention

Gulfgem and Gulfcrown® Greases for multi-purpose applications

Gulf-Check engine diagnostic analysis

Bilge oil/water separators

For information on any Gulf marine product, ask your Gulf pro, or write for the Gulf Inland & Coastal Marine Lubricants brochure and Midstreamers Directory. Gulf Oil Corporation, P.O. Box 1563, Houston, Texas 77001



Gulf Oil Corporation



Outstanding Vessels Review — Blue Ridge

(continued from page 22)

cargo tanks. Each tank is fitted with a deep well cargo pump.

The 658-foot-long ship is also fitted with a cylindrical appendage-type bulbous bow to improve speed, and is powered by a GE steam turbine engine. The Blue Ridge and her sister ships incor-

porate state-of-the-art equipment and meet the latest safety and environmental protection standards including double bottoms, a clean segregated ballast system, an inert gas system, a sewage treatment plant, collision avoidance radar, and a backup steering system.

The ships, ordered by Union Oil in April 1979, were built entirely without federal subsidy. The shipbuilder is a wholly owned subsidiary of Morrison-Knudsen Company, Inc., Boise, Idaho.

The Blue Ridge hull was constructed in the flat-bottomed, 1,000-foot-long NASSCO building dock. Launching was accomplished by flooding the dock and floating out the vessel.

The name Blue Ridge is in honor of the mountain range in the Appalachians extending from New England to Georgia. The second of the sisterships, Coast Range, was launched on January 10, 1981, and the third, Sierra Madre, was launched on May 2. The Blue Ridge will transport products from Union Oil's refinery in Beaumont, Texas, to Atlantic and Gulf Coast ports.

S/S BLUE RIDGE

Main Propulsion	General Electric turbines and gears
	13,000-shp,
	1,500-kw ship service turbo-generators
Propellers	Ferguson
Shaft	Waukesha
Bearings	Waukesha
Panels	General Regulator
Steering	Sperry Marine
Boilers	Foster Wheeler
Condensers	Transamerica DeLaval
Pumps	Worthington (27) Deepwell cargo
Radar	Raytheon
Navigation	ITT Mackay
Winches and Davits	Lake Shore
Anchor/chain	Hewett Marine
Fairleads	Appleton Marine

GALLEON DIAMOND

The 19,407-dwt multipurpose cargo ship Galleon Diamond was delivered to Galleon Shipping Corporation of the Philippines by the Hiroshima Works (Innoshima) of Hitachi Zosen, Japan. She is the first of three sister ships ordered from Hitachi by Galleon; one more will be constructed at the Hiroshima Works and the other was built at the Setoda Shipyard of Naikai Zosen, an affiliate of Hitachi.

Galleon Diamond is designed to carry a variety of cargoes such as containers, lumber, bulk, etc. She will also transport tobacco, coconut products, and hemp, for which all holds have been fitted with dehumidifiers. The ship is equipped with three 16-ton cranes for general cargo, and one 50-ton, twin-type deck crane for extra-heavy cargoes such as construction machinery.

The single main engine is the
(continued on page 26)

COATINGS WITH VERSAMID® 280-B-75 POLYAMIDE ADDUCT SHOW THEIR COLORS THROUGH 4000 HOURS OF SALT FOG TESTS.



Henkel's exclusive Versamid 280-B-75 Polyamide Adduct, combined with our Genamid® 2000 Amidoamine Resin and an epoxy resin, are the basis for the tough coating systems defined in Navy specification MIL-P-24441. (SHIPS)

These marine and industrial coatings are inherently corrosion resistant. They outperform even traditional epoxy/polyamide systems formulated with costly rust inhibitive pigments. Even through 4000 hour salt fog and two-year Florida tidewater testing.

The Versamid 280 System also is ideal in situations where you can't get the substrate as clean as you would like. That's because of its excellent substrate wetting and moisture displacement characteristics.

What's more, it is a low viscosity resin and provides the solvent savings of higher solids. And it offers improved cure at low temperatures.

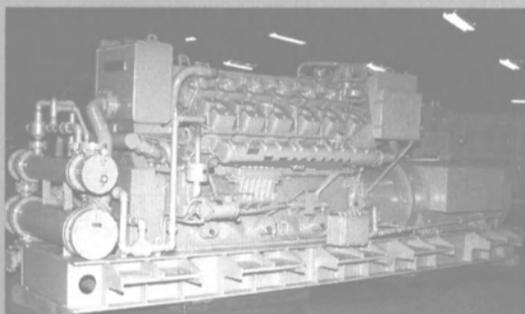
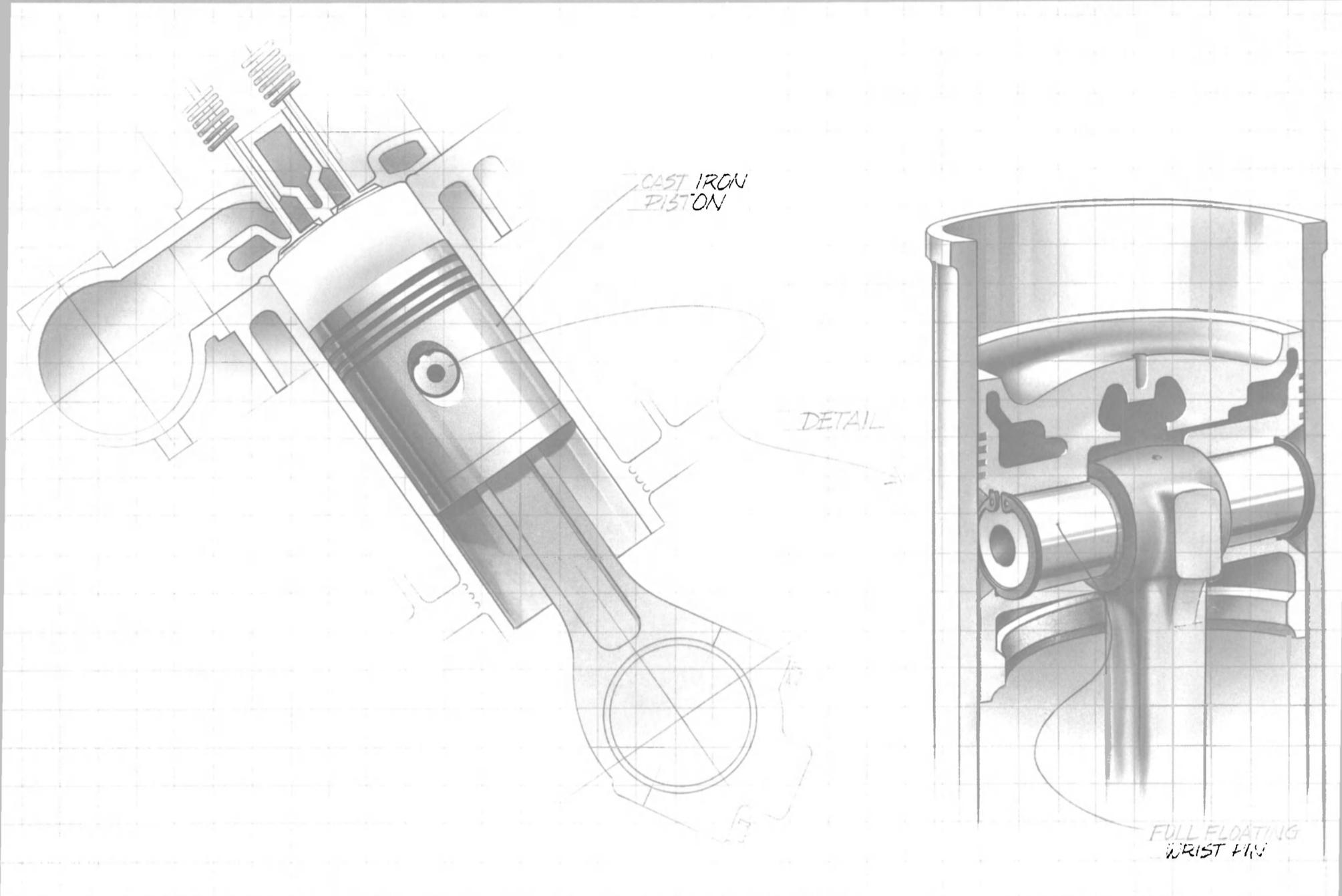
Versamid 280's patented technology makes it the industry standard. Years of use on Navy ships prove it can handle the toughest marine and industrial applications.

So when you need to show your colors in long-lasting marine and industrial maintenance formulations, Henkel's Versamid 280 can help. For more information about this unusual resin system, write: Resins Division, Henkel Corporation, 4620 West 77th Street, Dept. MR-121, Minneapolis, MN 55435.

Resins Division

Henkel

Waukesha dependability is simply a matter of detail.



Waukesha VHP marine diesel engines feature cast iron pistons. For good reason. Dependability. A cast iron piston has the strength to withstand peak combustion pressures encountered during heavy-duty operation. Cast iron's strength allows thinner piston walls, so there can be channels inside the piston for improved cooling. And since a cast iron piston is made of the same material as the cylinder liners, it has the same coefficient of expansion.

Waukesha's closer and more constant piston-to-liner clearance means easier starting when the engine's cold. Yet without the danger of seizing-up under high heat, heavy load conditions. Blow-by is minimized, and there's less chance of piston slap.

Overall, cast iron pistons reduce the chance of major engine breakdown.

Waukesha cast iron pistons are connected to forged connecting rods by full floating wrist pins. Wear is more evenly distributed and extended than with semi-floating or stationary pins.

Metallurgical detail is only one example of how Waukesha engineers dependability into marine diesels.

See your Waukesha distributor for the full story on Waukesha marine engines or engine generator ship service systems.

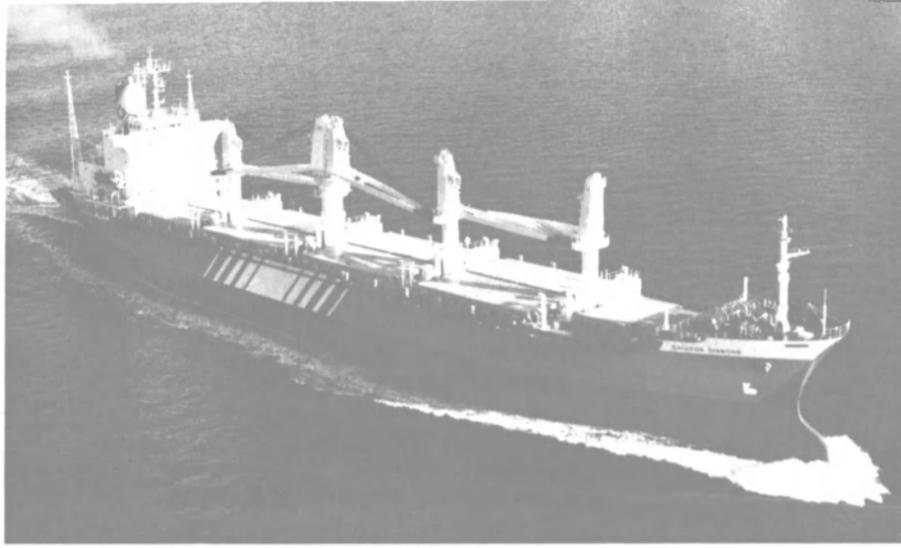
Waukesha

DRESSER

WAUKESHA ENGINE DIVISION
DRESSER INDUSTRIES INC.

WAUKESHA, WISCONSIN 53187

Write 373 on Reader Service Card



Outstanding Vessels Review — Galleon Diamond

(continued from page 24)

newly developed, long-stroke Hitachi/B&W diesel, type 6L67-GFC, with constant-pressure turbocharging. This fuel-efficient, two-stroke engine has a maximum continuous output of 11,200

bhp at 119 rpm; maximum trial speed was 19.8 knots.

Built to American Bureau of Shipping classification, the 13,886-gt vessel has an overall length of 498.7 feet, beam of 75.8 feet, depth of 46.3 feet, and design draft (full load) of 32.5 feet.

JOHN B. WATERMAN

The S/S John B. Waterman is a 23,500-dwt combination container and ro/ro ship that was built for Waterman Steamship Corp. by Sun Ship, Inc., of Chester, Pa. She is the first of two buildings for the owner.

The ship is intended to transport cargo along the North European trade route from Gulf and East Coast ports of the U.S. The 692-foot combination carrier can transport trailers and other wheeled vehicles, containers, and unitized or palletized cargo. The ship has the capacity of 762 forty-foot containers.

The forward section is designed for containerized freight and the main deck and hatch covers are capable of ro/ro operations. The aft part is 100 percent roll-on/roll-off. For ease in loading and unloading, the Waterman is equipped with a full slewing ramp on the stern, a self-sustaining container crane, side cargo ports, and a cargo elevator in the ro/ro holds.

The Waterman has a beam of 105.5 feet, a molded depth of 68 feet, and a draft of 33 feet. The ship is powered by a General Electric cross compound axial flow turbine engine that drives

(continued on page 28)

S/S JOHN B. WATERMAN

Main propulsion	General Electric
Gears	General Electric
Propellers	Bethlehem Steel
Shaft	Bethlehem Steel
Bearings	Waukesha
Generators	DeLaval
Generator Engines	Alco Power
Panels	Penn Panel
Main Boilers	Combustion Engineering
Engine Controls	Bailey
Main Condenser	Transamerica DeLaval
Steering	Sperry Marine
Steering Gear	Propulsion Systems (Frydenbo)
Pumps	Worthington, FMC, Warren
Fire Fighting	H.S. Hiller
Air Compressors	Ingersoll Rand
Distilling Plant	Aqua Chem
Bow Thruster	Bird-Johnson
Radar	ITT Mackay Marine
CAS	lotron Corp.
SCS	Comsat General
RDF/Radios/ Position Location	ITT Mackay Marine
Crane (Container)	Morgan Engineering
Winches/Windlass	SMATCO
Ramp, Cargo Doors, Elevator	MacGregor-Comarain
Cathodic Protection	Wilson Walton Int'l

◀ Write 314 on Reader Service Card

MAXIM®



DESALINATORS AND SILENCERS FOR THE ENTIRE MARINE INDUSTRY.

Few names have ever been better known for quality and dependability than MAXIM. A standard that has stood for more than 50 years. Today Maxim furnishes desalinators, including reverse osmosis systems, to provide fresh water for workboats, offshore platforms, tankers, submarines and large vessels of all types... units designed for optimum space savings and operation economy.

Equally, Maxim Silencers cover the waterfront with units designed for silencing or for silencing with heat recovery. And there are reliable Maxim heat exchangers and deaerators.

Become part of a legend... insist on Maxim, the first name in reliability and service.

Maxim backs it up!
Riley-Beard, P.O. Box 31115,
Shreveport, LA 71130.
Phone (318) 865-6351.

Nuclear submarine equipped
with Maxim desalinator.
General Dynamics Photo

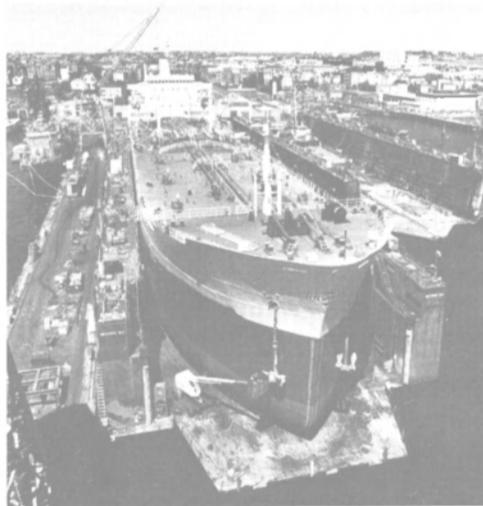


**“Nine more inches of beam,
and we'd have had to cut away
the stairways to get her in.”**

Richard Sobocinski,
Chief Estimator,
Bethlehem's Boston Yard



The *Irving Arctic*, squeezed into Dock No. 1 at Bethlehem's Boston Yard. Workmen repaired damage to the hull with less than 3 feet to move around in—the distance between the ship's sides and the wingwalls.



Talk about a tight fit! At our Boston yard it was the 90'3" beam of Kent Lines' *Irving Arctic* vs the 91' clearance between the inside stairways of the yard's big drydock. But a gentle dockmaster and some expert tugmanship made the docking happen without incident. On the other hand, the tanker's 629' length and 17,000-

ton displacement were easily accommodated on our No. 1 dock. We'll accommodate your ship, too—by taking out stairways if necessary, juggling established schedules to fit her in, working 'round the clock to help her make a sailing. We'll do what we can to make you feel at home, whatever Bethlehem yard you visit. Trust us.

BethShip 

Bethlehem Steel Corporation
Shipbuilding Department

Ship Repair Sales: One State St. Plaza, New York, NY 10004
Cables: BETHSHIP New York • Telex: 222-847 or 421-604 • Phone: (212) 558-9500
Drydocks in Boston, Baltimore, New York, and San Francisco Harbors, and at Beaumont, Texas.



JOHNSON CHEMSTAR

The 38,000-dwt chemical and product carrier Johnson Chemstar, the first of two technically sophisticated vessels built by Kockums Shipyard, Malmo, Sweden, was delivered this year to J.O. Odfjell Johnson A. S., Minde, Norway.

Reportedly one of the largest and most technically advanced in the world for the global shipment of chemicals, the vessel was designed to conform to all international safety and environmental regulations, both on the books and pending.

The vessel's hull was designed and built with segregated ballast tanks and double bottom. The center section contains 28 stainless-steel 316LN tanks that are classified for the transport of IMCO type II cargo. There are 10 zincsilicate-coated wing tanks that are classed for IMCO type III cargo. Each tank is equipped with its own stainless-steel piping and deep-well pumping system. The capacity of the pumps varies from 100 m³/h to 400 m³/h, depending on the size of the tanks. All cargo handling is controlled from a separate room in the deckhouse.

The Johnson Chemstar is pow-

Outstanding Vessels Review—John B. Waterman (continued from page 26)

a 22-foot-diameter, six-blade propeller 110 rpm at 32,000 shp through a double reduction gear. The vessel's design service speed is 20.9 knots.

There are two Combustion Engineering top fired single case welded wall boilers with a maximum heated steam flow of 102,751 lb/hr for each boiler. The operating steam conditions are 872 PSIG, at 955 degrees F.

ered by two independent Lindholmen S.E.M.T. Pielstick medium-speed turbocharged diesel engines, model 12PC2-5V. Each engine is coupled via a reduction gear to a KaMeWa controllable-pitch propeller—MCR: 11,500 kw, 15,800 bhp, 520 100 rpm. The epicyclic reduction gears are two Stal-Laval CPG—compact planetary gear type units.

The auxiliary machinery is powered by three V12A/126 four-stroke turbocharged V-type diesel engines from Hedemora Verkstad, Sweden. They deliver 1,074 kw at 1,200 rpm. Three ASEA alternators, type GBL 560MB, serve the auxiliary diesels, and the shaft alternators are two ASEA type GBL, producing 1,500 kva, 440 v, three-phase, 60 hz, at 1,800 rpm.

The ship is fitted with a bow thruster to improve maneuvering. The hydraulic system—seven Frano electrohydraulic units manufactured by Frank Mohn A. S., Bergen, Norway, are connected to 38 cargo pumps, three ballast pumps, two windlasses, seven mooring winches, two deck cranes, two F.O. transfer pumps, and one tank cleaning pump.

The Johnson Chemstar was dual classed by the American Bureau of Shipping and Det norske Veritas.

MADAME BUTTERFLY

The Madame Butterfly is the first in a series of four pure car/truck carriers (PC/TC) delivered by Kockums, A.B., Malmo, Sweden, to Wallenius Lines, Stockholm.

The 13-deck, 17,000-dwt Madame Butterfly is the first major ship of this type to be built outside Japan. She can transport 6,120 passenger cars or a combination of 2,900 cars and 520 commercial vehicles.

Designed for a service speed of 20.3 knots, the ship has an overall length of 198.12 m, a molded breadth of 32.25 m, a height to the sixth deck of 13.64 m (13.69 m aft), and a scantling draft of 11.5 m (about 650 feet, 105.8 feet, 44.8/44.9 feet and 37.7 feet).

Built to Lloyd's Register of Shipping classification, the vessel's propulsion is supplied by a Burmeister and Wain type 7 L80GFA direct-reversing diesel engine which is derated to 18,400 bhp at 106 rpm for fuel economy. It drives a solid propeller and is remotely controlled from the

bridge or from the engine control room.

The electrical supply is from three diesel engine-driven 2,000-kva, 1,600-kw, 440-volt alternators, each engine being a Wartsila-Vasa 4-stroke unit running at 720 rpm.

To conserve fuel, the autopilot is designed to reduce unnecessary course corrections. Each ship of this series has a 1,500-hp bow thruster.

MacGregor Scandinavia of Gothenburg was consulted by Kockums on the logistics involved in moving 6,120 cars on or off a vessel having 52,000 internal meters (about 170,612 feet) of roll.

MacGregor claims operating costs have been minimized because the ship design obtains the maximum deadweight within parameters of seaworthy integrity and because of the reduction of cargo handling time in port.

MacGregor contributed 13 separate items to the Madame Butterfly. These include the stern and side entry ramps, the six internal ramps, five deck covers and eight doors, and the fixed and hoistable car decks.



A Burmeister and Wain direct-reversing diesel engine powers the Wallenius Lines' newest vessel "Madame Butterfly" on her sea trials.

MARIGOLA

M. & B. Benetti Shipyards, Viareggio, Italy, delivered this sophisticated 12,000-dwt chemical carrier to Carbocoke S.p.A. di Navigazione di Palermo. The Marigola's propulsion—a G.M.T. CC 600.5 engine—is the pioneer commercial application of the new G.M.T. low-speed diesel.

The engine produces 8,250 hp at 250 rpm, driving a four-blade controllable-pitch propeller through a gearbox having a 2.083:1 reduction ratio. A power takeoff from the gearbox drives a 750-kw Ansaldo generator. The auxiliary machinery consists of two G.M.T. BL 230.6 diesel engines, each developing 1,225 hp at 900 rpm.

The Marigola has 22 cargo tanks—eight center stainless-

steel and 14 wing tanks coated with Rustban 191. The ship can load and unload three different products simultaneously. All the tanks are fitted with stainless-steel coils; the center tanks having AISI 316L Mos grade coils.

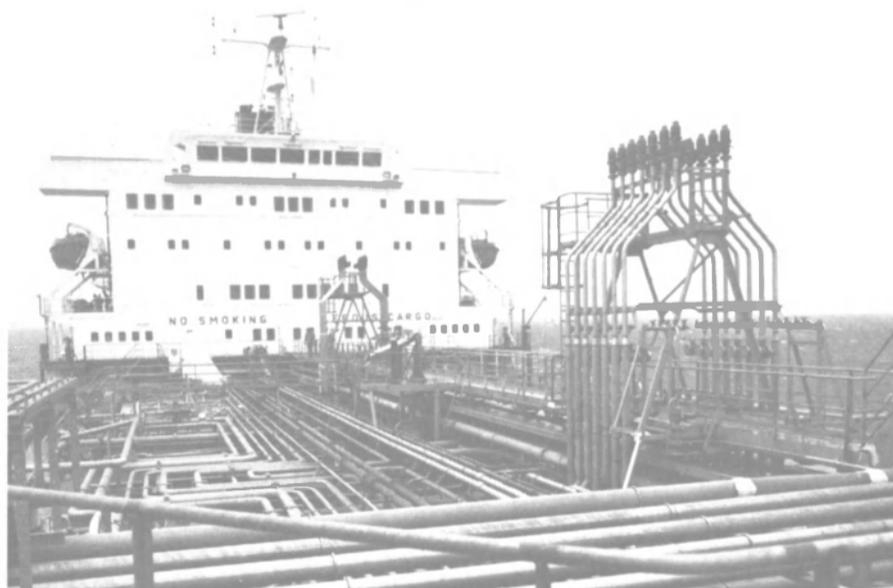
Each tank has its own piping and pumping system. There are 22 hydraulically powered submersible pumps, 16 of which are Termomeccanica Italiano CDVS 100s with a 80 m³/h capacity at 80 m head, and six are CDVS 150s with a 150 m³/h at 110 head. The stainless-steel pumps are fed by a hydraulic station supplying 960 kw of power.

Hydraulic power units are remotely controlled through two control panels arranged in a small

(continued on page 30)

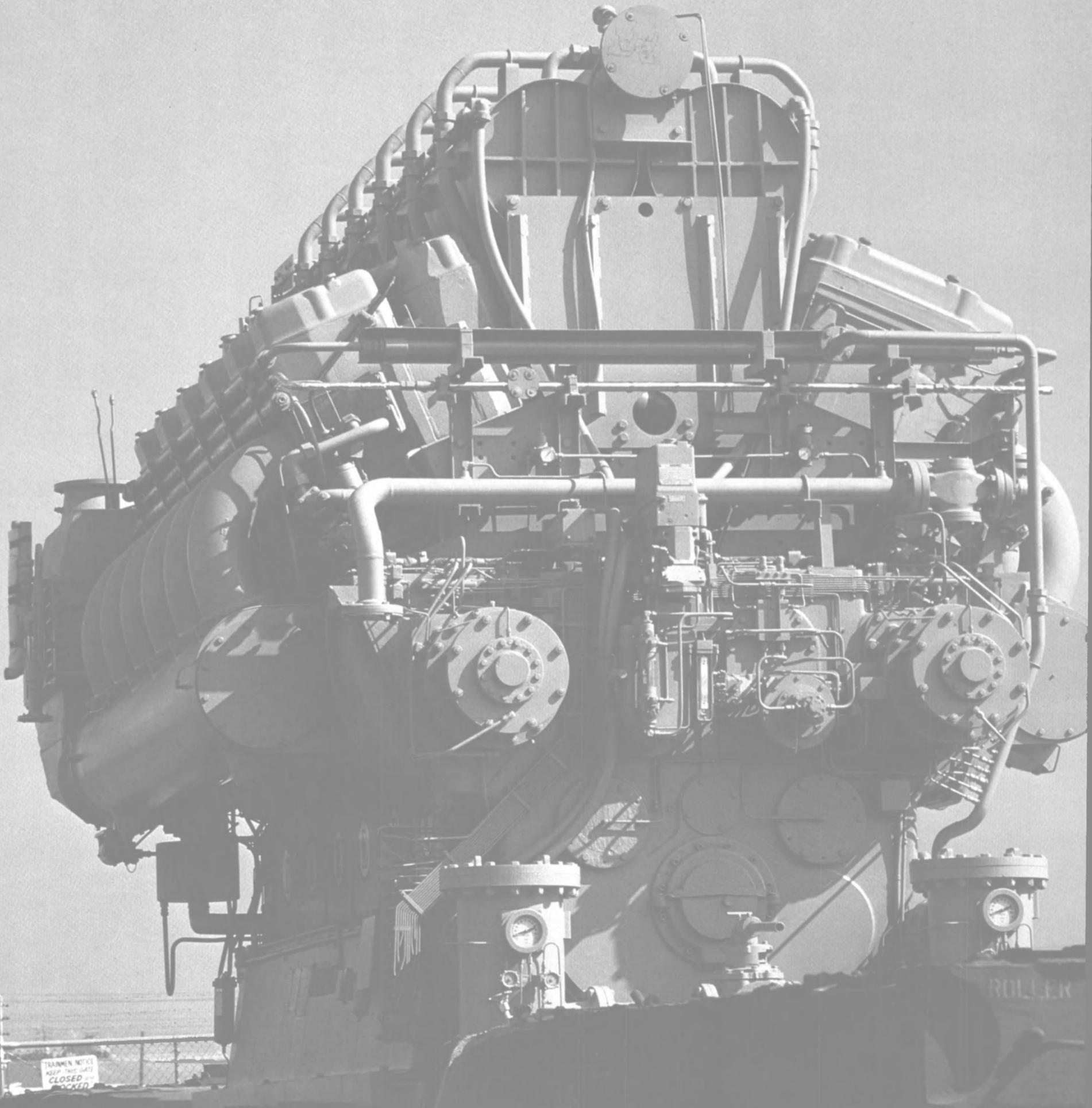
Write 354 on Reader Service Card ▶

Maritime Reporter/Engineering News



The arched separate stainless-steel ventilation lines, as well as vacuum and pressure valves, ensure correct pressure is maintained in the tanks. Almost 3.5 kilometers of cargo piping are filagreed across the main deck of the Johnson Chemstar.

One Proud American



The finest heavy duty, multi-fuel main and auxiliary diesel engines are created right here in America. At our plant in Oakland, California.

We've been trusted engine technologists for decades. And with today's fuel economy trend to diesels, our long experience at sea is paying off for an increasing number of advanced vessels: tug-barges, 1000-foot ore boats, container ships, tankers, workboats, passenger vessels...

These heavy-duty, four-stroke Delavals have the right power (3,000 to 13,500 hp). They also have the compactness, the reliability and the designed-in thermal efficiency to deliver the full economy of heavy fuel operation.

Your investment in American technology and in American field support is secure, because in the world of diesel power, this one is a proven winner.

Transamerica Delaval Inc., Engine and Compressor Division, 500 85th Ave., Oakland, Calif., 94621. Phone (415) 577-7400. Telex (47) 33-5304. Cable Enterfound.

 **Transamerica
Delaval**



Outstanding Vessels Review — Marigola

(continued from page 28)

room on the main deck. One panel is hydraulic and permits the read-out and adjustment of the pressures; the other is electric and

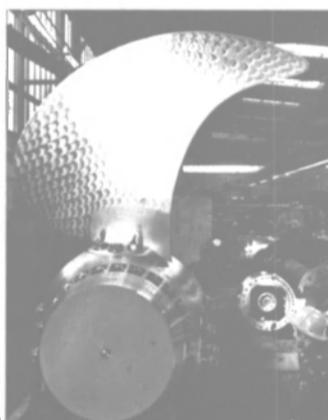
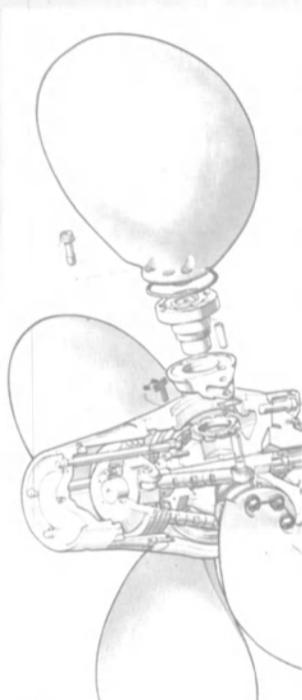
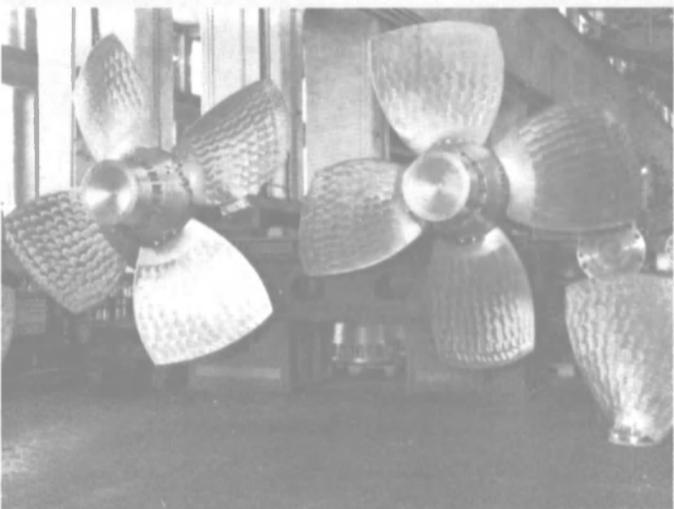
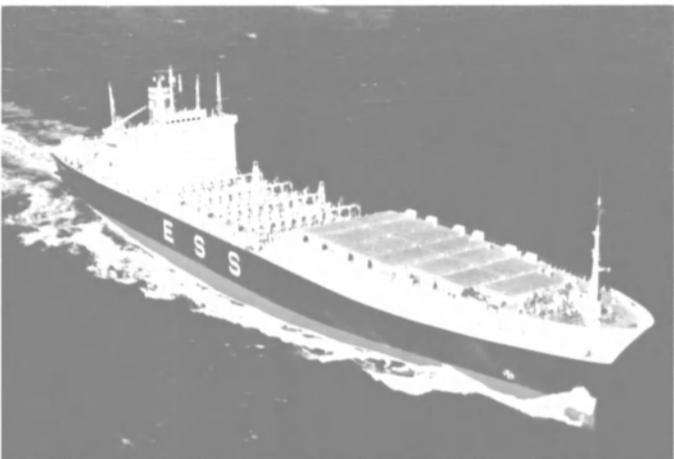
allows control of the main functions of the cargo plant.

The deck machinery, manufactured by the Benetti yard, consists of two hydraulic self-tensioning windlasses, two hydraulic self-tensioning warping capstans of nine-ton capacity, and four 4-ton hydraulic windlasses for Great Lakes service. Other deck gear includes two 3.5-ton landing booms, a hydraulic davit two-ton at 11.5 m and a portable davit for the portable pumps. The electrohydraulic steering gear is a Frydenbo type HS 181D set.

The wheelhouse is equipped with two Decca radars (type RM 1226C) with plotting, azimuth stabilizer, and performance monitor; Decca satellite navigator, type D53; Plath Angulus radio direction finder with homing system; Kelvin Hughes echosounder; and Microtecnica Sirius Mk 2 gyrocompass. A Dancom HF 1200 radio station is installed in the communications room.

According to AMLICO of Stamford, Conn., exclusive U.S. representative of G.M.T., the Marigola's hull was designed by the shipyard with a view to achieving the best performance, service speed, maximum tank volume, and deadweight to meet owner requirements. The design was tested extensively in ship model basins in Vienna and Rome.

The chemical carrier was classed by Registro Navale Italiano, meeting all IMCO, SOLAS, and U.S. Coast Guard requirements.



ESCHER WYSS CONTROLLABLE PITCH PROPELLERS

The Controllable Pitch Propeller that fulfills all requirements of today's advanced shipbuilding technology . . . and certainly will do so in the future. For example: Ro-Ro, tankers, bulk carriers, etc.

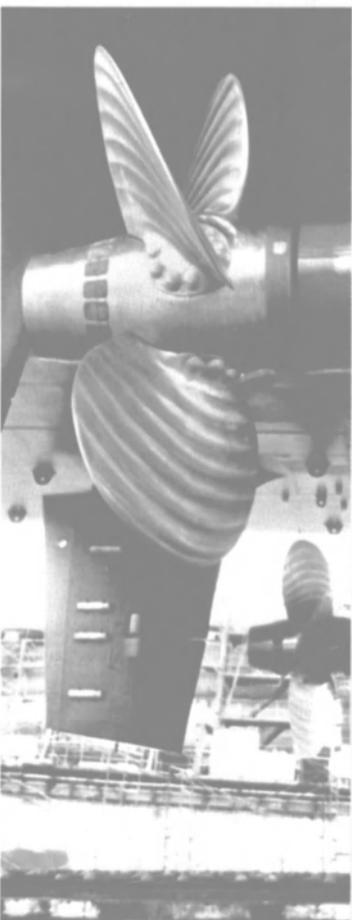


Licensor:
ESCHER WYSS
(Member Sulzer Group)
Ravensburg, Germany



Licensee:
KAWASAKI
Heavy Industries Ltd.
Tokyo, Japan

V-54



MERAK EIGHTY

NKK (Nippon Kokan) of Japan built the 42,000-dwt car/bulk carrier Merak Eighty — fitted with temporarily hoistable cardecks—for Irvine Shipping Inc. of Liberia. The bulk carrier is NKK's first new vessel to be equipped with hoistable decks. She was built at the Shimizu Shipyard.

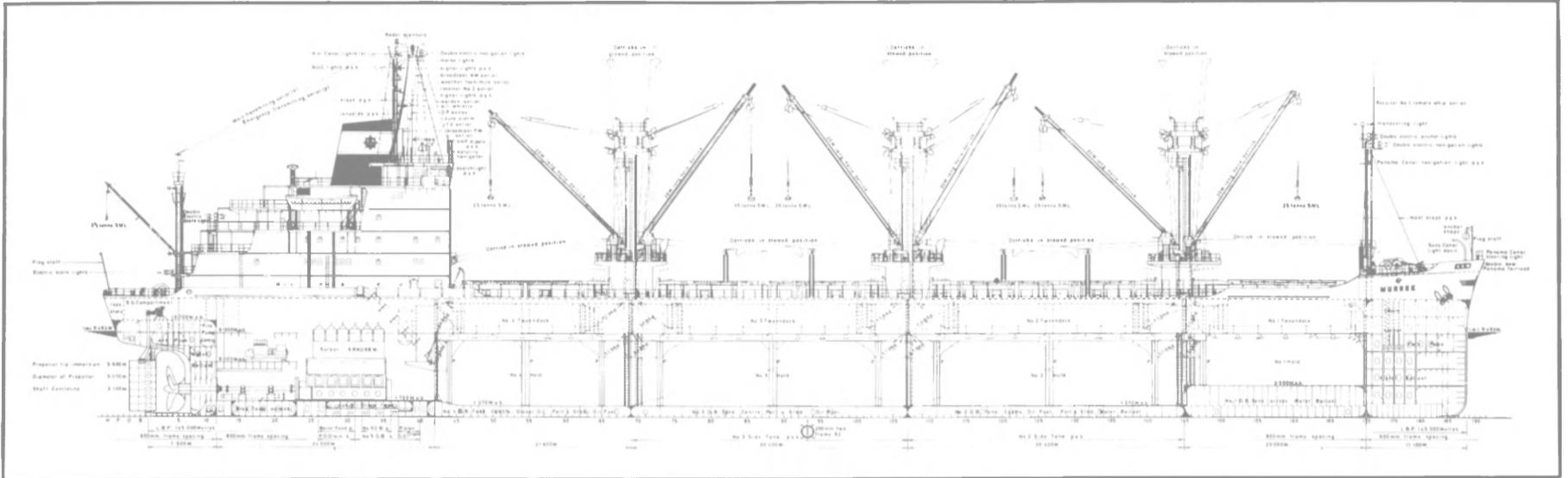
The cardeck installation, called NKK-Kvaerner Hoistable Car Deck System, is applicable to vessels having topside wing tanks, and provides temporary decks in the recessed space between the topside tanks and the tank tops by utilizing hold space to a minimum.

Merak Eighty has a length between perpendiculars of 184.50 meters, molded beam of 30.48 meters, molded depth of 17.75 meters, and draft of 11.55 meters (605.3/100/58.2/37.9 feet). Her single main engine is an NKK/S.E.M.T. Pielstick 10PC4-V570 diesel with a maximum continuous rating of 15,000 bhp at 400 rpm, providing a service speed of 15.1 knots. Car capacity is approximately 2,650 units.

The basic concept of the hoistable deck technology is that dur-

(continued on page 32)

Write 106 on Reader Service Card ▶



mensions of the holds, hatches, and weather deck have been optimized for the carriage of containers, giving the vessel a maximum capacity of 494 TEUs. The SD18 is equipped with 12 ten-ton SWL cargo derricks for handling general cargo, on the assumption that if containers were to be carried it would probably be while

on charter to a container line which would use specialized handling gear at port. The PNSC however has opted for a mix of two 35-ton and four 25-ton 20-m boom Velle Cargospeed units to permit container handling with the ship's own gear. These can be coupled, providing a 55-ton capacity. All the winches are

electrohydraulically driven by Sunderland Forge equipment.

The weather deck and shelter deck MacGregor hatches are wire operated; those on the shelter deck being flush fitting. Maximum loading for the 'tweendeck hatch covers is 3.00 ton/m², while the upper deck covers can sustain 1.75 ton/m². Holds No. 2, 3

and 4 have twin hatches, 8 m wide at the weather deck and 7.74 m wide at the 'tweendeck.

For propulsion, as with the cargo gear, the PNSC has chosen to exceed the standard specification by fitting a Clark Hawthorne Sulzer 6RND 68M diesel engine instead of the five-cylinder Sulzer (continued on page 34)

JRC
Since 1915



Maritime Satellite Communications Mobile Terminal
JUE - 15 A

The JRC JUE-15A maritime satellite communications terminal continues a tradition of providing high performance and high reliability marine electronic equipment incorporating the latest technological advances. With the JUE-15A, the shipowner is assured of obtaining the latest equipment available, simple to install and operate, and capable of achieving the full communication capabilities of the maritime satellite communication systems available now, or in the future. The JRC JUE-15A uses the same proven design and quality control production techniques of its predecessors, with improvements in performance and design features for further reliability, easier installation, operation, maintenance, and lower cost.

(JRC) Japan Radio Co., Ltd.

Main Office: Mori Building 5th, 17-1, Toranomon 1 chome, Minato-ku, TOKYO 105, JAPAN
Phone: Tokyo (03) 591-3451 Telex: 02223068JRCTOKJ Cable: "JAPANRADIO TOKYO"

In Europe contact: Japan Radio Co., Ltd., 3rd Fl., Temple Chambers,
Temple Avenue, London EC4Y 0DT Phone: 01-353-7960
Telex: 885629JAPRAD G

In U.S.A. and U.K. contact:
139 Old Solomons Island Rd.
Annapolis, Maryland
21401



301-266-5588/261-8888
U.K. London 01-440-2014
Telex: Western Union 87-760

OFFSHORE VESSELS FROM

BENDER

SHIPBUILDING & REPAIR CO., INC.

- 192 FT. OFFSHORE BOATS FOR STATE BOAT CORP.
- NEW BUILDING IN STEEL UP TO 250 FT.
- ABS AI, AMS, E
- U.S.C.G. 'T' OR 'I'
- FAST DELIVERY
- PERFORMANCE BONDS AVAILABLE



ALSO TOPSIDE & ON DOCK

REPAIRS FROM BENDER

- 4,700 FT. WATERFRONT
- 1,500, 3,500 AND 7,000 TON FLOATING DOCKS
- 60 TO 125 TON FLOATING, MOBILE, STATIONARY CRANES
- MACHINE SHOP ABS APPROVED FOR SHAFT BUILD UPS



P.O. BOX 42, MOBILE ALA. 36601 • TEL: (205) 433-3673 • TLX: 505-457

JOHN LOGAN
NEW BOAT
SALES MGR.

TOM ELLISON
VICE PRES.
REPAIR

JOE HENDRIX
WEST COAST REP.
(206) 282-9631

Outstanding Vessels Review—Ogden Dynachem

(continued from page 35)

wide range of specific gravities, vapor pressures and viscosities.

An electronic cargo control system integrates into a single remote cargo control panel the central hydraulic system operation, cargo pump control, hydraulic valve actuation, cargo tank level gaging, tank temperature

monitors, inert gas control system, ballast system operation, and gaging and emergency shutdown system.

Devoe Marine Coatings supplied all protective coatings for the Dynachem—for cargo tanks, ballast tanks, and vessel surfaces. A highly chemical-resistant lining, Devchem 251 was applied to the cargo tanks. Two coats of water-based Catha-Coat 305, an inorganic zinc coating topped with Catha-Seal, was used on the ballast tanks.



OXY TRADER

The Oxy Trader, a 42,260-dwt liquid bulk carrier, was the first of three integrated catamaran tug-barge (Catug) vessels built by Avondale Shipyards, Avondale, La., for Occidental Petroleum Corporation.

The vessel is designed to transport highly viscous, dense and corrosive superphosphoric acid (SPA). Many other bulk liquid products also can be transported.

Designed by Hvide Shipping and its affiliate, Seabulk Corporation, the Catug is an integrated tug/barge (ITB) that combines the efficient hull form of a ship with the wide-beam, shallow-draft characteristics of an ocean-going barge. Tug and barge sections were constructed separately and are designed to be employed as an integrated unit.

The design utilizes a twin-hull catamaran tug with a propulsion

and steering system in each hull to increase its safety and reliability. It is reportedly more maneuverable than a single- or twin-screw ship. The tug and barge may be separated rapidly in case of emergency.

Other benefits inherent in the design include lower capital costs and substantially lower manning requirements than conventional ships, all resulting in markedly reduced financial and operating costs.

The Oxy Catugs are powered by two 9,100-bhp Colt-Pielstick, 14-cylinder direct reversing engines, one in each hull. Each engine drives a four-bladed, 20-foot-diameter, slow-turning propeller. Each power unit has its own separate rudder and steering mechanism. A service speed in excess of 15 knots has been achieved.

Built to ship scantlings with heavy reinforcement for the very dense SPA cargoes, the Oxy Catugs have an SPA carrying capacity of 40,100 metric tons at a draft of 36 feet. The five SPA tanks are located in the center of the barge; they are clad with 3,17L stainless steel.

Each tank is equipped with heat exchangers drawing steam from two waste heat boilers in the engine uptakes or from a separate boiler plant on the barge. This maintains the SPA at a temperature above 150°F while in transit. Hydraulically operated submerged pumps are capable of discharging all cargo tanks to less than four gallons within 20 hours. Tanks are cleaned by

hot fresh water washing via a portable Butterworth system.

Ten wing tanks are coated with water-based inorganic zinc, and may be used to carry petroleum products. The vessel also is fitted

for protectively located segregated ballast. The unique design permits the Catugs to carry a wide variety of other liquids—clean and dirty oil products, and liquid chemicals.

SEABEX ONE

The Seabex One, a combination offshore rig support vessel and a dynamically positioned diving mothership, was built by Nobiskrug Werft G.m.b.H., of Rendsburg, Germany, for Seabex Industrielle Tiefseetechnik G.m.b.H. of Germany and Comex of France.

Seabex One was designed to provide a range of services including support of divers, underwater welding, and the installation and maintenance of offshore drilling rigs and fixed structures. The vessel also is equipped for fire-fighting and is capable of evacuating up to 500 people from stricken offshore structures.

A large moonpool is incorporated in the vessel, measuring 15 meters by 8 meters (about 49 by 26 feet) which Seabex claims is the first of a size and configuration that ensures there is sufficient access for lowering the underwater vehicles and equipment. The vessel's deepsea saturation diving system allows up to 16 men to work at three different levels to a maximum depth of 450 meters (1,476 feet). The diving equipment can be lowered either through the moonpool or over the side.

The Seabex One is equipped with seven decompression chambers and a hyperbaric rescue vessel for 12 divers. Other underwater-related equipment includes a welding habitat for constructing oil and gas pipelines, pipe alignment frames, and a cable burying machine. Lockout submersibles are available as are one-atmosphere diving systems.

The moonpool is surrounded by a covered deck space, and the remainder of the deck provides about 1,000 m² of open space having a load capacity of five tons/m²—specific areas of which are

strengthened to permit the installation of winches, davits, and other gear.

Equipment handling is facilitated by a two-ton mobile crane and a Liebherr offshore crane having a 50-ton capacity at a radius of 15 m, or 100 tons when operating through the moonpool. The crane is fitted with a heave compensation arrangement which can maintain its boom steady in relation to either the sea floor or to another vessel alongside. It can operate to a depth of 300 meters. The vessel also is fitted with a 100-ton capacity H frame at the stern.

The Kongsberg fire-fighting system consists of four monitors of 1,800 m³/h throughput, powered by two gas turbine driven pumps delivering 3,600 m³/h each at a pressure of 15 bar. The fire monitors are inertia stabilized and can provide accurate cover even in bad weather, which Seabex officials regard as an improvement over other systems.

The vessel's maneuverability and propulsion are supplied by a combination of Pleuger ducted propellers and transverse thruster units. Two reversible fixed-pitch nozzle propellers fitted at the stern, which can be steered through a full 360 degrees, are capable of delivering 2,300 hp each at 202 rpm. They are powered by two AEG electric motors running at 700 rpm.

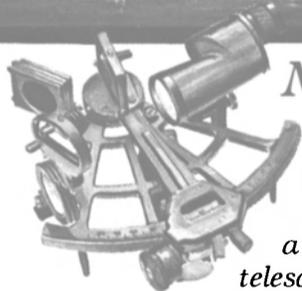
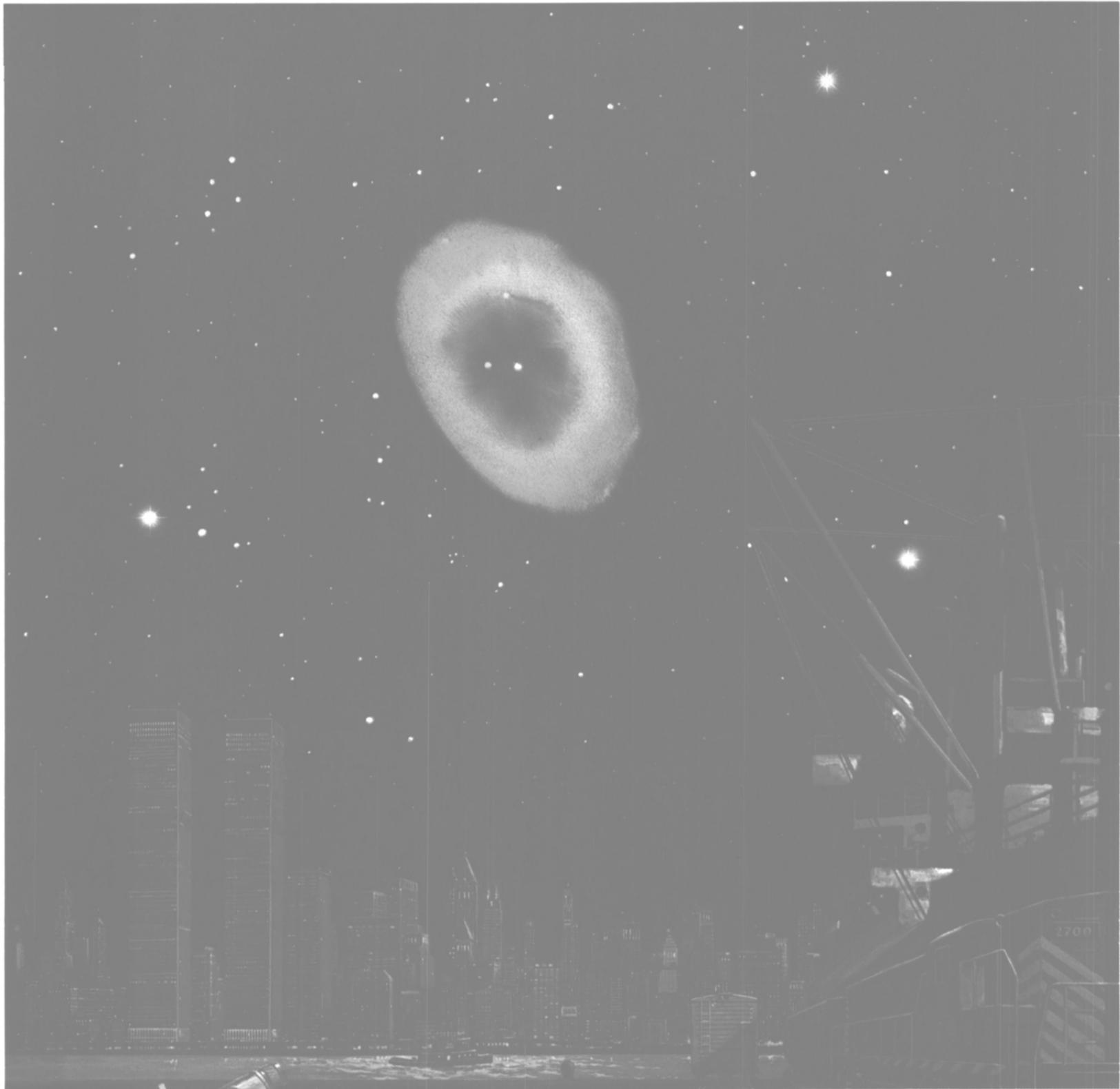
Two similar units are mounted at the bow, each with an output of 1,500 hp at 238 rpm. These are aided by two lateral thrust Pleuger fixed blade units— one forward and one aft— of 800 hp each.

The complete arrangement is controlled by a Kongsberg Albartross 503 dynamic positioning

(continued on page 38)



OXY TRADER	
Main Propulsion	(2) Colt-Pielstick
Reduction Gear	Colt Industries
Propeller	Harvey
Shaft	National Forge Co.
Bearings	Service Foundry
Generator Engines	Boyce
	Machinery
	George Engine
Steering	Sperry Marine
Pumps	De Laval
	PRP Industries
	Goulds Pumps
	Colt Industries
Air Compressors	Colt Industries
	Service Engineering
Sanitation	Red Fox Industries
Tank Cleaning	Butterworth
Crane	Schat Davit Corp.
Winches	Marine Safety Equipment
Windlass/Capstan	New England Trawler Co.



Mariners Seek Texaco's "STAR" Products

The Ring Nebula invisible to unaided eye, displays its exotic beauty only through a color camera attached to a telescope. However, for centuries stars such as Vega (seen above the ship's mast), Deneb and Altair have guided navigators from continent to continent and from port to port. It is only natural therefore, that mariners seek Texaco and its star products which have proven to be as reliable as the celestial bodies.



For information on our "Star" marine products Ursa, our Doro and Taro diesel engine oils, our Regal R&O turbine oils, Capella, Meropa or Thuban and all your marine lubricant needs, contact your local Marine Sales Representative or:

Texaco Inc.
International Marine Sales Dept.
2000 Westchester Ave./White Plains, NY 10650
Phone: (914) 253-4000

Texaco Ltd.
International Marine Sales Europe
1 Knightsbridge Green/London SW1X 7QJ
Phone: 01-584-5000

Outstanding Vessels Review — Seabex One

(continued from page 36)

system, which uses data obtained principally from an inertial platform, an acoustic reference system, and two taut wires. The Seabex One wires are attached to an above-water part of

the structure near which it is station keeping, as contrasted to other taut-wire systems that are linked to weights on the sea floor. The multiple data sources ensure a safety margin in the event any part of the system breaks down.

Power for the electrical propulsion is supplied by five auxiliaries, each consisting of an MAK

8M332AK engine and an ADG generator, producing a total output of 6,450 kw, using fuel of 30 cSt (200 sec. Redwood), and an emergency generator set of 300 kw.

Two engine rooms are needed to house the equipment and a large control room is situated on the lower 'tweendeck above the control room. There are accom-

modations for 86 persons, two evacuation rooms with 50 bunks each, and a hospital onboard. The Seabex One was built to Det norske Veritas classification.

SUTORETAI MARU

The 3,700-gt Sutoretai Maru is not a new vessel in the sense that she was delivered in 1981. But by the addition this year of a stern end bulb (SEB) developed by Kawasaki Heavy Industries of Japan, she certainly became an "outstanding vessel."



Kawasaki stern end bulb protrudes from center line of hull near full-load waterline. In test installation, this ship recorded 5 percent saving in propulsion.

She became the first ship to be equipped with the newly developed propulsive power-saving system—the SEB. When the passenger vessel was placed in service fitted with the bulb, the addition showed excellent results. Owned by the Tokai Kisen Company, Ltd., and the Maritime Credit Corporation, the vessel was built in 1978 and serves on the Tokyo-Miyake Island-Hachijo route.

The Kawasaki-SEB was fixed on the ship's main stern hull around the center line and near the full-load waterline. The purpose was to save propulsive power by reducing wave pattern resistance and stern part local resistance from the effect of the interference between the waves generated by the bulb and by the stern hull.

The basic theory of the SEB was developed by a research group led by Prof. Dr. T. Inui of Tokyo University, an authority on the wave-making resistance theory. Under the guidance of this group, KHI has continued to study the SEB for practical use,

(continued on page 40)

SIMPLY THE MOST VERSATILE SATELLITE COMMUNICATIONS TERMINAL ON EARTH.

No Marisat terminal ever looked like this. Because no Marisat terminal was ever designed to do so much.

The ESZ-8000 Satellite Communicator gives you all of the fast, high-quality voice, telex, data and facsimile services offered by the new Inmarsat network. And it gives them to you in a simple, easy-to-use format.

You Can See The Difference. The ESZ-8000 is the first to bring you a fully integrated cathode ray tube (CRT) screen as standard equipment. The CRT automatically prompts all procedures and provides you with a continuous display of system status information. It also functions like a word processor so you can compose and edit telex messages right on the screen, then send them on command to any location.

All Controls Within Easy Reach. Only the telephone, teleprinter and compact Operators Console need to be located in the radio room. Since all main functions are controlled through the Operators Console, the Central Electronics Unit can be installed remotely.

The Satellite Communicator That Grows With You. The ESZ-8000 is built with room to grow so you can expand capabilities in the future by simply adding plug-in circuit boards. Optional data interfaces can link your shipboard and shoreside computers to give you a fleetwide management information system. And the expanded memory option can put a total communications library at your disposal.

Built With Experience And Backed By Support. Compare the ESZ-8000 with any other shipboard satellite communications terminal. Its versatility and simplicity will convince you. So will the price. And so will the Navidyne standards behind it. Navidyne's international network of agents assures you of fast shipboard repair in virtually any major port.

Find out more about the ESZ-8000. Write or call Navidyne Corporation, 11824 Fishing Point Drive, Newport News, Virginia 23606 USA.

Telephone: (804) 874-4488. Telex: 82-3653 (NAVIDYNE NPNS).



MORE MARINE ADVERTISERS USE IT



BECAUSE THOUSANDS MORE BUYERS READ IT

Maritime Reporter has the world's largest circulation to shoreside executives and management personnel in shipyards, vessel operating companies and naval architecture...thousands more of these buying influence readers than No. 2.

As a result, a larger number of advertisers use MR than No. 2...and place more pages of advertising in MR than in No. 2.

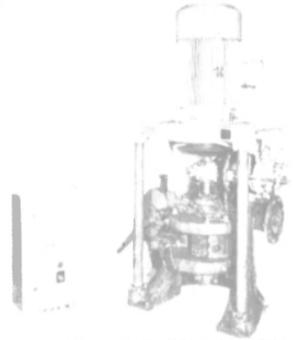
**FOR MORE MARINE SALES...
ADVERTISE TO THOUSANDS MORE BUYERS IN...**

**MARITIME
REPORTER**
AND
ENGINEERING NEWS

107 EAST 31st STREET
NEW YORK, N.Y. 10016
(212) 689-3266

PUMPS

SELF-PRIMING FIRE & GENERAL SERVICE PUMP TYPE 150 VCB-A-NV Complete With Vacuum Pump



Built 1976. 6" x 6" — 397 GPM @ 230' head — 100 PSI — 1750 RPM — 792 GPM @ 115' head — 50 PSI — 1750 RPM or M³/hr — 90/180 @ 70M/35M head. MOTOR: 33 KW — 440 volts 3-phase 60Hz — 1800 RPM. Teikoku Machinery Works, Osaka, Japan. Condition very good. Lloyds or ABS.

SELF-PRIMING EMERGENCY FIRE PUMP TYPE 125-2VCS-A-NV



4" x 4" — 220 GPM @ 231' head (100 PSI) 1750 RPM (50M³/hr. @ 70M total head). Complete with vacuum pump. MOTOR: 25KW — 1800 RPM — 440/3/60Hz. Teikoku Machinery Works, Osaka, Japan.

SEND FOR PLANS. BOTH OF THESE PUMPS REMOVED FROM VERY NEW HANSA VESSEL "RABENFELS"

AUXILIARY FIRE PUMPS

BUILT 1977 BY K.S.B. GERMANY — (RADIAL FLOW)

265 GPM — 220' HEAD

4" x 4" — 265 GPM — 220' head (60 M³ @ 70m) — 3520 RPM. MOTOR: 24KW — 440/3/60Hz.



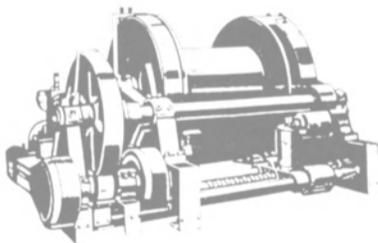
396 GPM — 230' HEAD

396 GPM @ 230' head (90M³ @ 70m)—3550 RPM. MOTOR: 33 KW — 3550 RPM — 440/3/60Hz.



LARGE STEAM TOWING ENGINE

9 X 10 TWIN ENGINE DRIVE
Air or Steam — 125/250 PSI



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

ALSO AVAILABLE

Large towing ring — 36" I.D.

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

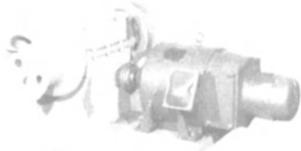
NEW
UNUSED



EX
U.S.N.

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

DOUBLE GYPSY BOAT WINCH



mfg. by Lakeshore
duty: 2500 LBS @
125 FPM—15 HP—
230 VDC — 1780
RPM

\$2250

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



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

RECONDITIONED 1980
ABS — READY TO GO

UNUSED ALCO MARINE CONDENSER

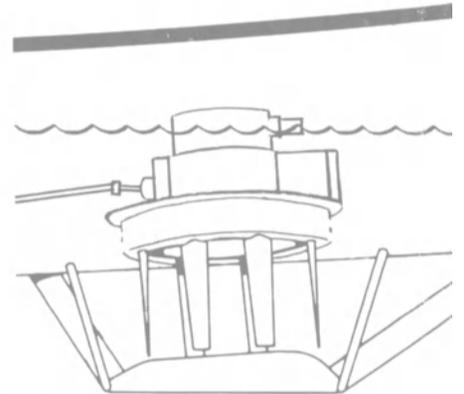


700 Sq. ft. — 2-pass — 5/8" CuNi tubes 0.049 (18BWG) — 108" effective length — 476 tubes — shell & head hydro test 30 PSI. Empty weight 6350 lbs. — 11,000 lbs. filled with water — operating 7550 lbs. — 2-Pass 9 5/8" inlet & outlet — length of condenser 156" — about 78" from exhaust flange to bottom of hot well.

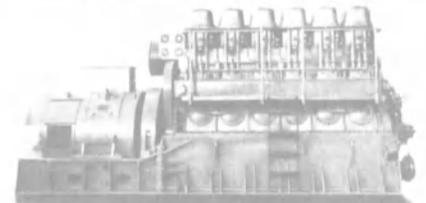
TWO 1,000 VOITH--S

CYCLOIDAL CO OMNI-DIRECTION

Can Be Located Side-
For Fast and Precise Mov
On Axis Turns Make Them Ide



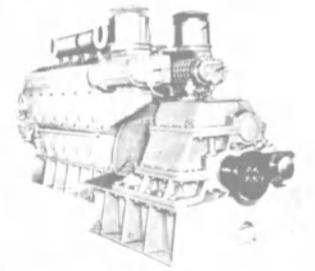
Serial Nos. NR-1783 and NR-1784. Unit size 24, blade length—2400mm blade orbit diameter. PRI heavy duty motor 800/1000 HP—440/3/60—17; Mfg. by Electric Machinery Co. Complete with 120 volts 120 A.C.—line volts 450—amps 941/3/60 HYDRAULIC COUPLING ARRANGEMENT. UNIT 1 MOTORS FOR BRIDGE CONTROL.



BALDWIN 250 KW DIESEL GENERATOR SET
ENGINE: Model VO — 450 HP at 400 RPM — 6 cylinder — 12 3/4" X 15 1/2" — 4-cycle — heat exchanger cooled — air starting. GENERATOR: 250 KW — Westinghouse — 120/240 volts DC.

MATCHED PAIR 900HP GM 12-567A DIESEL ENGINES

WITH FALK
REVERSE
AND
REDUCTION
GEAR



ENGINE: GM 12-567A — 8 1/2" X 10" — V-type — 2-cycle — 747 RPM—electric starting—serial Nos. 1041 & 1060. GEAR: Falk AirFlex—reverse & reduction—2.48:1 forward—2.52:1 reverse.



THE BOSTON

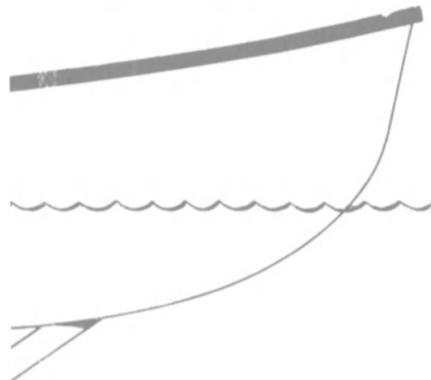
313 E. BALTIMORE

Main Office: (301)
CABLE: BOSIRON—BALTIMO

100 H.P. SCHNEIDER

QUARTER-ROTATING AZIMUTHAL PROPELLERS

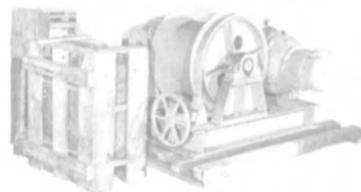
Port, Starboard, Fore and Aft,
Movement Sideways and 360°
Suitable for Tugs, Ferries, Cranes, Etc.



Model 150. 6 Stainless steel blades each unit—1500mm
REDUCTION DRIVE with Voith AD40 reduction gears and
1750 RPM—squirrel cage—884 amps—frame 23153.
"Control Panels" & motor controls. Size 8—Control
DRIVE DIRECTLY WITH DIESEL ENGINE AND
JULY 1970. COMPLETE WITH HYDRAULIC SERVO

GENERAL PURPOSE WINCH 3500 LBS AT 200 FPM

NEW
UNUSED

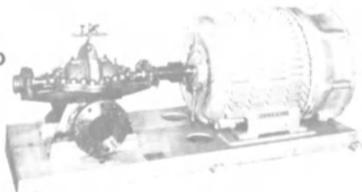


EX
U.S.N.

A.C. Motor drive—25/12.5 HP—GE 440/3/60—40°C AB
—1750 RPM—type KR—full load amps 32. Motor drives
winch through Falk reduction gear. Has compressor
hand brake.

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

NEW
UNUSED



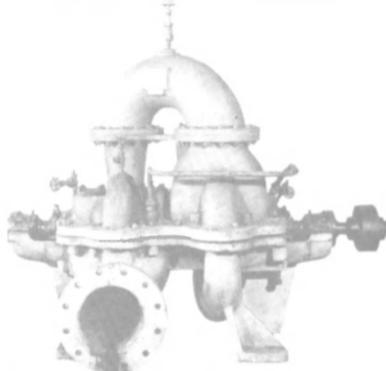
EX
U.S.N.

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

T-2 TANKER EQUIPMENT AVAILABILITY

From Immediately To 5 Days

BRONZE INGERSOLL-RAND 6-GT CARGO PUMP



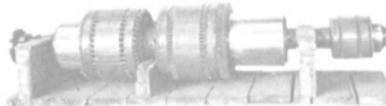
2000 GPM — 100 PSIG — Westinghouse or G.E. pump
motors — 200 HP — 440/3/60 — 1750 RPM.

G.E. NEW STYLE AMPLIDYNE



5LY148A — Type AM — Frame 605. Rebuilt with ABS.
Immediate delivery.

D.C. EXCITER ARMATURE FOR WEST. AUX. GEN.



110 KW — 32.5 KW — 5.5 KW — for Westinghouse
538 KW auxiliary generator. In stock for immediate
delivery. Reconditioned — with ABS.

G.E. 75/55 KW ARMATURE



FOR 525 KW TURBO GENERATOR SETS
In stock for immediate delivery. Reconditioned — with
ABS.

538 KW WESTINGHOUSE TURBINE SPINDLE

For immediate delivery. Reconditioned with ABS.

G.E. 525 KW TYPE DORV 325 M AUXILIARY TURBINE ROTOR



In stock — for immediate delivery. A.B.S.

NEW WESTINGHOUSE AUX. GEN. STATIONARY BLADING

From Ex-Gulf Oil Spare Parts Stock

1 Box 2nd Stage Diaphragms — Curtis
1 Box 2nd Stage Diaphragms — Rateau

1 WESTINGHOUSE MAIN GENERATOR FORWARD PEDESTAL BEARING SEAL

From Ex-Gulf Oil Spare Parts Stock

INGERSOLL-RAND 24VCM BRONZE MAIN CIRCULATING PUMP



RECONDITIONED
BY USMP 1975

With ABS — Immediate delivery. New Micarta and
bronze inserts — new stainless steel shaft, rings, upper
& lower bearings, bushings, casing and cover. Dynam-
ically balanced. From Ex-Gulf Oil. Immediate delivery.

WESTINGHOUSE 7240 HP MAIN PROPULSION TURBINE ROTOR

UNSHROUDED — 17th to 18th rows replaced by West-
inghouse. With ABS. Immediate delivery.

WESTINGHOUSE 50 HP FORCED DRAFT FAN MOTORS

Ready for shipping in 5 days

NEW INGERSOLL-RAND 3GT FIRE & BUTTERWORTH PUMP

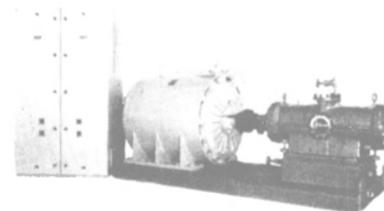
Pump only. Ready for delivery.

NEW G.E. MAIN TURBINE ROTOR

700 G.P.M. @ 150 P.S.I.
NEW — UNUSED — EX-U.S.N.

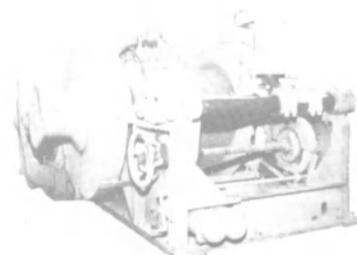
MOTOR DRIVEN ROTARY HORIZONTAL PUMPS

WITH 4-SPEED 440/3/60 MOTOR



Inlet 8" — outlet 6". Powered by 4-Speed
440/3/60 motor. Motor is 100/75/50/37.5
HP — 1200/900/600/450 R.P.M. Motor has
Cutler-Hammer control. Weight 10,000. In-
quire for complete details.

100,000 LB. ALMON JOHNSON Constant Tension Mooring Winches



In very good condition. Series 232 mooring & anchoring
winches. Automatic self-tensioning. Wide range
from 100,000 lb. line pull @ 10 FPM to 26,000 lbs.
@ 400 FPM. Gypsy line pull @ 12,000 lbs. @ 25
FPM. Drum declutchable through spiral jaw clutch for
free spooling. Driven by 50 HP 230 VDC motors —
Westinghouse CK — 575 RPM — ½ hour — 75°C rise —
stab shunt — 181 amps. Max. RPM 1900 — Cutler-
Hammer brake — 18" — type NM. Complete with mag-
netic control panel, resistor banks & remote control
pedestal and mounted master switch.

ON METALS CO.

E. ST. • BALTIMORE, MD. 21202

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

E, MD. U.S.A.

TWX 710-234-1637

(continued from page 40)
to keep the deck hatches at a required level for dockside loading.

The huge cargo area is divided into five holds. A series of power-actuated gates in each hold feeds pellets or coal onto a conveyor belt that lies beneath the entire length of the cargo hold area. The De Lancey's unloading system is capable of discharging pellets at the rate of 10,000 tons per hour. The 260-foot boom can swing to either side for piling cargo ashore under high-speed unloading conditions.

Main propulsion power for the De Lancey is provided by two 8,560-bhp Colt-Pielstick diesel engines. Each engine is directly connected to a four-blade, 17½-foot-diameter controllable-pitch Bird-Johnson propeller through a specially designed reduction gear and shafting system.

Designers of the De Lancey were most concerned with two aspects of the main drive system—reliability and low maintenance. The result is a simple, unencumbered drive system capable of delivering power to the propellers

efficiently and in a minimum of space.

The arrangement of completely independent drive systems for each engine optimizes overall reliability; if for some reason one engine is nonoperational, the other can still power the ship. Four 800-kw, 480-volt main electrical generators are driven by separate Caterpillar diesel engines.

The De Lancey has a maximum capacity of 152,000 gallons of heavy fuel oil for main propulsion, and carries 31,000 gallons of light diesel oil fuel for generator, heater, and boiler service.

Each controllable-pitch propeller assembly is fitted with four stainless-steel movable blades. An automatic pitch-control system hydraulically changes propeller pitch according to engine speed to provide for optimum running economy and to prevent overloading and stalling the engines when the vessel is heavily loaded at low speeds.

Single-lever controls in both the pilothouse and engine room provide for combined control of



engine speed and propeller pitch. Provision is also made for a split control of speed and pitch from the pilothouse and engine room. Separate control units connected to the central pilothouse unit are located on both the port and starboard bridge wings.

Maneuvering the huge 1,000-footer is simplified by the twin screws and the arrangement of a rudder behind each propeller. The ship also can be steered by varying the speed of each engine.

A 1,500-hp Bird-Johnson electrically driven bow thruster facilitates docking.

Reversing is accomplished through the controllable-pitch propellers. The onboard St. Louis ship F.A.S.T. sewage treatment plant, which meets stringent federal standards, produces completely clean effluent for discharge, or for temporary holding while the vessel is in waters where discharge is prohibited by local regulations.

mooring lines

- 7" to 10" Circumference Synthetic Rope
- Large Inventories
- In Bond & Duty Paid
- Wire Rope in stock plus Splicing Capacities 1/16" to 5" Diameter

Also available: • Manila Ropes • Blocks
• Turnbuckles • Herculoc Preventer Guys
• Container Lashing • Nylon Slings
• Tarpaulins

ATLANTIC CORDAGE CORP.

60 Grant Avenue, Carteret, N.J. 07008
(201) 541-5300—Telex: 139374
Cable: ATLANCORD

SHIP MACHINERY SPECIALISTS

**A COMPLETE LINE OF THE FINEST DECK MACHINERY...
PLUS...SPECIALIZED ENGINEERING SERVICES FOR
PLANNING, INSTALLATION AND SUPPORT.**

Marine Technical Associates, founded and staffed by experienced marine engineering experts, offers one ideal source for all deck machinery needs.

From the start, your needs are thoroughly analyzed by experienced marine engineers. They recommend the right equipment to meet your requirements and they supply it. Installation is technically supervised and these same experts are on hand for full support services at any time.

TENJORD ROTARY RAM STEERING GEAR. - Provides the same steering safety for the smaller vessel which is recommended by IMCO for larger vessels. Provides dual unitized power packs, dual control valves, eliminates piping, external seals exposed only to expansion tank head pressures.



WINCHES, WINDLASSES, CRANES. - world famous, service-proved designs by Kocks...Available in all types of drives, and sizes.



HAWSER INDICATOR AND SYSTEM. known as "Moor Safe" is available with our winches and for those of other manufacture.



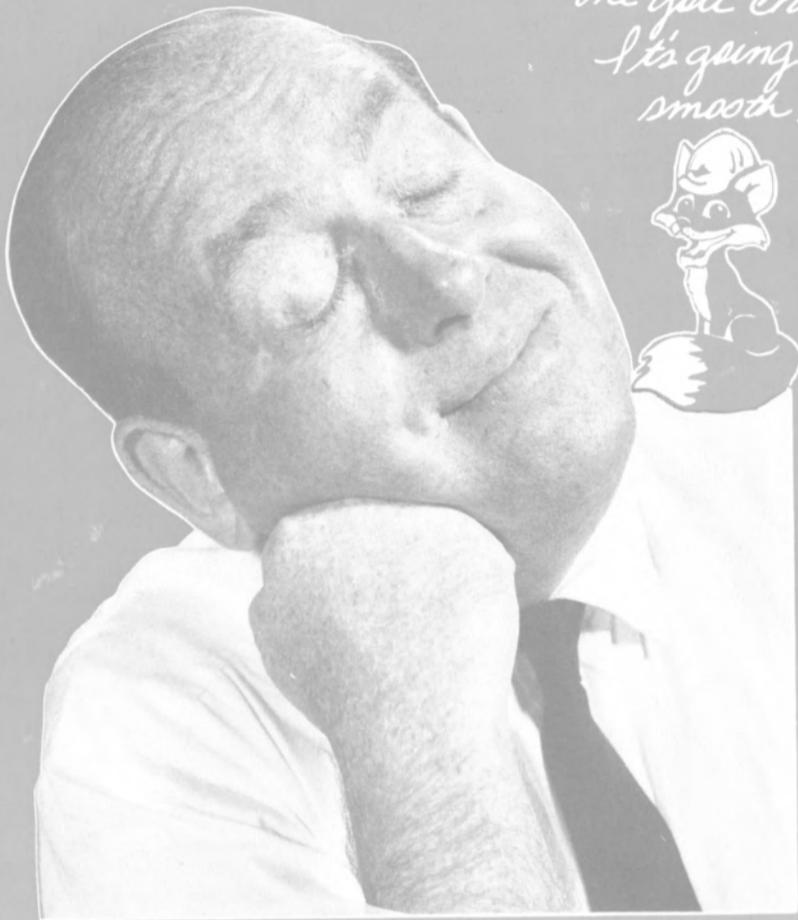
ENGINEERING SERVICES TO MEET IMCO REQUIREMENTS

A complete and experienced engineering consulting service to help you meet IMCO requirements in time...without problems.

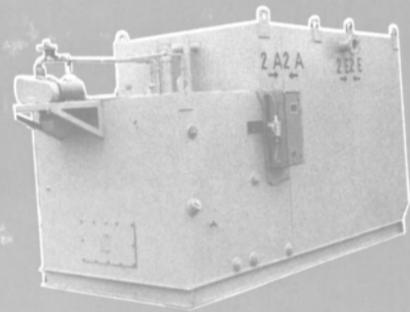
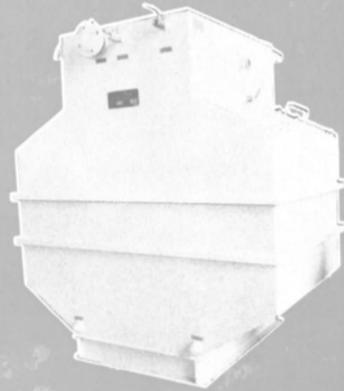
- Trim & Stability Booklet Updating
- Steering Systems Upgrading
- Tow Hawsers Handling Systems

**The ONE SOURCE
for all Deck Machinery Needs**

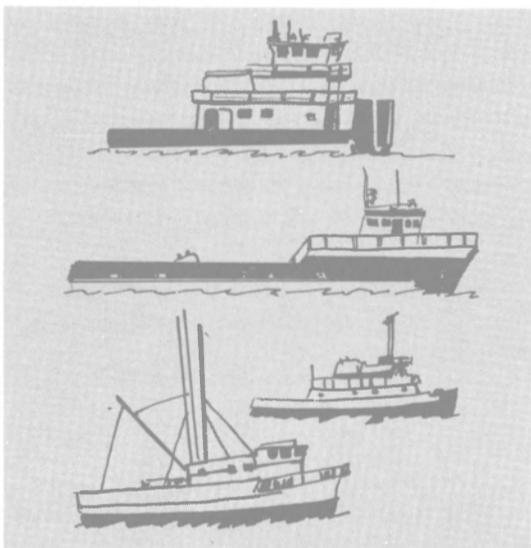
MARINE TECHNICAL ASSOCIATES
Mooney Brothers Building 195 Paterson Avenue Little Falls, NJ 07424
(201) 785-0062



*no matter which
one you choose
It's going to be
smooth sailing, Mate!*



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



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

EXPERIENCE: Over 50 years of service to the oil industry.

SERVICE: 24 hours a day, 365 days a year, worldwide

DEPENDABILITY: Over 2,000 units in service worldwide

ACCEPTABILITY: 56% of Red Fox owners operate over 10 units.

RELIABILITY: Red Fox units work. When service is necessary we're with you with spare parts and know how.

redFox
INDUSTRIES, INC.

P.O. Drawer 640, New Iberia, Louisiana 70560 • Phone (318) 365-8131 • TELEX 586680
2400 Augusta Dr., Suite 260, Houston, Tx. 77057 • Phone (713) 977-7128

Deliver 13th Supply Boat To Marsea Agencies Fleet, Plan Eight More For 1982

Another milestone in a growth story was announced by **Frank Nemeç**, president of Marsea Agencies, Houma, La., who revealed recently that Marsea had taken delivery of their 13th supply boat, making the new Marsea group one of the prominent

growth companies on the Louisiana Gulf Coast. By the end of 1981, additional deliveries will provide Marsea with a total fleet of 16 tug supply boats, value in excess of \$60 million. Twelve of the vessels are 180 feet long and the others are 185 feet.

Working toward leadership in its field has been an objective of the management team of Marsea Agencies since it was established in November 1980 by Mr. Nemeç,

a former president of Lykes Steamship Lines, New Orleans.

In April of 1981, **E.J. Hebert** assumed the position of executive vice president and general manager of Marsea Agencies. A long-time executive in boat operation and construction in the Gulf Coast, Mr. Hebert, who had served as vice president of engineering for Quality Shipyards of Houma, was most recently manager of the domestic towing di-

vision of the Gulf Fleet Company. He will be located at Marsea's main office on Bass Plaza/Grand Caillou, Houma.

A large portion of Marsea's growth has been attributed by Mr. Hebert to the fact that it has "put all its eggs in one basket—tug supply boats." It is a decision which he believes enables the company to concentrate fully on standardization of service and maintenance, which has helped provide a supply boat fleet of dependability and performance.

Marsea expects to take delivery in 1982 of eight more supply boats, increasing its fleet to 24 tug supply boats with a value of about \$100 million.

Paducah Marine Ways To Add Fab & Prop Shops

Paducah Marine Ways has announced its intention to construct a new fabrication shop and also an adjoining propeller repair shop in order to modernize and improve the efficiency of its efforts on the Ohio River for the marine industry. The total of 14,000-square-foot facilities will be constructed of pre-engineered metal and will be serviced by 15-ton overhead cranes with a 25-foot lift. The structures will have environmental control (heating and ventilation) suitable for housing numerical control equipment which will perform precision burning operations. The first phase will also be used for rudder fabrication and repair. According to **Jim Causey**, general manager of Paducah Marine Ways, the construction of the second phase of the facility will enable Paducah Marine Ways to provide "full service" propeller straightening, balancing, pitching, reboring, and repair, as well as rudder repair and rework.

Paducah Marine Ways is one of three major inland shipyards operated by Pott Industries Inc., a St. Louis-headquartered subsidiary of Houston Natural Gas Corporation.

Set Date For Rudder Club 42nd Annual Reception

Walter J. Cogan, the general chairman, and **James F. Servino**, the commodore, have announced that the 42nd annual Rudder Club Christmas Reception and Party will be held on December 2, at the Vista International Hotel, 3 World Trade Center, New York City, in the Nieuw Amsterdam Ballroom. Tickets are \$60 including a gift. The reception begins at 5:30 p.m. Additional information may be secured from **Jeff Blinn** at Moran Towing, One World Trade Center, Suite 5335, New York, N.Y. 10004. Telephone (212) 466-3692.

**IF YOU
ARE DEALING
IN SHIPPING
WE ARE A PART
OF YOUR
BUSINESS.**



**CANTIERI
NAVALI
RIUNITI**

SHIPBUILDING SHIPCONVERSION SHIPREPAIRS

HEAD OFFICE:
GENOA (Italy) via Cipro 11
Tel. 010/59951 □ Tlx. 270168

SHIPREPAIRING YARDS:
Genoa □ Tlx. 270645
Palermo □ Tlx. 910041/720674

MGN □ Tlx. 270370

SHIPBUILDING YARDS:
Ancona □ Riva Trigoso □ Palermo

Main Agents:

LONDON : Compass Shipping & Trading Co. - Tx 884108 COMPAS G
USA : Overseas Shipyard Inc. - Tx 423975 MKM
NORWAY : Ebbe C. Astrup A.S. - Tx 71612 EBAS N
GREECE : P. Wigham Richardson (Hellas) Co. - Tx 212332 PWR G
GERMANY : H. Glahr & Co. - Tx 245537 GLCO D

FINCANTIERI

SHIPBOARD TV AND VIDEO PLAYER REPAIR

- same day service
- by expert repairmen
- for all shipboard entertainment equipment
- including PAL, NTSC, SECAM TV, VTP, VTR
- in every major American port
- plus convenient equipment leasing
- and reasonable service contracts.

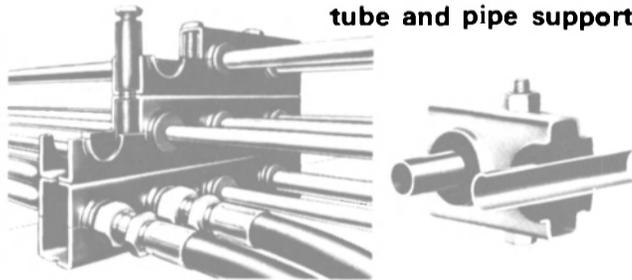


Electro-Nav

Elizabeth, NJ 07201, Tel: (201) 527-0099; (212) 697-7770;
Emeryville, CA 94608, Tel:(415)547-6201; New Orleans, LA
70130, Tel: (504) 528-9668; Pasadena, TX 77502, Tel: (713)
472-1324

Write 386 on Reader Service Card

THE MULTI-CLAMP SYSTEM NO SHOCK, NO VIBRATION, LOW NOISE tube and pipe support.



Multi-Clamp provides a total system of planning, installing and retaining pipes, hoses and tubing on machine tools, in plants, on process machinery, in vehicles—anywhere line runs are required for hydraulic or pneumatic, cooling, lubrication, refrigeration, fuel, etc.

Supports tube and pipe in singular or multiple rows, and stacks in "Building-Block" type construction.

- Off the shelf delivery in sizes 3/16" thru 6" O.D.
- Provides for simplified installation.

A true "do-it-yourself" system.

OTHER HYDRO-CRAFT ACCESSORIES AVAILABLE INCLUDE:

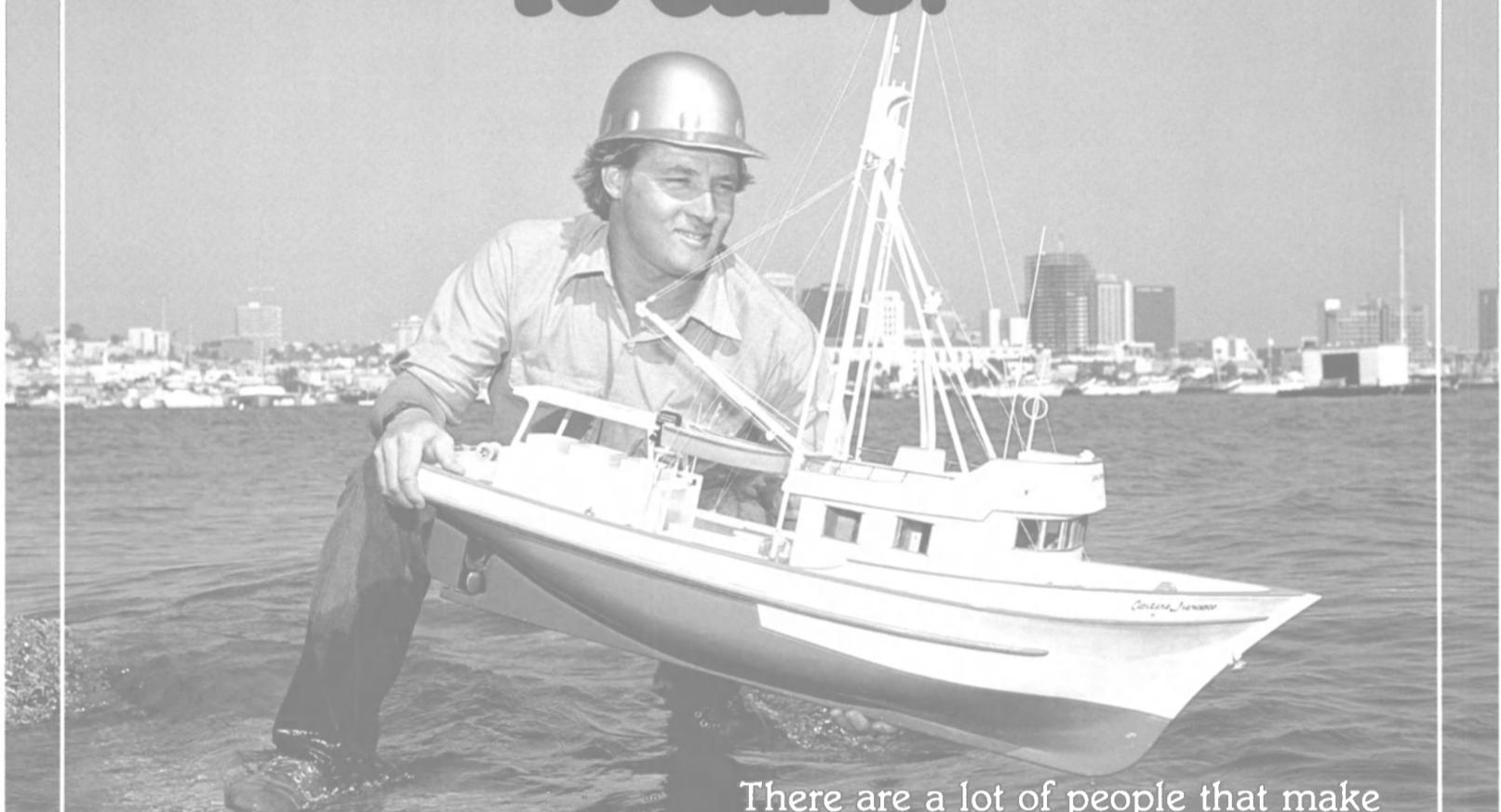
- Suction line filters
- Filler assemblies
- Reservoir end covers
- Flange kits
- Weld risers
- Glycerin Gauges

Carefully crafted, quality controlled products from the designers of Hydro-Craft Hydraulic reservoirs and Accessories



4223 EDGELAND, ROYAL OAK, MICH. 48073 phone (313) 576-1101

We're big enough to do the job and small enough to care!



There are a lot of people that make up Southwest Marine. Each one is important to the care and welfare of every ship that enters our yard. We're capable of large ship repair work for we have dry dock capacity up to 22,000 tons. We're capable of accepting ships anywhere along the west coast for we have yards in San Diego, San Pedro and San Francisco, but most of all we have people who care. When we set your ship back into the water, you can be sure it's done with pride, craftsmanship and satisfaction of a job well done.



SOUTHWEST MARINE, INC. / THE SHIPCLINIC

SPECIALISTS IN THE REPAIR, MODERNIZATION & MAINTENANCE OF SEAGOING VESSELS

SAN DIEGO YARD - Foot of Sampson Street, P.O. Box 13308, San Diego, CA 92113 (714) 238-1000

SAN PEDRO YARD - 985 S. Seaside, P.O. Box 3347, Terminal Island, CA 90731 (213) 519-0600

SAN FRANCISCO YARD - P.O. Box 7644 (Pier 28), San Francisco, CA 94120 (415) 543-0499

Special thanks to model boat builders John and Conrad LoCoco, Bob Crawford and Commander Bill Benson of the Maritime Museum of San Diego

Maritime Safety Group Honors 12 Persons For Technical Presentations

Edward F. McIntyre, general chairman of the Marine Section of the National Safety Council, announced recently that 12 specialists in accident prevention were cited by the organization for outstanding presentations that advanced efforts in safety

for workers in the U.S. maritime industry.

The action was taken at an awards ceremony held at the Palmer House Hotel, Chicago, in what has become a highlight event of the annual conference of the ship industry group that is held in conjunction with the meeting of the National Safety Council.

The three-day meeting of the Marine Section is the 64th yearly

gathering of the unit since it was established in 1917.

The awards were made for program papers delivered at the prior Marine Section conference on the basis of selection by a special committee. It was headed this year by Capt. Robert E. Hart, president of the Marine Index Bureau of New York. The award winners and their papers were: Capt. P.J. Cronk, U.S. Coast Guard, "Computer Assisted Anal-

ysis Techniques for Outer Continental Shelf Safety Studies."

Ron F. Bohn, United States Navigation, Inc., "The How and Why of Control Procedures for Packaged Hazardous Materials/Dangerous Goods Offered as Ocean Export Cargoes."

Charles Keller, National Fire Protection Association, for "The Marine Chemist and His Role in Marine Safety."

Capt. Harold F. Norton Jr., U.S. Coast Guard, for "Fire at Sea — A Casualty Revisited."

William Mattmiller, California Back School, "Prevention of Back Injuries in the Towing Industry."

Alvin V. Marks, Bean Dredging Corp., "Why Bean Uses Super 8 for Safety Training."

Thomas Smith, Tidewater Marine Service, Inc., "Tidewater Safety Communications."

Dennis Gaubert, J. McDermott Corp., "Safety Planning in Production and What No Man Has Ever Done."

J.P. Brown, Lykes Bros. Steamship Co., Inc., "Packaging for Safety and Security in Water Transport."

Douglas Hard, Marine Safety International, "Safety Aspect of Bridge Simulator."

Tom Brooks, Marsh & McLennan, "The Intermesh Between Claims Handling and Safety."

Thomas Tooker, National River Academy, "Towboat Officer's Role as Supervisor."

Mr. McIntyre noted that in addition to Captain Hart, the Best Paper Award selection committee included David S. Walker of Boston Towboat Co.; Capt. A.D. Utara of the U.S. Coast Guard; and William T. McCuen of John W. McGrath Corp.

The Marine Section is one of 28 separate industry groups that are part of the National Safety Council.

NEW GEMS FLOW RANGER Liquid Flow Meter

Accurately Measures Flow Rates and Totals in G.P.H.

Can help minimize fuel consumption on Marine vessels.

- Positive displacement design.
- Models available to measure flow rate from 0 to 360 G.P.H., with maximum resolution of 0.01 gallon.

The GEMS FLOW RANGER Flow Meter Performance.

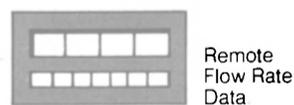
This unique Flow Meter was designed to help monitor fuel consumption on marine diesel engines. The Flow Ranger will measure the total amount of fuel used, thereby permitting you to compensate by adjusting engine performance to maximize efficiency.

The GEMS FLOW RANGER Flow Meter Operates at Low Flow With High Accuracy.

Provides an electrical signal to remote control circuits or displays for continuous flow measuring. All without loss in accuracy and with virtually no pressure drop. Features a unique positive displacement design to provide long life, without gears, rotating vanes or pistons to wear out.

Your Best Connection in Total Flow Control.

This new Flow Meter offers the same quality and continued dependability that has made GEMS a leader in the marine industry for more than 25 years.



Remote Flow Rate Data

For application information, call toll-free (800) 321-6070.

GEMS SENSORS DIVISION
Plainville, Connecticut 06062 (203) 677-1311 Telex: 99306

Transamerica Delaval



SHIPBUILDING AND DOCKING CO.

Head Office: PRAT 856, Piso 14, Valparaiso, Chile.

Telephones: 57129-59411 — Telex: 30305 Asmar CL

PRIVILEGED POSITION IN SOUTHERN HEMISPHERE, SOUTH AMERICA, CHILE

VALPARAISO YARD
Telephones: 51550
59427
Telex: 30527 Asmar CL

TALCAHUANO YARD
Telephones: 41628
42656
Telex: 60085 Asmar CL

MAGALLANES YARD
(Punta Arenas Port)
Telephones: 24762
24434
Telex: 80038 Asmar CL



LARGEST SHIPREPAIRING AND SHIPBUILDING FACILITIES ON THE SOUTH PACIFIC COAST.

- Docking Vessels up to 80,000 DWT
- New Building up to 70,000 DWT
- Off-Shore Constructions, Jack-up Rigs, Barges, Platforms
- Any Kind of Hull and Engine Repairs
- Voyage Repairs
- Electronic and Electrical Services
- Flying Squad Service

AUTHORIZED SERVICE

- Sulzer
- Mitsubishi
- Burmeister & Wain
- Raytheon
- Sperry
- Krupp Atlas
- Siemens
- Ayrodev International (License)
- Hatlapa

AGENTS

U.S.A. New York

Jackson Marine Corp.
Robert Catharine
Tel.: (212) 269-0937
TLX: (ITT) 423175
(WU) 640164

GERMANY - Hamburg

Peter Gast Shipping GmbH
Tel.: (040) 337141
TLX: 215588

UNITED KINGDOM London

Shiprepairers and Shipbuilders Ltd.
Tel.: 01 9285265
TLX: 918828

FRANCE Colombes

J. P. Naval
Tel.: 7805021
TLX: 611541 F
NORWAY Oslo
Ebbe C. Astrup A/S
Tel.: (02) 562580
TLX 71612

GREECE Piraeus

S. S. R. S. Ltd.
Tel.: 4133902
TLX: 212282
212735

HONG KONG

Shiprepairers and Shipbuilders Ltd.
Tel.: 5-290670
TLX: 62411

Brown & Root Affiliate Awarded Pipeline Contract In Danish North Sea Area

Brown & Root Norge A/S was recently awarded a contract by Dansk Borelskab A/S (Danbor) of Denmark for the installation of in-field pipelines in the Danish sector of the North Sea for the Danish Undergrounds Consortium's gas development project.

Commencing in May 1982 the contract covers the laying and trenching of approximately 50 km of pipelines varying between 6-inch and 14-inch diameters and includes the installation of risers and spool-pieces. Brown & Root's derrick lay barge BAR 331 will perform the work in water depths of between 37 and 43 meters.

Brown & Root Norge is an affiliate of Houston-based Brown & Root, Inc., a subsidiary of Halliburton Company.

Award \$12-Million Contract To Uniflite For Boats Used By Navy's Special Forces

The U.S. Naval Sea Systems Command awarded a contract valued at \$12.6 million to Uniflite, Inc., Bellingham, Wash., fiberglass boat manufacturer, for the construction of 38 trailerable 36-foot Seafox special warfare craft, according to **James J. Doud Jr.**, Uniflite president.

The smallest combatant craft currently being built for the Navy, Seafox has been developed for use by the Navy's SEAL (sea, air, land) teams, the naval equivalent of the Army's Green Berets. SEAL teams are experts in underwater demolition, coastal raids, landing and evacuation of commandos, and similar warfare operations.

Constructed of fiberglass, these vessels are powered by a pair of Detroit Diesel 6V-92TA diesel engines rated at 450 hp each and outfitted with extensive communications and navigation equipment. Seafox is designed to be carried in davits on large ships or airlifted in C-130 aircraft.

Included in the contract are especially designed trailers for land transport as well as provision of spare parts and logistics support services.

Uniflite developed the prototype Seafox under a 1977 Navy contract and is currently producing eight of the craft under a contract awarded in 1980. The new order for 38 boats is a multi-year agreement to meet 1981 and 1982 Navy requirements.

Hold Dedication And Ribbon-Cutting Ceremony At New Bell Halter Yard

A dedication and ribbon-cutting ceremony took place recently for a new \$10-million Bell Halter shipyard that is nearing completion in East New Orleans, La.

Bell Halter Inc. was formed in 1980 by Bell Aerospace Textron, Division of Textron Inc., and Halter Marine, Inc. of New Orleans, to produce surface effect ships (SES).

Attending the ceremony were Maj. Gen. **Edward J. Megarr**, Commanding General, 4th Marine Division, USMCR; Capt. **Charles H. Piersall**, USN, Project Manager, Amphibious Ship Acquisition Project; Louisiana Congressman **Robert L. Livingston**; Louisiana Congresswoman **Lindy Boggs**; **Robert P. Straetz**, chairman of the board, Textron Inc.; and **Harold P. Halter**, chairman of the board, Halter Marine Inc.

The new shipyard will produce high-quality, low-cost, marine air cushion landing craft for the U.S. Navy. The craft, designated "LCAC" (Landing Craft, Air Cushion) by the Navy, will be produced under a subcontract

from Bell Aerospace. A U.S. Navy contract for the detail design and long lead materials for this new type of amphibious landing craft has been awarded to Bell. The contract contains two options for initial construction efforts for six craft. Follow-on plans call for construction of up to 107 craft in total.

The site for the new Bell Halter facility is on 14.7 acres of land

directly adjoining an existing Halter shipyard in eastern Orleans Parish (County) adjacent to U.S. Highway 90 and Bayou Sauvage. This site provides direct access to the Intracoastal Waterway, the Mississippi River, the Mississippi River Gulf Outlet, and the Gulf of Mexico. In its present configuration, the facility consists of a 168,000-square-foot building. It is planned that ap-

proximately 110,000 square feet of additional manufacturing area will be added at a later date to meet increased production rates.

Special equipment is being developed and installed and it is anticipated that staffing will be underway by March 1982. Initially, 250 persons with general shipyard skills will be hired, with later expansion increasing that number to 600.

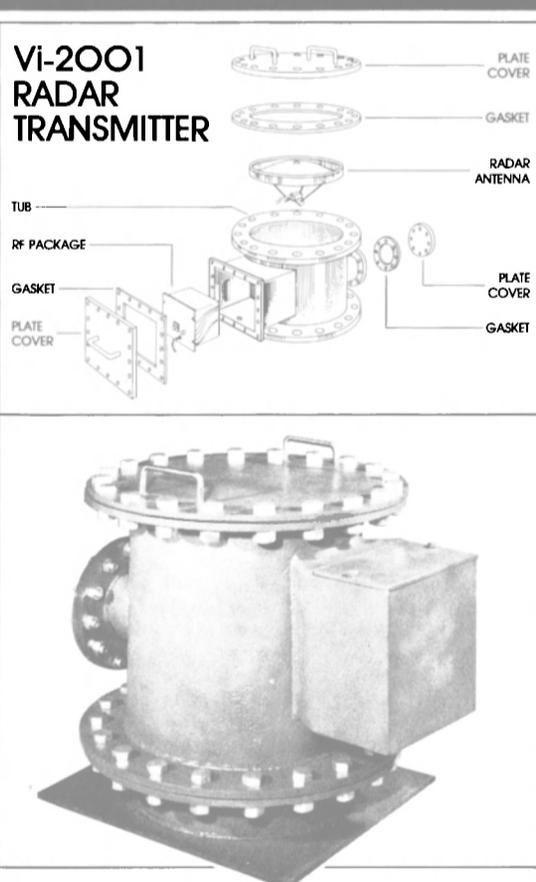
The Tank Gauging System that is ahead of the fleet.

Latest Computer Techniques

The Vitronics, Vi-2001 tank gauging system is a radar based system using the latest technology in hardware and advanced aerospace techniques for signal processing. The system will decipher the true signal from the numerous false returns. Thus, providing an accurate measurement of the tank liquid surface, with no interval tank modifications. Accuracy to 1/8 inch over the entire 200 foot range.

The radar signal is not affected by washing jets (COW) system, and also can operate at sea. Therefore, Vitronic Vi-2001 can comply with IMCO closed loading regulations.

Since there are no moving parts and all electronic components are mounted outside the tank, maintenance cost is low.



Continuous Display

The Vitronic Vi-2001 will continuously display all tank level readings in feet or meters, on digital, and/or, analog indicators.

Continuous Alarms

Vi-2001 will provide continuous low-low, low, high, and high-high visual and audio alarms.

Installation And Service

All sub-systems are designed for immediate installation and service. All electronic components are quick disconnect for easy field repair. The RF assembly, at the individual tank, can be rapidly exchanged without depressurizing the tank.

Stay ahead of the fleet. For more information and brochure, contact:

VITRONICS

3694 Westchase Drive Houston, Texas 77042
Phone (713) 978-7973 TWX 910-881-5399

SNAME's Great Lakes And Rivers Section Meets At University Of Michigan

The centennial observance of the founding of the naval architecture and marine engineering programs at the University of Michigan was linked with the recently held fall meeting of the Great Lakes and Great Rivers section of The Society of Naval Architects and Marine Engineers.

Five technical papers were presented in a morning session at the university.

The paper subjects and authors were: **Roger A. Peterson**, professor of marketing in the business administration department at Eastern Michigan University, "Maritime Tanker Safety: Some Conclusions and Recommendations for Improvement"; **Kurt W. Hagemester**, National Steel and Shipbuilding Company, San Diego, Calif., "Institutional Barriers to Improving Productivity in U.S. Shipyards"; **Sudhir K. Gupta**, Designers and Planners, Inc., Arlington, Va., "Comparison of United States and Foreign Shipbuilding Practices"; **Michael G. Parsons**, professor and chairman of the University of Michigan department of naval architecture and marine engineering, "Mode Coupling in Torsional and Longitudinal Shafting Vibrations"; and **Noel L. Bassett**, American Steamship Company,

Buffalo, N.Y., "Design and Operation of a Highly Maneuverable Great Lakes Self-Unloader."

Buffalo, N.Y., "Design and Operation of a Highly Maneuverable Great Lakes Self-Unloader."

Canadian Shipbuilders Group Sets Date For 1982 Conference

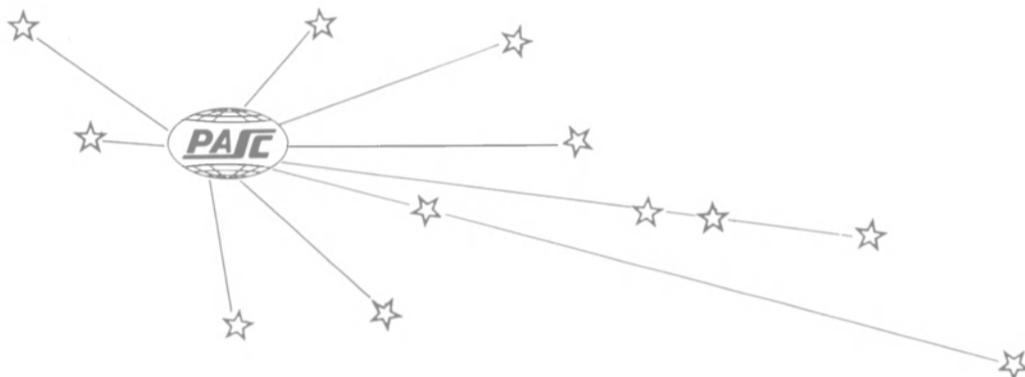
The Canadian Shipbuilding and Ship Repairing Association announces that plans are complete for the 34th annual technical conference to be held at the Hyatt Regency Hotel, Montreal, Quebec, Canada, on March 2, 1981.

The meetings actually begin on Monday, March 1, with closed session meetings for members only. The theme for the open session on March 2 will be "Prelude to a New Canadian Shipbuilding Era: Opportunities and Plans." There will be a four-speaker panel for the morning session and a three-speaker panel for the afternoon session. Each speaker will present a paper of between 15 and 20 minutes. Papers will be followed by a general discussion and question period.

The annual technical conference, always held in Montreal, is by far the biggest and best known CSSRA event and is widely attended by members of the marine fraternity. The annual banquet is scheduled to be held at 7:30 p.m. on March 2 in the Regence Ballroom.

For more information contact **Mrs. Joy MacPherson**, Secretary/Treasurer, Canadian Shipbuilding and Ship Repairing Association, 801-100 Sparks Street, Ottawa, Ontario, K1P 5B7, (613) 232-7127.

To Our Friends and Customers A Joyous Holiday and a Prosperous Nineteen Hundred Eighty Two



You may be assured our every effort at Pan American Systems Corp. is to earn your good will and we look forward with anticipation to serving you in 1982.

Visit Us At The 1982 Work Boat Show
Booth 1116

PAIC Pan American Systems Corp.

P. O. DRAWER 400 BELLE CHASSE, LA. 70037 (504) 656-2291

Write 426 on Reader Service Card

REFRIGERATION AND AIR CONDITIONING



- Air Conditioning & Refrigeration Systems Design, Sales and Service
- Stainless Steel Refrigerators and Freezers
- Ice Cubers
- Walk-in Coolers and Freezers
- Service and Parts Available 24 Hours A Day
- Rebuilding of All Ferrous and Non-Ferrous Surfaces With "Belzona Molecular Metal"

Over 50 ships serviced in the past year alone ● Our employees have over 80 years total experience in marine refrigeration ● Complete inventory of parts—York—Carrier—Chrysler—Henry—Alco—Penn—Sporlan—J & E Hall—Danfoss

new equipment—parts—services

ADRICK Cooling Corp.

30 B. Remington Blvd.
Ronkonkoma, New York 11779 (516) 585-4231
PLEASE SEND BROCH.—E TO

MR



Name _____
Company _____
Address _____
City _____ State _____ Zip _____

56

Write 133 on Reader Service Card

Building a new boat?

call **MATTON FIRST**

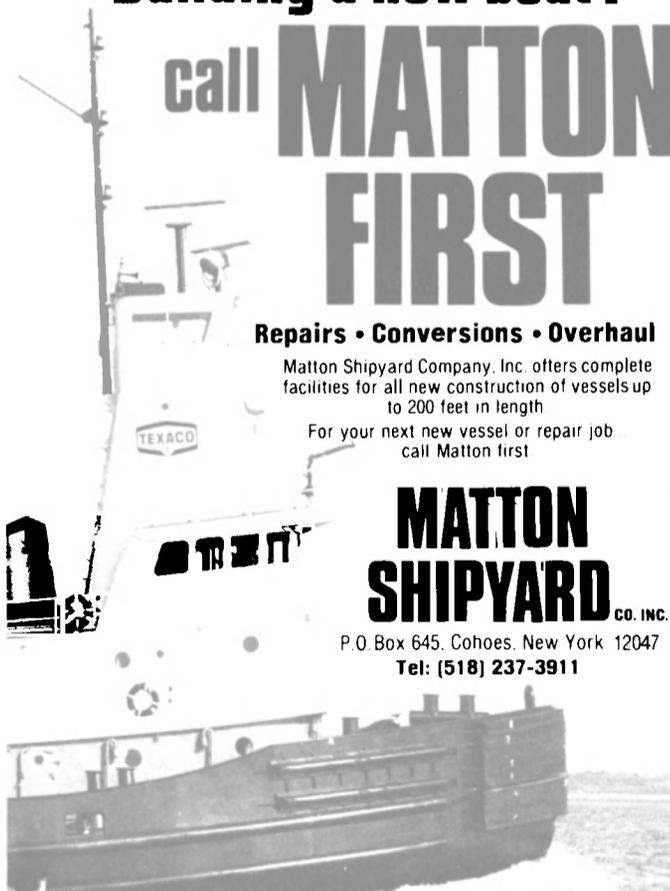
Repairs • Conversions • Overhaul

Matton Shipyard Company, Inc. offers complete facilities for all new construction of vessels up to 200 feet in length

For your next new vessel or repair job call Matton first

MATTON SHIPYARD CO. INC.

P.O. Box 645, Cohoes, New York 12047
Tel: (518) 237-3911



Janet Roberts Named Freight Operations Mgr. At Matson Navigation



Janet E. Roberts

Matson Navigation Company has promoted **Janet E. Roberts** to manager of freight operations for northern California. She succeeds **Len L. Waller Jr.**, who has been assigned to Matson Terminals, Inc.

Ms. Roberts formerly was assistant manager, freight operations. She joined Matson in 1973 and later served as freight sales representative and container operations supervisor before being named assistant manager in August 1980.

Write 256 on Reader Service Card

Maritime Reporter/Engineering News

Sir Yue-Kong Pao Honored By Japan

Sir Yue-Kong Pao, Hong Kong shipping magnate, has been awarded the Insignia of the Order of the Sacred Treasure by the Emperor of Japan, in recognition of his contributions to world shipping and the Japanese shipping and shipbuilding industries.

Sir Yue-Kong is chairman of the World-Wide Shipping Group, generally acknowledged as one of the largest independent shipowning organizations in the world. He is also chairman of the International Association of Independent Tanker Owners, which represents most of the independent tanker interests in 26 maritime countries.

Sperry Introduces New Ship Control System —Literature Available

The Sperry division of Sperry Corporation, Great Neck, N.Y., has introduced a unique, all-digital ship control system called the SRP-2000.

John V. Walsh, vice president and general manager of the division's Marine Systems Unit, stated the SRP-2000 is more than an autopilot, "... providing information on the entire navigation and steering system from a single console as well as a wealth of other ship information when connected to appropriate sensors."

The SRP-2000 system uses a 12-inch cathode ray tube for display of all primary ship control information, with a simulated tape heading repeater always displayed. On demand, the helmsman may call up rate-of-turn scale, rudder angle scale, and both ship operating information and system operating instructions. Information is stored, monitored, and displayed by four microprocessors within the console.

The SRP-2000 can also connect to navigation sensors, and display navigation information being received by either Loran or satellite navigation systems. Navigation information can also be inserted into the system manually. If desired, way points can be inserted into the SRP-2000 and the system will automatically determine the proper course and steer to it.

Sperry's new adaptive steering system, available as an option with current Sperry autopilots, is incorporated as standard equipment in the SRP-2000. This system has demonstrated savings of up to 3 percent in fuel use for some ships.

The SRP-2000 meets all international standards for safety, including complete dual hand-electric steering controls, emergency steering controls which bypass the system electronics, and full

alarm panel at the operating station.

The alarm panel can also provide more precise details on failures in the steering system, displaying those details on the CRT automatically.

"We have embodied a number of features into the SRP-2000 to provide ease of installation and operation," said Henry Johnston, marketing manager for the sys-

tem. "First, the system uses relatively low-voltage for steering control, eliminating the need for large power cables on the bridge. The main power cables are connected to rudder control units aft. Also, we have used a very precise helm construction, so that one complete revolution of the wheel will be equal to a 20-degree rudder movement. The SRP-2000 also has complete operating in-

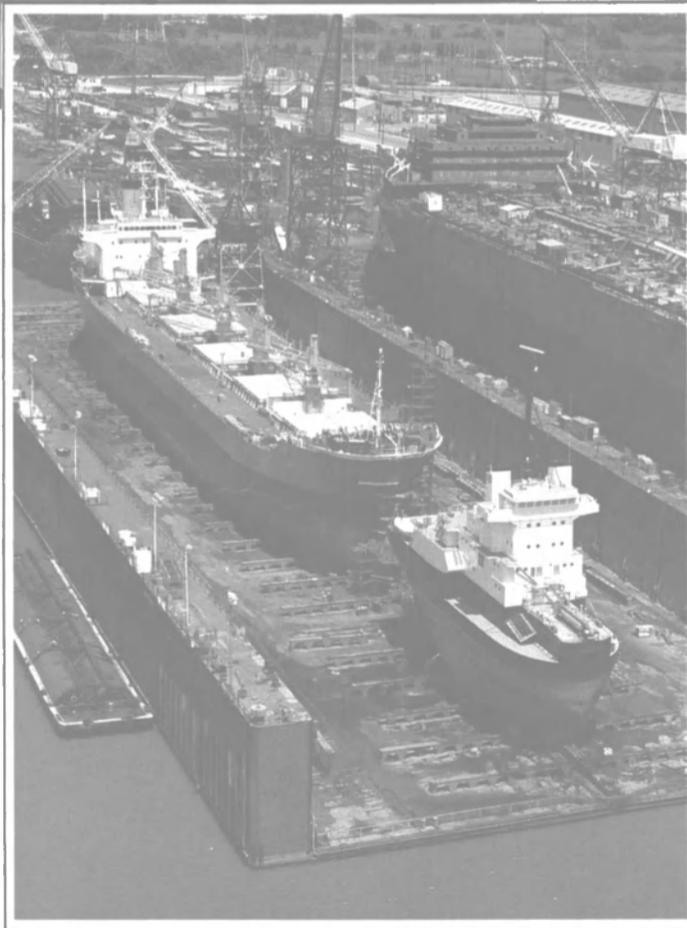
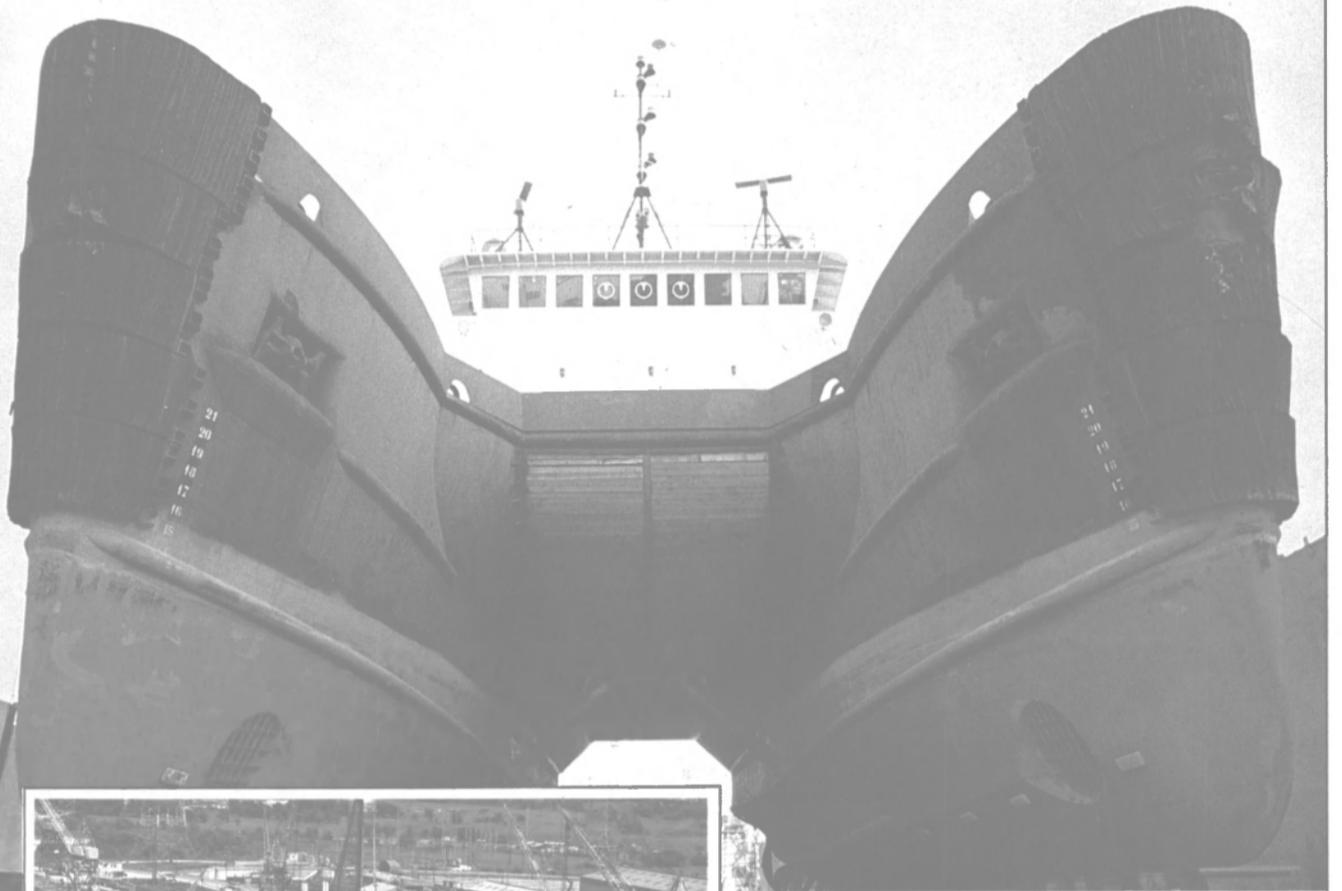
struction stored in its memory, so a helmsman can simply call up on the CRT any needed instructions."

The SRP-2000 can be interfaced with up to three remote steering control units, and additional CRT displays can be slaved to the main SRP-2000 CRT.

For literature containing complete information on the SRP-2000,

Write 20 on Reader Service Card

For the Broad of Beam



Avondale's drydock at the Main yard can accommodate any vessel that can navigate the Mississippi River. Our yard flexibility and efficiency allow for service of all ocean going vessels including drill rigs up to 215' wide, and of course... all types of inland vessels.

When your needs are yard needs; come to Avondale. The experience counts and you'll get quick turnaround. Quick, efficient and dependable. We feel good about being best.

Avondale Shipyards, Inc. Marine Repair Division



P.O. Box 50280
New Orleans, Louisiana 70150
(504) 436-5274

A subsidiary of Ogden Corporation.

St. Louis Ship Announces Management Appointments At Engine Repair Division

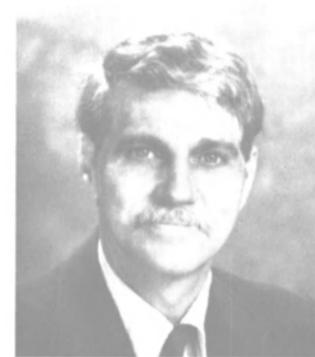
The appointment of Al Spaete to the position of manager of the newly established engine repair division was announced by Edward Renshaw, president of St. Louis Ship. At the same time, Mr. Renshaw announced the appointment of James V. Bishop as

administrative manager of the division.

The engine repair division, housed in a new 8,400-square-foot overhaul facility at 3460 South Broadway in St. Louis, has been developed to provide full, professional marine diesel and marine equipment repair services throughout the United States.

Mr. Spaete, a 27-year employee of St. Louis Ship, has served the company in numerous positions,

most recently as manager of machinery. In addition to his duties as manager of the engine repair division, Mr. Spaete is also superintendent of the machine shop and directs the river trials and startup of machinery on all new towboats. He brings with him to his new position substantial experience in all phases of diesel, steering gear, and machinery repair and maintenance.



Al Spaete

Mr. Bishop was transferred within St. Louis Ship from the company's former subsidiary, The Dixie Dredge Corp., where he was its general manager prior to its sale. He came to St. Louis Ship in 1977 from Hunter Spring Co., Hatfield, Pa., where he successfully guided the company into international markets.



J. V. Bishop

St. Louis Ship is a division of Pott Industries, Inc., a subsidiary of Houston Natural Gas Corporation.

New Brochure Describes Allied Water/SweetWater R/O Water Maker

A new product brochure on the Allied Water/SweetWater reverse osmosis water maker is now available from Allied Water Corporation of Walworth, Wis. According to Bob Daniels, vice president, the R/O brochure thoroughly describes the reverse osmosis process complete with membrane illustrations, system flow diagrams, product water test results, and cost comparisons.

All standard and optional features are clearly defined. Specifications featured include capacities, dimensions, and weights as well as feed water flow rates, water connection sizes, and electrical requirements. A special section emphasizes the importance of understanding proper prefiltration.

The Allied Water/SweetWater unit is said to be an energy-efficient R/O water maker that is smartly designed and engineered, capable of producing fresh water from virtually any water source. SweetWater is compact and portable. Units range in size from 100 gpd to 4,000 gpd. Applications include, but are not limited to, commercial-pleasure marine, offshore drilling, hospitals, resorts, and residences.

For further information on the Allied Water/SweetWater reverse osmosis water maker,

Write 21 on Reader Service Card



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



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



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



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

WORKING CLASS.

These vessels are built just as tough as the jobs they have to do. Built by proud Florida shipbuilders who bring generations of craftsmanship to every project.

They carry on their skilled tradition in one of the South's best equipped yards. Spacious assembly

buildings, five assembly locations, sophisticated welding capabilities and year 'round good weather make it possible to build a wide variety of vessels and to build them well.

We deliver the best boat for the money . . . and we deliver it on schedule.



Atlantic Marine, Inc.

P.O. Box 138 Ft. George Island, Jacksonville, Florida 32226 U.S.A.
(904) 251-3111 TWX: 8109326893

WELCOME TODD SHIPYARDS TO THE SYNCROLIIFT® FAMILY



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

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

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



SYNCROLIIFT®

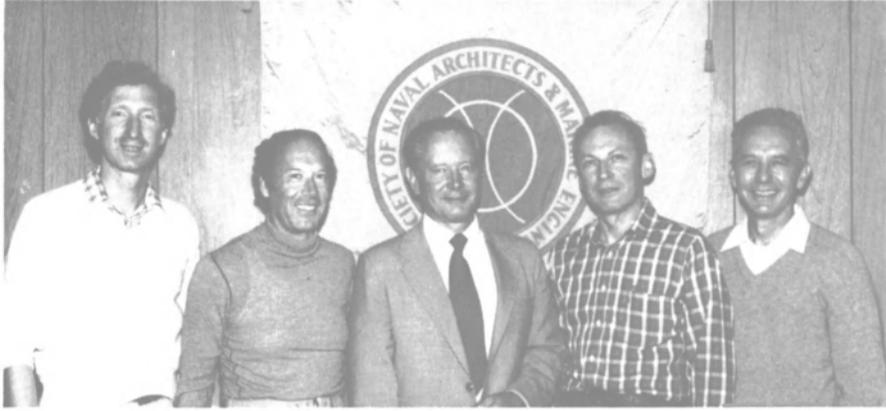
SHIPLIFT & TRANSFER SYSTEMS

8970 S.W. 87th CT. • P.O. BOX 560008 • MIAMI, FLORIDA 33156
PHONE: 305-271-5721 • TELEX: 051-9340

A PRODUCT OF
PEARLSON ENGINEERING COMPANY, INC.
A MEMBER OF THE NEI GROUP

The Most Experienced Builder of Shiplift Systems in The World
R. PEARLSON LTD. EXCLUSIVE REPRESENTATIVES

Papers On Containerships, Bulkers Presented By SNAME California Sections



Joint meeting of the Northern and Southern California sections of SNAME, from left: **Roger Potash**, chairman, Northern California section; **Henry Kozlowski**, member; **L.A. Harlander**, author; **Art Haskell**, member; **Bob Herbert**, member.

The world economy depends on the speedy, reliable transport of dry cargo across the oceans. Most of that cargo is carried either in drybulk carriers or containerships, both of which are highly evolved forms of ocean transport.

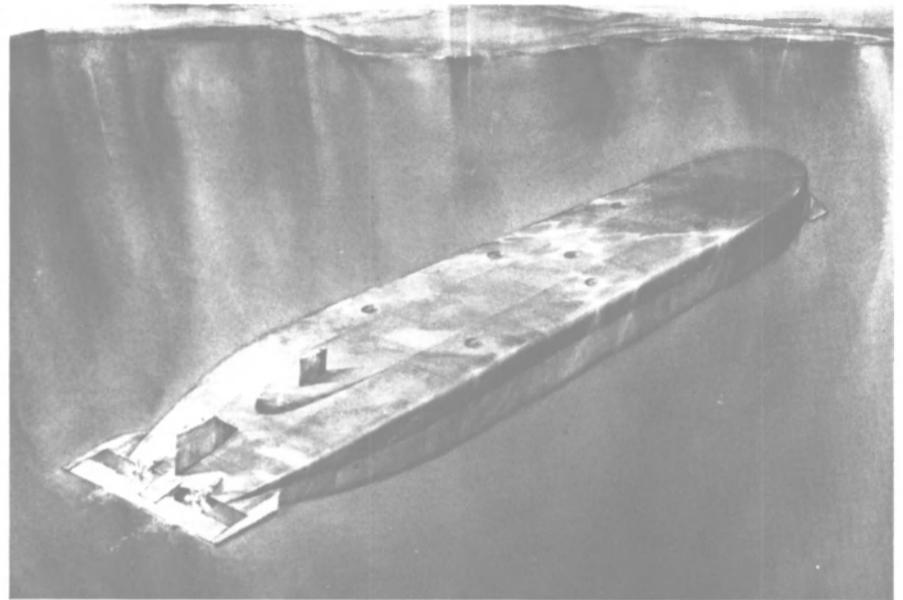
Two technical papers focusing on the development of these ships were presented before a recent joint meeting of the Northern and Southern California sections of The Society of Naval Architects and Marine Engineers, held at the Carmel Highlands Inn, Carmel, Calif.

Clyde Jacobs, president of Seaboard Shipping Co. Ltd., Vancouver, British Columbia, Canada, presented a paper entitled "The Development of the Specialized Dry Bulk Carrier." It traced the evolution of this vessel type from the earliest steel ships of the 1890s to the contemporary designs specialized to carry lumber, automobiles, woodchips, or

newsprint. Mr. **Jacobs** presented evidence of a trend toward more fuel efficient ships operating at slower speeds.

L.A. Harlander, vice president of operations, American President Lines, Oakland, Calif., presented a detailed discussion of "Container System Design Developments Over Two Decades," in which he emphasized the crucial role of container standardization in the design of container systems. Mr. **Harlander** asserted that current container strength standards are excellent, and that below-deck container storage has reached an optimum level of development. On-deck stowage schemes, he contended, still require improvement.

Copies of the papers may be obtained by contacting **R. Keith Michel**, Papers Committee, Herbert Engineering, 88 First Street, San Francisco, Calif. 94105.



An artist's concept of huge liquefied natural gas-carrying submarine tanker operating under Arctic ice. Loading at undersea terminals, tanker fleet would transport LNG from Prudhoe Bay, Alaska, to ice-free ports in Canada and Europe.

Submarine LNG Carrier Proposed By General Dynamics For Arctic Regions

Two veteran shipbuilders have combined their knowledge of surface ship, submersible and cryogenic technology to propose transporting liquefied natural gas (LNG) from the Arctic by submarine tanker.

P. Takis Veliotis, General Dynamics' executive vice president-marine and general manager of its Electric Boat Division, and **Spencer Reitz**, Electric Boat deputy general manager, outlined their proposal in a technical paper presented before the recent Gastech '81 LNG/LPS Confer-

ence and Exhibition in Hamburg, Germany.

Electric Boat is a leading designer and builder of submarines for the U.S. Navy. A sister division, Quincy Shipbuilding, is a leader in surface LNG tanker design and technology. The paper, "A Submarine LNG Tanker Concept for the Arctic," explores the technical feasibility and economic viability of the submarine LNG tanker concept for the Arctic.

The authors assert that the primary advantage offered by a submarine system over a surface ship system is the ability to deliver a constant cargo volume at uniform, predictable schedule intervals the year-round, regardless of surface ice and weather conditions.

Mr. **Veliotis** and Mr. **Reitz** say that the submarine concept would be competitive economically with a surface icebreaking tanker system and considerably lower in cost than a pipeline system.

The shipbuilders are proposing two versions of the tanker, one nuclear powered, the other conventional. The nonnuclear version, which would burn methane in supercharged boilers to power huge turbines, would be 1,470 feet long. The nuclear version would be 200 feet shorter. Each would have a beam of 228 feet and a depth of 92 feet. They would be operated by a crew of 32.

The ships would carry the LNG in six 341-foot cylindrical cargo tanks with a total volume of 140,000 cubic meters. The tankers would load the fuel in Prudhoe Bay at submerged cargo stations and unload at surface terminals in an ice-free Canadian port—via the Parry Channel—or at a European port.

Projected cost per ship would be \$700 million for the nonnu-

BURTON'S RECIPE:

Tuna Delight

Tuna Delight

Take one 20 cyl. engine, envelope in a steel hull, add auxiliaries, fish wells and outfitting. Season with Burton expertise, then cook for 15 months at Burton Shipyard until well done. Boat is then ready to serve on Captain and crew...a perfect TUNA DELIGHT. (Note: Seven dishes ordered by Van Camp Sea Food Co. Two delivered—Carol Linda & Patrician. Five still cooking at Burton).

Get your personal recipe for the most modern dependable and efficient purseiner on the market. Contact R.C. Moerbe at:

Burton Shipyard, Inc.

P.O. Box 3636, Port Arthur, Texas 77640
Telephone: (713) 962-5705 • Telex: 779-403

GIANNOTTI & ASSOCIATES, INC.
 NAVAL ARCHITECTS • OCEAN & MARINE ENGINEERING
 SHIP & OCEAN PLATFORM MODEL TESTING
 SHIP COLLISION ANALYSIS
 1847 BERKELEY WAY BERKELEY, CA 94703 (415) 841-5875
 703 GIDDINGS AVE. ANNAPOLIS, MD. 21401 (301) 268-0030

GIBBS & COX INC
 NAVAL ARCHITECTS & MARINE ENGINEERS

40 Rector Street • New York, N.Y. 10006
 (212) 487-2800

JOHN W. GILBERT ASSOCIATES, INC.

Naval Architects  Marine Engineers
 Brokerage
 58 COMMERCIAL WHARF BOSTON, MASS. 02110
 (617) 523-8370

Naval Architects Seattle, WA
 Marine Engineers 206-624-7850
 Ocean Engineers Telex 32-1226

THE GLOSTEN ASSOCIATES, inc.

Phillip Gresser Associates Ltd.

MARINE ENGINEERS
 CONSULTANTS & SURVEYORS

3250 SOUTH OCEAN BLVD.
 PALM BEACH FLORIDA 33480 TEL: (305) 586-0813

MORRIS GURALNICK ASSOCIATES, INC.

Naval Architects and Marine Engineers
 San Francisco, California
 (415) 543-8650

J. J. HENRY CO. INC.

naval architects • marine engineers • marine consultants
 New York Area offices in:
 Two World Trade Center Suite 9528 N.Y., N.Y. 10048 (212) 938-2100
 Philadelphia (609) 234-3880
 Washington, D.C. (703) 920-3435
 Boston (617) 383-9200
 Norfolk (804) 399-4097


HOFFMAN MARITIME CONSULTANTS INC.
 NAVAL ARCHITECTS & MARINE ENGINEERS-SPECIALIZING IN
 • HELMTM Onboard Monitoring & Guidance Systems • Vessel Performance & Route Analysis • Wave Data Analysis & Climatology • Port Vessel Traffic Management Systems • Vessel Casualty Simulation & Analysis
 P.O. BOX 186, GLEN HEAD, NY 11545
 TEL (516) 676-8499 TWX 510 223-0646

 **HYDRONAUTICS INCORPORATED**

INTEGRATED ENGINEERING SERVICES
 FOR THE MARINE INDUSTRY

RESEARCH • DEVELOPMENT
 DESIGN • TESTING

HYDRONAUTICS SHIP MODEL BASIN

7210 Pindell School Road, Laurel, Maryland 20810 Telephone: (301) 776-7454

Jantzen Engineering Co., Inc.

Consulting Engineers
 Ocean Mining and Dredging
 (301) 796-8585

6655 Amberton Dr. Baltimore, Md.

JAMES S. KROGEN & CO., INC.

NAVAL ARCHITECTS & MARINE ENGINEERS
 Tel. (305) 448-8169

3333 Rice Street, Miami, Fla. 33133

ALAN C. McCLURE ASSOCIATES, INC.

NAVAL ARCHITECTS • ENGINEERS
 2600 South Gessner • Suite 504 • Houston, Texas 77063
 (713) 789-1840 • Telex 792397

John J. McMullen Associates, Inc.



NAVAL ARCHITECTS • MARINE ENGINEERS • TRANSPORTATION CONSULTANTS
 New York, NY • Arlington, VA • Newport News, VA • Houston, Texas • Ventura, Calif
 One World Trade Center/Suite 3000/New York, New York 10048/(212)466-2200

MACLEAR & HARRIS, INC.

28 WEST 44 ST.
 NEW YORK, N. Y. 10036
 212-869-3443
 NA & ME FAST BOATS

MARINE DESIGN INC.

NAVAL ARCHITECTS & MARINE ENGINEERS
 Formerly Tams Inc., Established 1865
 401 BROAD HOLLOW ROAD (Rt. 110)
 MELVILLE, L.I., NEW YORK 11746
 516 293-4336

TUGS, BARGES, WORK BOATS & CONVERSIONS

Marine Technical Associates, Inc.

MARINE ENGINEERS/ELECTRICAL CONSULTANTS
 USCG AND IMCO REGULATIONS
 Phone (201) 785-0006 195 Paterson Avenue
 TWX 710 988 5738 Little Falls, N. J. 07424

RUDOLPH F. MATZER & ASSOCIATES, INC.



NAVAL ARCHITECTS
 MARINE ENGINEERS
 CONSULTANTS
 SURVEYORS

13891 ATLANTIC BOULEVARD
 JACKSONVILLE, FLORIDA 32225
 (904) 246-6438 TWX 810-828-6094

GEORGE E. MEESE

NAVAL ARCHITECTS • MARINE ENGINEERS
 CONSULTANTS • SURVEYORS
 DESIGNS FOR YACHTS AND COMMERCIAL VESSELS
 WOOD—ALUMINUM—STEEL—PLASTIC
 TELEPHONE 194 ACTION ROAD
 COLONIAL 3-4054 ANNAPOLIS, MARYLAND

 **Metritape®**

Liquid Level & Temperature Gauging

for Cargo • Ballast • Draft • Crude Oil • Products • Chemicals
 Central & deck-mounted readouts & alarms
 33 Bradford Street, Concord MA 01742, U.S.A.
 617/369-7500 Telex: 92-3492

NELSON & ASSOCIATES, INC.

MARINE
 SURVEYORS CONSULTANTS
 ENGINEERS APPRAISERS
 1405 N.W. 167 St., Miami, Fla. 33169 (305) 625-1043
 Telex: 51-5704 Cable: NELSURVEY



NKF ENGINEERING ASSOCIATES, INC.

• NAVAL ARCHITECTURE & MARINE ENGINEERING
 • ACOUSTICS, VIBRATION & SHOCK (DYNAMICS)
 • NAVAL SHIP & SUBMARINE SURVIVABILITY
 • SAFETY, DAMAGE CONTROL & FIRE FIGHTING

8150 LEESBURG PIKE SUITE 700 VIENNA,
 VIRGINIA 22180 (703) 442-8900 CABLE: NKFEA

Nickum & Shaulding Associates, Inc.
 naval architects • marine engineers



911 western ave., seattle wa. 98104 • (206)382-4444 • tlx:320053

Captain Conrad P. Nilsen

Marine Consultant Cargo Surveyor
 66 Beverly Road
 Bloomfield New Jersey Zip 07003
 (201) 338 4137

NORGAARD & CLARK

CONSULTING NAVAL ARCHITECTS
 SAN FRANCISCO, CALIFORNIA (415) 398-2202

OCEAN-OIL INTERNATIONAL ENGINEERING CORPORATION

3019 Mercedes Blvd., New Orleans, Louisiana 70114, U.S.A.
 NAVAL ARCHITECTS • MARINE SURVEYORS
 SALVAGE ENGINEERS
 Hector V. Pazos, P.E.
 504/367-4072

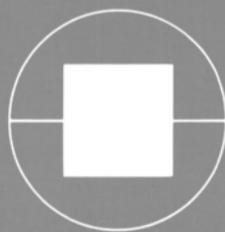
NAVAL ARCHITECTS &
 MARINE ENGINEERS



5252 Balboa Avenue, San Diego, California 92117
 Telephone (714) 292-9102 PRC Guralnick

Offshore Power Systems

A Westinghouse Enterprise

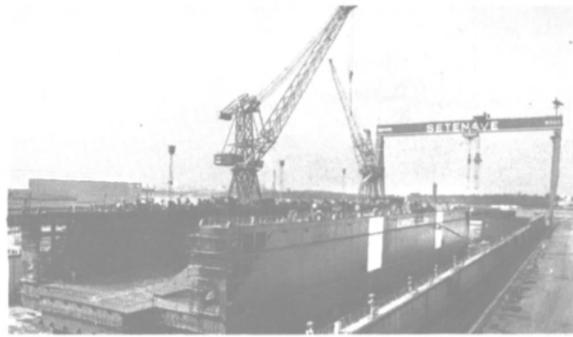


**Naval Architects
 Marine Engineers
 Marine Design & Modeling**

8000 Arlington Expressway
 Jacksonville, Florida 32211

(904) 724-7700 Telex: 568406

Christen 15,000-Dwt Floating Dock Built At Setenave



The 15,000-dwt floating dock being built for Brazil at Setenave yard in Portugal.

The 15,000-dwt floating dock being built for ENAVI, S.A. of Brazil by Setenave-Estaleiros Navais de Setubal S.A.R.L., Setu-

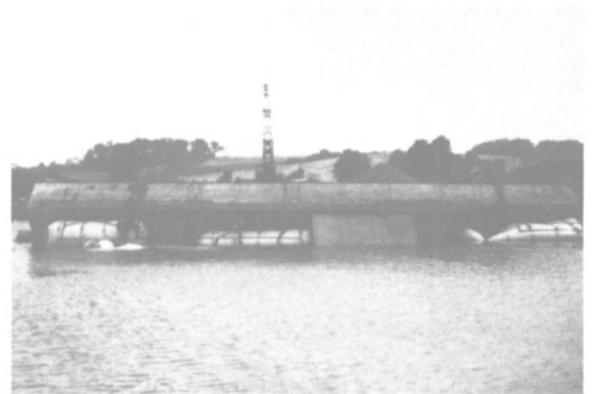
bal, Portugal, was christened the "Almirante Guilhem" at ceremonies held recently at the shipyard.

The dock, built at a cost of \$15 million, measures 190 meters overall, 180 meters over keel blocks, with a clear inside width of 34 meters. The dock has a molded depth, upper deck, of 15.6 meters and a depth over keel blocks of 7.75 meters.

Built to Lloyd's Register of Shipping classification, the new dock will be towed to Port Niteroi, Rio de Janeiro, after all tests and trials are completed.

Lift Bags Used To Salvage 120-Ton And 50-Ton Barges —Literature Available

Sea Wide Services Ltd. of Cornwall, England, recently salvaged the 120-ton barge



A twin pontoon dredging barge under tow after being raised from 30-foot depth by use of lift bags.

Boy Brendan from a depth of 70 feet in a three-day, four-diver operation using 20 PR5 and 22 PR1 J.W. Automarine lift bags.

Sea Wide divers rigged their 122 tons of Automarine lift bags around the perimeter

PACIFIC INDUSTRIES INC.

Alex O. Henderson President

MARINE SERVICES — WORLDWIDE OWNERS REPRESENTATION. CARGO-REPAIRS-SALES

SUITE 1915 1440 Canal Street, New Orleans, LA 70112
Phone: Office: (504) 586-9960 TELEX: 584322
A.O.H. (504) 288-8798

PILOTAGE CONSULTANTS, INC.

P.O. Box 3

Capt. Jim Stillwagon Atlantic Highlands, N.J.
516-742-2467 07716

M. ROSENBLATT & SON, INC.

NAVAL ARCHITECTS AND MARINE ENGINEERS

New York City 350 Broadway (212) 431-6900
San Diego 1007 Fifth Avenue (714) 238-1300

San Francisco 657 Mission Street (415) 777-0500
Charleston Heights, S. C. 3370 Rivers Avenue (803) 744-1686

Arlington, Va. 2341 Jefferson Davis Highway (703) 892-5680

M. ROSENBLATT & SON, INC.
NAVAL ARCHITECTS AND MARINE ENGINEERS

STEAMSHIP VENDORSSM

World-Wide Credit Reporting Service

Literature on Request

P.O. Box 2850
Long Beach, CA 90801 U.S.A. (213) 547-0527

ROBERT L. STEVENS ASSOC. INC.

MARINE DRAFTING SERVICES

654 BEACON ST. BOSTON, MA 02215
(617) 262-8613

SEACOR

SYSTEMS ENGINEERING ASSOCIATES CORPORATION

Naval Architects

Marine Engineering

Systems Analysis

Combat Systems Training

Engineering Department Training

Total Ship Testing

CALL FOR FREE BROCHURE TO ANY OF THE ABOVE OFFICES

CHERRY HILL
NEW JERSEY
(609) 429-7050

ARLINGTON
VIRGINIA
(703) 521-2977

VIRGINIA BEACH
VIRGINIA
(804) 425-3010

CHULA VISTA
CALIFORNIA
(714) 426-9538

DOVER
NEW HAMPSHIRE
(603) 742-8770

WADAM

WARTSILA ARCTIC DESIGN AND MARKETING

offers consulting services related to ships and structures in ice:

- model and ship testing in ice
- feasibility studies
- studies on ice conditions and properties
- design

The experience of Wärtsilä is based on the design and construction of more than 50 icebreakers (deliveries 3 400 - 36 000 shp) and ice-going cargo ships.

WADAM WARTSILA HELSINKI SHIPYARD
P.O. BOX 132, SF-00151 HELSINKI 15, FINLAND
TEL: 358-0-1941 TELEX: 12-1246 WHT SF

WESLEY D. WHEELER ASSOCIATES, LTD.

INTERNATIONAL MARITIME CONSULTANTS

104 EAST 40 STREET, SUITE 207

NEW YORK, N.Y. 10016

CABLES WESWHEELER
126476 WHEELER NYK
ITT WDW 426040
RCA 236922 WDW
WUI WDW 666627
212-867-4760



DIPLOMATE IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

THOMAS B. WILSON ASSOCIATES

NAVAL ARCHITECTS & MARINE ENGINEERS

920 N. AVALON BLVD. • WILMINGTON, CA 90744

PHONE (213) 518-0940

WIND SHIP[®]

WIND PROPULSION SYSTEMS

ANALYSIS - ENGINEERING - DESIGN

WIND SHIP DEVELOPMENT CORPORATION

P.O. BOX N. NORWELL, MA 02061 (617) 659-7946

WINK, Incorporated

CONSULTING ENGINEERS

Dock Damage Surveys

And

Design Of Marine Facilities

8020 Mayo Blvd
New Orleans, La. 70126
504/248-7924

SCHMAHL and SCHMAHL, INC.

Surveyors-Engineers-Average Adjusters

Germanischer Lloyd (Florida and Bahamas)—Hellenic Register
Japanese Marine Corp., Liberian Bureau of Maritime Affairs—
Bahamas Ministry of Transportation

SCHMAHL BUILDING

1209 S.E. Third Av., Fort Lauderdale, Fl. 33316

(305) 522-0689 - Miami (305) 944-4512

Toll Free FL Line: 800-432-0656 - Telex: 51-4489

TAMPA - MIAMI - JACKSONVILLE - HOUSTON
HAMBURG

Seaworthy Engine Systems, Inc.

MARINE ENGINEERS

MAIN STREET
ESSEX, CONNECTICUT
06426

203/767-0937
TWX 7104580271

GEORGE G. SHARP, INC.

MARINE ENGINEERS
NAVAL ARCHITECTS

SYSTEMS ANALYSTS
MARINE SURVEYORS

100 Church Street
New York, N.Y. 10007
(212) 732-2800

Arlington, Virginia 22202
(703) 892-4000
Virginia Beach, Va. 23462
(804) 499-4125

R. A. STEARN INC.

NAVAL ARCHITECTS & MARINE ENGINEERS

253 N. 1st Avenue

Sturgeon Bay, WI 54235

Phone (414) 743-8282 TWX 910-270-1375

Trans-International Marine Services Corp.



TIMSCO

MAINTENANCE MONITORING SYSTEMS
INVENTORY CONTROL SYSTEMS
622 Azalea Road
Mobile, Alabama 36609 205/666-7121

TOWNSEND marine consultants

• TUGS
• TOWBOATS
• BARGES

18 CHURCH ST. GEORGETOWN, CT 06829
TELEPHONE: 203-544-8110
TELEX: WUD 643-354

JAMES WEISBECK

MARINE SURVEYOR
WORLD WIDE SERVICE
RIVERS • LAKES • OCEAN

P.O. Box 52 - South Park, Avenue

Call: (716) 823-6617

Buffalo, New York - 14220

after the 26th
-1909), who is
the architects
ivy.

oosevelt will be
th Nimitz-class
th carrier to be

folk's building was the signing
of the hull by about 1,000 New-
port News employees in the days
before the christening. Bob
Adams, construction superintend-
ent on the Norfolk, said the hull
signing project was part of the

Joseph Lykes To Retire As Head Of Lykes Steamship; James Amoss To Be CEO

Joseph T. Lykes Jr. will retire at year-end as chairman and chief executive officer of Lykes Bros. Steamship Co., Inc., a subsidiary of The LTV Corporation. He will be succeeded as chief executive officer by W. James Amoss, president of the com-

The second paper was co-authored by a group of senior marine engineering students of the State University of New York Maritime College, class of 1982—Brian Emch, Christopher Johnson, and Lautaro Montgomery. The title of the paper was "Coal Fired Commercial Vessels — A Practical Alternative."

In each of the past two years, one section of Maritime College

senior marine engineering students has been engaged in the design of coal-fired merchant vessels and related sub-systems. These projects have included the design of a coal-fired container-ship, and a coal-fired ro/ro vessel, concentrating on power plant refinements and the interface of the vessel and the bunkering facility.

The present paper summarized the results of the work done and

discussed the economics of coal-fired ships. The paper illustrated how coal firing can offer a viable economic alternative to oil firing of ships, and the various possible alternative designs were discussed. The design projects on which the material presented in the paper was based were performed under the direction of Prof. Jose Femenia, who made the introductory comments.

1000 Ton Capacity
Repairs
Conversions
Builders

Barbours
69 years

Write or call for particulars
Shanks, Inc.
N.C.

the New
35
added by J.W. Automarine,
San Diego, Calif.
has offices in White
formed by a three-
towed to shore.
placed the craft
to

**Our customers tell us
the new Tensor[®]
the best lashing tensioner
they have ever used**



"We had both Tensors and toggle gear on the tankers. I could see movement in the toggle lashings, but not the Tensor and chain."

"The Tensor[®] will not slip... We can get the chain tightened with less effort and it won't come loose once it's tight — it's 100% safer to use."

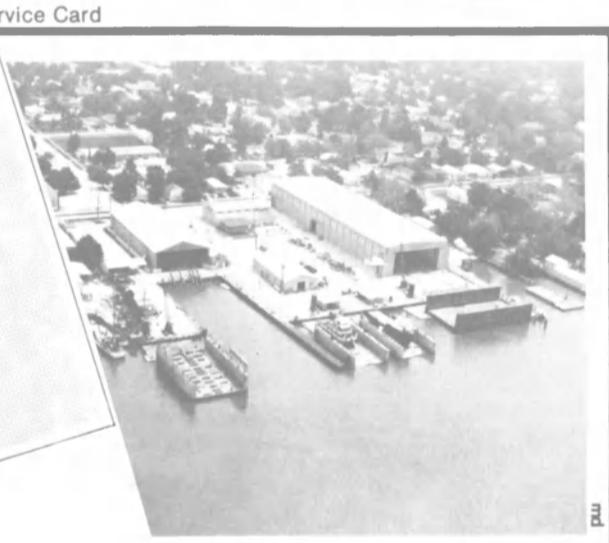
"It's less susceptible to damage and is easier to adjust."
The Tensor can be tightened with a socket wrench without releasing the lashing. It has a marked advantage over the toggle and lever."

AND KEEP IT SECURE, TRY THE TENSOR
VERSEA ROAD PGH., PA 15233 (412)322-2012
TELEX 90-2845

Super Winder

The West Coast Super Winder really moves... in and out, backwards and sideways. With a 1:1 steering ratio it delivers full pushing power in all directions. The Winder's 360 H.P. drive allows for full propeller thrust in any direction. With a noise level under 90 dBA, the Winder falls well under propeller requirements. Well placed and designed controls make operation safe and easy. Powered by a 6:71 GM diesel, the West Coast Winder sorts, stows, busts jackpots and hustles bundles. For further details, write for our brochure.

West Coast Salvage and Contracting
2150 East Kent Ave., Vancouver, B.C. V5P 2T2 (604) 324-1961/Telex 04-553664
Write 287 on Reader Service Card



CONRAD INDUSTRIES, INC. expansion program triples production capacity

Conrad builds fuel, spud, deck, self propelled barges

- Accurate • Swift
- Streamlined • Cost efficient • In business since 1948

CONRAD Industries, Inc.

P. O. Box 790 Morgan City, Louisiana 70381 (504) 384-3060

Shafts
S/S Propellers
P. O. Box 33, Glenhead, N. Y. 11545
516-676-3738

1
w.
ex.
pro
on s
tend
and l
what
the un
while v
were gi
ing aspe
considera
fabricatio
diver prod

67

**M & T Model O-2D
Marine Outboard Diesel
Driven Propulsion Units**



**EQUAL TO
NEW CONDITION
\$18,750**

**Compare Our Units
With Offers By Others**

Equal-to-new-condition. Driven by GM 6-71 diesel—165 HP @ 1800 RPM—2-cycle—6 cylinders. Weight 9300 lbs—48" X 24" propeller. Unit shown with outboard shaft in running position. Distance from deck to bottom of skeg 89". 4 Units immediately available.

THE BOSTON METALS COMPANY

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

**LOUIS-ALLIS M.G. SETS
2.5 KW 120 Volt Single Phase 60 Cycle Output
120 Volt D.C. Input — 1800 RPM
NEW - UNUSED EX - U.S.N.**



2½ KW—115 volts single phase A.C. output. GENERATOR: Type GNA—class 1G—Frame 28A—Form A—1800 RPM—5 KVA—2.5 KW 115 volts AC—60 cycle—50% PF—43.4 amps. MOTOR: Louis Allis—Type GNA—Class E—Frame 25A—Form A—1800 RPM—115 volts DC—32 amps—shunt wound (with attached Ward-Leonard frequency regulator). Some control panels available.

CAN FURNISH WITH 230 VOLT DC INPUT

THE BOSTON METALS COMPANY

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

**SURPLUS
BERGER
FAIRLEADS**

2 Model 620 — for
1½" wire — 20"
sheave.

\$3500

Also 1 for 1¼" wire



THE BOSTON METALS COMPANY

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

**60" X 54" WATERTIGHT
STEEL DOUBLE DOORS**



Used doors — with 10" diameter lites. Each door has 7 dogs for a total of 14.

THE BOSTON METALS COMPANY

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

49¢

Per Pound

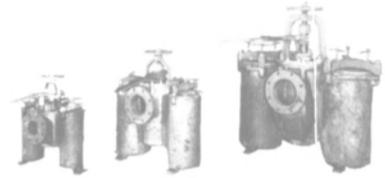
**NEW — UNUSED
2¾" STUD LINK CHAIN
WITH CERTIFICATES**

20 Shots—grade 2—49¢/lb. Each shot weighs 6450 lbs.
Connecting links for above chain — \$575 each

THE BOSTON METALS COMPANY

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

**NEW — UNUSED
DUPLEX STRAINERS**



Available from cancelled sea-going barge construction contract.

- (1) 4" — Bronze strainer baskets for water. Can furnish Type 50 for oil.
- (2) 8" — Steel strainer baskets for sea water — Type 50

Mfg. by Hayward
**BIG DISCOUNT
PRICES**

THE BOSTON METALS COMPANY

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

NEW BALANCED HEAD FAIRLEADS

1¼"
\$2775

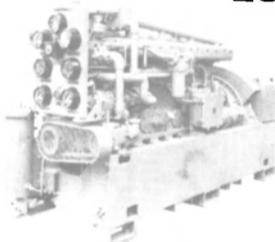


1½"
\$3350

THE BOSTON METALS COMPANY

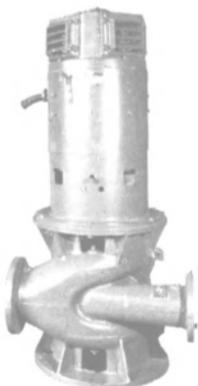
313 E. Baltimore St. Baltimore, Md. 21202
Marine Warehouse (301) 752-1077
TWX: 710-234-1637

LST MACHINERY



100KW GBD-8 DIESEL GENs.

120/240 VDC—417 amps—stab shunt—1200 RPM—Delco generator—Self-excited. ENGINE: Superior GBD-8—8-cyl—5½X7—150 HP—30 volt electric starting. Reconditioned to ABS. Dry wt. 10,000 lbs—DAL 124"—65 11/16" high—42" wide. Hgt necessary to pull piston 68". Fuel consumption 0.620 lbs/hr.

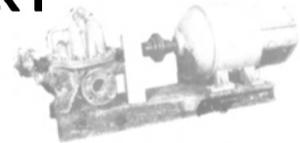


**GARDNER-DENVER
BALLAST PUMP**

Bronze — 1500 GPM — 56' head or 25 bs — 8" suction — 6" discharge. MOTOR: Century 30 HP 230 VDC 110 amps 1750 RPM. 40° T rise — stab. shunt — ballbearing — drip-proof. Controls available.

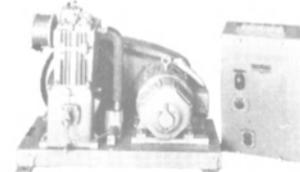
TAILSHAFTS

Diameter: 6 1/8" Length: 21' 2 5/8"



GOULD FIRE & BILGE PUMP

250 GPM & 100 lbs—4" suction—3" discharge—2200 RPM—bronze—manufactured by Gould. Direct connected to 30 HP 230 volt DC Louis-Allis motor.



CLUTCH TIRE AIR COMPRESSOR

Model 320—4 X 2½ X 3"—10/15 CFM—100/150 PSI—700 RPM. MOTOR: 3 HP—230 volts DC—1750 RPM.



**COMBINATION LUBE OIL &
SALT WATER COOLING PUMPS**

Model 3630—mfg by Goulds—1150 RPM. Rotary lube oil pump one end (35 GPM @ 15 PSI—1½" X 1½")—salt water circulating pump other end (35 GPM @ 15 PSI—2" X 1½") G.E. Motor model 5B254A1988—type B—Frame 254—3 HP—230 VDC—11.9 amps—1150 RPM compound—Cont. 40°C temp rise. Ball bearing.

THE BOSTON METALS COMPANY

313 E. Baltimore St.

752-1077

Baltimore, Md. 21202

TWX: 710-234-1637



2-POLE BITTS

10" 14" 20"
IN STOCK

THE BOSTON METALS COMPANY

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

FOR SALE

C4-S-A1 TYPE CARGO SHIP EQUIPMENT FROM BETHLEHEM-BUILT EX-"YORKMAR"

- ROTOR: 400 KW Worthington-Moore Steam Turbine
- TURBINE: Type S-6—6097 RPM—7-Stage—very good condition—with ABS
- REDUCTION GEAR: 14x10—6097/1200 RPM—with ABS

FROM BETHLEHEM-SPARROWS POINT BUILT TANKER 13,750 HP

- L.P. ROTOR: Built by Bethlehem—21-stage—6250 HP at 2100 RPM—weight 27,725 lbs.
- TURBO GENERATOR: 400 KW DE LAVAL-WESTINGHOUSE
TURBINE: De Laval—585# 840°—type CD—5905 RPM—7-stage
GEAR: Type KD—5905/1200 RPM
GENERATOR: Westinghouse—Frame 6-39-11—400-KW
WILL SELL ROTOR—GEAR—STATIONARY BLADING ELECTRIC GENERATOR COMPONENTS SEPARATELY
- FROM WESTINGHOUSE 400 KW TURBO GENERATOR SET.
TURBINE: 10A4462-4—9018 RPM—Instr. Book 1430-C-36—Rotor and stationary blading available
GOVERNOR: Available
GENERATOR: Westinghouse Model 66-39-11—#3547P706
GEAR: Sold

ALL THE ABOVE AVAILABLE AS PARTS
CONDENSER TUBES

New—110, each 26' long

FULLY RECONDITIONED PUMPS READY WITH ABS

- 1 Aux. Vertical Centrifugal Condensate—size 1½CV11—40 GPM—191' head. Motor available: 10 HP—1750 RPM—440/3/60
- Fire and General Service Pump
- Wash Water Pump
- 83/21 HP FORCED DRAFT FAN MOTOR Form 505
- Westinghouse—Frame 505—83/21 HP—440/3/60—99.5/39.5 amps—1766/885 RPM—24-hr. duty—temp. 40°C. In stock. ABS ready.

THE BOSTON METALS COMPANY

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

Commission Destroyer USS Scott Third Ship In A New Class

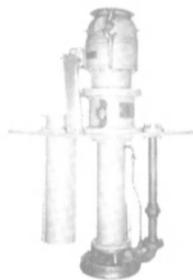


USS Scott, the third ship of the four guided missile destroyers Ingalls Shipbuilding is building for the Navy.

The third ship in a new class of U.S. Navy guided missile destroyers, the most formidable surface ships of their size now joining the Navy, was commissioned recently at Ingalls Shipbuilding Division of Litton Industries, Pascagoula, Miss.

An additional ship of the class, USS Chandler (DDG 996), is nearing completion.

NEW — UNUSED SUMP OR LOW PRESSURE DRAIN PUMPS

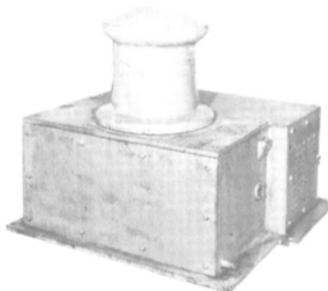


Bronze—40 GPM @ 40PSI. 2" Discharge—single impeller—CW rotation—32" from deck plate to base. Complete with flotation equipment. Totally enclosed 5HP 440/3/60 1725 RPM motor. Repair parts for motor & pump included.

THE BOSTON METALS COMPANY

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

A.C. CAPSTAN 10,000 LBS @ 40 FPM



Totally enclosed 10 HP 440/3/60 1750 RPM motor. Barrell working area: top 11½" diameter—bottom 13" diameter—over a 9" span. Deck space required 36" X 41". Total height 34".

THE BOSTON METALS COMPANY

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

The first destroyer, the USS Kidd (DDG 993), was commissioned in June and is presently assigned to the U.S. Atlantic Fleet, based at Norfolk, Va. The USS Callaghan (DDG 994) was commissioned in August and is based in San Diego, Calif., with the Pacific Fleet.

Based on the proven design of the Ingalls-built Spruance-class destroyers, which began joining the fleet in 1975, the Scott is a multimission ship, able to operate offensively or defend against simultaneous air, surface, and subsurface attacks.

The ship is 563 feet long, with a 55 foot beam, and displaces 9,200 tons. The crew consists of 28 officers and 320 enlisted men.

Ingalls is also building the U.S. Navy's new class of Ticonderoga guided missile cruisers. When deployed in early 1983, the first of these ships will carry the Aegis weapons system, the most sophisticated air defense system in the world. The first ship, Ticonderoga (CG 47), was christened by Mrs. Ronald Regan in May.



SAN FRANCISCO'S NEW PIER 41 terminal at Fisherman's Wharf now houses headquarters offices and operations center for the Red and White Fleet's Bay Cruise Lines. The \$4.5-million facility includes administrative and ticket offices, gift shop, snack bar, catering kitchen, plus new docks, public viewing decks, public rest rooms, and landscaped park areas. Constructed as part of the city's north waterfront revitalization plan, the terminal will be the embarkation point for the seven-vessel Red and White Fleet's Alcatraz and Angel Island tours, and charter service for party and tour groups. The Red and White Fleet serves more than two million passengers annually, including daily Tiburon ferry commute service to the city's Ferry Building terminal.

Nuclear Attack Submarine La Jolla Commissioned At New London

Commissioning ceremonies for the high-speed nuclear-powered attack submarine USS La Jolla (SSN 701) were held recently at the Naval Submarine Base, New London, Conn.

The La Jolla—named after the city in California—is the ninth of the Los Angeles-class attack submarines to have been built and launched by the Electric Boat Division of General Dynamics, Groton, Conn.

Officials from the namesake city and from the State of California attended the ceremony. Mrs. Shirley Haughey Wilson, wife of Congressman Bob Wilson, was the sponsor. Representative Clair W. Burgener was the main speaker.

The keel of the submarine was laid October 16, 1976, and the vessel was launched on August 11, 1979. The 360-foot-long ship displaces 6,900 tons when submerged. She is capable of speeds in excess of 20 knots and carries a crew of 127 officers and men.

BUYERS DIRECTORY

AIR CONDITIONING AND REFRIGERATION—REPAIR & INSTALLATION

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

ANCHORS AND CHAIN

Baldt Incorporated, P.O. Box 350, Chester, PA 19016

ANODES—Cathodic Protection

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

BEARINGS—Rubber, Metallic, Non-Metallic

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

BLASTING—Cleaning—Equipment

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

BOILERS—Tube Cleaning

Combustion Engineering, Inc., Windsor, Connecticut 06095
A.B. Murray Company, Inc., P.O. Box 476, Elizabeth, NJ 07207

BROKERS

Aldenships, 2182 S.E. 17th Street, Fort Lauderdale, FL 33316
B.R.L. Coverage Corporation, 156 Williams Street, New York, NY 10038
Capt. Astad Company, Inc., P.O. Box 53434, New Orleans, La. 70153
Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
Mowbray's Tug and Barge Sales Corp., 21 West St., N.Y., N.Y. 10006

BRONZES—COMMEMORATIVE

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

BUNKERING SERVICE

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

CARGO HANDLING EQUIPMENT

Navire Cargo Gear, 77 River Street, Hoboken, NJ 07030
W.W. Patterson Company, 3 Riversea Road, Pittsburgh, PA 15233

CARGO TRANSFER & ACCESS EQUIPMENT

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

CHAINS

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

CHOCKING SYSTEMS

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

CONTAINERS—Cargo Container Handling

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

CONTROL SYSTEMS—Monitoring

Arnesen Marine Systems, Inc., One Battery Plaza, New York, NY 10004
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
Megastystems, Inc., 1075 N.W. 58th Street, Boca Raton, FL 33431
National Marine Service, Inc., 1750 Brentwood Blvd., St. Louis, MO 63144
Pan American Systems Corporation, P.O. Drawer 400, Belle Chasse, LA 70037
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062

COUPLINGS

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

CRANES—HOISTS—DERRICKS—WHIRLEYS

American Hoist & Derrick Company (AMHoist), St. Paul, MN 55107
Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081
M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07087
National Supply Company, 1455 West Loop South, Houston, TX 77027
J. D. Neuhaus, Witten-Heven, Hebezeuge, D 5810 Witten-Heven, West Germany
Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501

CREDIT REPORTING

Steamship Vendors, P.O. Box 2850, Long Beach, CA 90801

DECK MACHINERY—Cargo Handling Equipment

Marine Technical Associates, 195 Patterson Avenue, Little Falls, NJ 07424
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
Haynes Corporation, P.O. Box 179, Jackson, MI 49204
Twin Disc, Inc., 1328 Racine Street, Racine, WI 53403

ELECTRICAL EQUIPMENT

Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Federal Pacific Electric Company, P.O. Box 1800, Somerville, NJ 08876
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

EMULSIFICATION SYSTEMS

Cleanodan A/S, N. American Agents, American United Marine Corp., 5 Broadway, Route 1, Saugus, MA 01906
Hoffert Manufacturing Company, Inc., 1700 East Church Street, Jacksonville, FL 32202

EQUIPMENT—Marine

ATCO Marine Corp., 603 Dean Street, Brooklyn, NY 11238
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014
Conhagen USMP Company, Inc., 4475 South Clinton Ave., South Plainfield, NJ 07080
Consafe Inc., P.O. Box 40339, Houston, TX 77040
Duraline, 75 Hoffman Lane, Central Islip, NY 11722
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550
J. H. Menge & Company, Inc., P. O. Box 23602, New Orleans, La.
John P. Nissen, Jr. Company, Glenside, PA 19038
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080
Stal Laval Inc., 525 Executive Blvd., Elmsford, NY 10523
Sudaimport, 5 Kalyaevskaya, Moscow K-6, USSR
Unitor Ships Service A S, Mastemyr, 1410 Kolbotn, Norway

Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186
Xorbox, Division of Greene & Kellogg, Inc., 290 Creekside Dr., Tonawanda, NY 14150
Zesco, Inc., 3694 Westchase Drive, Houston, TX 77042

EVAPORATORS

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

EXPANDED METALS—METALS

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

FANS—VENTILATORS—BLOWERS—HEATEXCHANGERS

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

FENDERING SYSTEMS—Dock & Vessel

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

FINANCING—Leasing

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

FUEL OIL ADDITIVES—Analysis & Combustion Testing

Rofite Products Inc., 300 Broad Street, Stamford, CT 06901
XRG International, Inc., 4125 S.W. Martin Hwy., Stuart, FL 33494

FURNITURE

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

GALLEY EQUIPMENT

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

GANGWAYS

Rampmaster Inc., 1226 N.W. 23rd Ave., Fort Lauderdale, Fla. 33311
W & A Engineers, Inc., 4040 Veterans Highway, Metairie, LA 70002

HATCH & DECK COVERS—Chain Pipe

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

HULL CLEANING

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

HYDRAULICS

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

INERT GAS—Generators—Systems

ATCO Marine Corporation, 603 Dean St., Brooklyn, NY 11238
Camar Corporation, P.O. Box 460, Worcester, MA 01613
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039
Peabody Holmes Ltd., 17-27 Garratt Lane, London SW 18 4BY

INSULATION—Cloth, Fiberglass

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

INSURANCE

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

JOINER—Watertight Doors—Paneling

Masonite Commercial Division, Dover, OH 44622
Walz & Krenzer, Inc., 400 Trabold Road, Rochester, NY 14624

KEEL COOLERS

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

LIFEBOATS & DAVITS

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

LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights

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

MACHINE TOOLS

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

MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING

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

MOORING SYSTEMS

Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

NAME PLATES—BRONZE—ALUMINUM

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

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS

Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Highway (Suite 1300), Arlington, VA 22202
Agemar, Ave. 17 No. 108-129, P.O. Box 1465, Maracaibo, Venezuela
All Points Associates, Inc., RD #1, Box 3309, Monroeville, OH 44847
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015
J.L. Bludworth, P.O. Box 2441, Corpus Christi, TX 78403
Jacksonville, Florida 32211
Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130

C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd.,
CTS & Associates, 11320 S.W. 108 Court, Miami, Fla. 33176
CADCOM, 107 Ridgely Ave., Annapolis, MD 21401
Childs Engineering Corp., Box 333, Medfield, Mass. 02052
John P. Colletti & Associates, P.O. Box 13378, Pittsburgh, PA 15243
Columbia-Sentinel Engineers Western, Inc., P.O. Box 21542,
Seattle, WA 98111

Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026

Crane Consultants Inc., 15301 1st Ave., So. Seattle, Washington 98148

C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048

Norman N. DeJong & Associates, Inc., 1734 Emerson St., Jacksonville, Fla. 32207

Design Associates Inc., 14360 Chef Menteur Highway, New Orleans, LA 70129

Designers & Planners, Inc., 2341 Jefferson Davis Hwy., Suite 1100, Century Bldg., Arlington, VA 22202

Donhauser Marine, Inc., 11511 Katy Freeway, Houston, TX 77079

Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034

Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050

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

Giannotti & Associates, Inc., 703 Giddings Ave., Suite U-3, Annapolis, MD 21401

Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006

John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110

The Glisten Associates, Inc., 610 Colman Bldg., 811 First Ave., Seattle, WA 98104

Phillip Gresser Associates, Ltd., 3250 South Ocean Blvd., Palm Beach, FL 33480

Morris Guralnick Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107

J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048

Hoffman Maritime Consultants Inc., P.O. Box 186, Glen Head, NY 11545

Hydranautics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810

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

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

Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225

George E. Meese, 194 Acton Rd., Annapolis, Md. 21403

Metritope, Inc., 33 Bradford Street, Concord, MA 01742

NKF Engineering Assoc., Inc., 8150 Leesburg Pike, Vienna, VA 22202

Nelson & Associates, Inc., 1405 N.W. 167th Street, Miami, FL 33169

Nickum & Spaulding Associates, Inc., 911 Western Ave., Seattle, WA 98104

Captain Conrad P. Nilsen, 66 Beverly Road, Bloomfield, NJ 07003

Norgaard and Clark, 114 Sansome St., San Francisco, CA 94104

Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114

Offshore Power Systems, 8000 Arlington Expressway, Jacksonville, FL 32211

PRC Guralnick, 5252 Balboa Ave., San Diego, CA 92117

Pacific Industries Inc., 1440 Canal Street, Suite 1915, New Orleans, LA 70112

Peorlson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33156

Pilotage Consultants, Inc., P.O. Box 3, Atlantic Highlands, NJ 07716

M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013 and 657 Mission St., San Francisco, Calif.

Sargent & Herkes, Inc., 611 Gravier St., New Orleans, La. 70130

Schmahd and Schmahd, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316

Seacor Systems Engineering Associates, Corp., P.O. Box 2030, 19 Cherry Hill Industrial Park, Perina Blvd., Cherry Hill, NJ 08003

Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426

George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007

T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2

R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235

Robert L. Stevens Associates, Inc., 654 Beacon Street, Boston, MA 02215

Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963

Timco, 622 Azalea Road, Mobile, AL 36609

Townsend Marine Consultants, 18 Church Street, Georgetown, CT 06829

Wadam Wartsila Helsinki Shipyard, P.O. Box 132, SF-00151 Helsinki 15, Finland

Wesley D. Wheeler Assoc., Ltd., 104 E. 40th St., Suite 206, New York, NY 10016

James Weisbeck, 240 O'Kell Street, Buffalo, NY 14220

Thomas B. Wilson Associates, 920 North Avalon Blvd., Wilmington, CA 90744

Wind Ship Development Corporation, 690 Main Street, Norwell, MA 02061

Wink Incorporated, 8020 Mayo Blvd., New Orleans, LA 70126

XPLO Corporation, 229 Fifth Street, Gretna, LA 70053

NAVIGATION & COMMUNICATIONS EQUIPMENT

AAT Communications Corporation, 1854 Hylan Blvd., New York, NY 10305

American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526

Apelco Marine Electronics, Division of Raytheon, 676 Island Pond Rd., Manchester, NH 03103

Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024

DEBEG Marine, Inc., 10 Manor Parkway, Salem, NH 03079

Electro-Nav Inc., 840 Bond Street, Elizabeth, NJ 07201

Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080

Harris Communications (RF Communications), 1680 University Avenue, Rochester, NY 14610

Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913

Hose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631

ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611

Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780

Iotron Corp., 5 Alfred Circle, Bedford, MA 01730

Kongsberg North America Inc., 135 Fort Lee Road, Leonia, NJ 07605

Kongsberg Vapenfabrikk, Norcontrol Division, P.O. Box 145, Horten 3191, Norway

Krupp Atlas-Elektronik, 241 Erie Street, Jersey City,

Joseph Lykes To Retire As Head Of Lykes Steamship; James Amoss To Be CEO

Joseph T. Lykes Jr. will retire at year-end as chairman and chief executive officer of Lykes Bros. Steamship Co., Inc., a subsidiary of The LTV Corporation. He will be succeeded as chief executive officer by W. James Amoss Jr., president of the company.

Mr. Lykes has served the New Orleans-based company for 35 years, rising through the ranks to president in 1962 and chairman in 1967. In 1968, he directed the acquisition of Youngstown Sheet and Tube Company which was merged into the newly formed Lykes Corporation. Mr. Lykes served as chairman of Lykes Corporation until its merger with LTV in 1978.

Mr. Amoss began his career with Lykes in 1947 after World War II service with the Navy. In 1950, he was recalled to duty in the Korean War. Returning to Lykes in 1952, he served in various executive posts in Europe from 1953 to 1963. Posted to company headquarters in New Orleans in 1963, he was named vice president-traffic and later executive vice president. In 1973, he was elected president and chief operating officer of the company.

Mr. Lykes is the grandson of the late Dr. Howell Tyson Lykes, who with his seven sons founded the Lykes shipping and agricultural enterprises in Tampa, Fla., in 1900. Headquartered today in New Orleans, the Lykes 46-vessel fleet is the largest U.S.-flag ocean carrier.

The second paper was co-authored by a group of senior marine engineering students of the State University of New York Maritime College, class of 1982—Brian Emch, Christopher Johnson, and Lautaro Montgomery. The title of the paper was "Coal Fired Commercial Vessels — A Practical Alternative."

In each of the past two years, one section of Maritime College

senior marine engineering students has been engaged in the design of coal-fired merchant vessels and related sub-systems. These projects have included the design of a coal-fired container-ship, and a coal-fired ro/ro vessel, concentrating on power plant refinements and the interface of the vessel and the bunkering facility.

The present paper summarized the results of the work done and

discussed the economics of coal-fired ships. The paper illustrated how coal firing can offer a viable economic alternative to oil firing of ships, and the various possible alternative designs were discussed. The design projects on which the material presented in the paper was based were performed under the direction of Prof. Jose Femenia, who made the introductory comments.

Our customers tell us the new Tensor[®] is the best lashing tensioner they have ever used

... "For binding loads on my trailer, the Tensor will hold tight and not come loose like other binders do. It's one of the best binders I've used in a long time — regardless of the type of load."

... "The tensioners were quickly and easily hung, with a minimum of physical exertion. Using the air-driven impact wrench & socket, they were quickly, and positively, tightened.

For the nine days they were in position, at only one point was it necessary to tighten just one lashing and this was accomplished with ease, by merely "socking it up" with the impact tool."



... "We had both Tensors and toggle gear on the tankers. I could see movement in the toggle lashings, but not the Tensor and chain."

... "The Tensor[®] will not slip... We can get the chain tightened with less effort and it won't come loose once it's tight — it's 100% safer to use."

... "It's less susceptible to damage and is easier to adjust.

The Tensor can be tightened with a socket wrench without releasing the lashing. It has a marked advantage over the toggle and lever."

WHEN YOU WANT TO SECURE A LOAD AND KEEP IT SECURE, TRY THE TENSOR



W.W. PATTERSON CO. 3 RIVERSEA ROAD PGH., PA 15233 (412)322-2012
TELEX 90-2845

Write 538 on Reader Service Card

Student Papers Meeting Held By SNAME New England Section

The New England section of The Society of Naval Architects and Marine Engineers held its annual student papers meeting recently which was attended by over 60 members and student members.

The first paper, entitled "Influence of Design and Fabrication on Underwater Ship Maintenance and Repair," was authored by Lt. Comdr. R.S. McCord, USN. Commander McCord is currently assigned to the Philadelphia Naval Shipyard, and he graduated from M.I.T. in June 1981. The objective of his paper was to summarize many of the existing maintenance and repair procedures that divers perform on ships. This summary was intended to provide ship designers and builders with an input as to what can and cannot be done to the underwater portion of ships while waterborne. Suggestions were given in the paper regarding aspects which if taken into consideration in the design and fabrication of ships can increase diver productivity.

C. B. DARCY MARINE SALES REPRESENTING



Rubber Sleeve or Flange Bearings
Stuffing Boxes and Keel Coolers
Heavy Duty Fendering

WESTERN BRANCH METALS

Armco Stainless Shafting Systems
Machining — Propeller Nuts

ENVIROVAC INC.

Custom and Pre-engineered
Vacuum Sewage Collection Systems
Uses 3 pint flush toilet

DAMAN INDUSTRIES

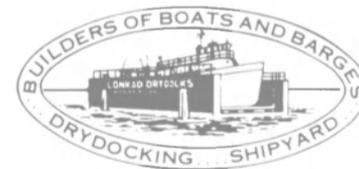
Ceramaloy Coatings
Propeller Shaft Liners
Dredge Pump Sleeves and Shafts

KAHLENBERG BROS.

Air Horns — S/S Propellers

P. O. Box 33, Glenhead, N. Y. 11545
516-676-3738

Write 385 on Reader Service Card



CONRAD Industries, Inc.

CONRAD INDUSTRIES, INC. expansion program triples production capacity

Conrad builds fuel, spud, deck, self propelled barges

- Accurate • Swift
- Streamlined • Cost efficient • In business since 1948

P. O. Box 790 Morgan City, Louisiana 70381 (504) 384-3060

Write 403 on Reader Service Card

Coast Guard Proposes Maneuvering Standards For U.S.-Flag Vessels

The Coast Guard has issued an advance notice of proposed rule-making regarding maneuvering performance standards for new U.S.-flag vessels — oceangoing tankers and product carriers, passenger ships, cargo ships,

miscellaneous vessels, and Great Lakes bulk carriers.

With regard to tankers, the regulatory action would implement portions of the 1978 Port and Tanker Safety Act. Accompanying the standards will be standardized trial maneuvers designed to verify the vessel's performance, and to provide the information on maneuvering already required to be posted in the pilothouse.

The proposed standards would supplement the existing operation-oriented requirements for the display of maneuvering information in the pilothouse.

The Coast Guard anticipates basing the standards on the performance of existing vessels, and would provide shipowners, designers, builders, pilots, masters, port authorities, and law enforcement officials with a method to

assess a vessel's inherent maneuverability.

The Coast Guard stated that the use of tugs has been investigated in joint Coast Guard, Maritime Administration, and industry programs. Tugs are not considered a substitute for inherent maneuvering capabilities, although tugs show promise for propulsion and rudder system assistance in emergency situations at low speeds.

The Coast Guard listed 14 specific points it considered important in the development of the regulations, including the feasibility of tug utilization. Comments on the standards must be submitted by January 12, 1982, to Commandant (G-CMC/44) (CGD 80-136), U.S. Coast Guard, Washington, D.C. 20593. The proposals were published in the September 14 issue of the Federal Register.

MSC Accepts Third Sea-Land Containership

The Military Sealift Command's emergency cargo lift force was strengthened when the Navy recently accepted from Sea-Land Industries the third of six of the fastest and largest containerships in the U.S.-flag merchant fleet.

The three 33-knot SL-7 containerships are part of a six-ship contract that includes spare parts, the lease of 4,000 containers, 800 container chassis, and the option to purchase two additional SL-7s. Sea-Land is delivering three ships on the West Coast and three on the East Coast this fiscal year. The first two SL-7s were accepted by the Navy in mid-October.

The ships will be placed temporarily in the Maritime Administration's Ready Reserve Force, part of the National Defense Reserve Fleet. When activated, they will be under the operational control of the Navy's Military Sealift Command.

Southwest Marine Acquires 1,100-Foot Equipped Pier

Southwest Marine, Inc., San Diego, Calif., recently announced the acquisition of a 1,100-foot pier. The pier acquisition complements Southwest Marine's full service facility including a 22,000-ton drydock and complete shop capabilities.

The pier has total utility provisions including electricity for ship and welding. It is also equipped with high pressure steam lines as well as oxygen, acetylene, compressed air, natural gas, fresh and seawater, and a 65-ton gantry crane.

For more information, Write 24 on Reader Service Card

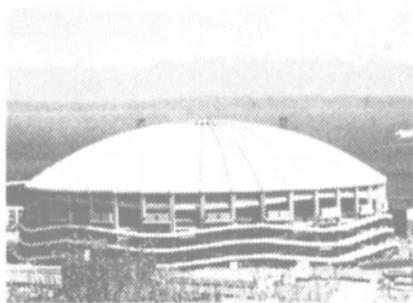
New Career Opportunities In Seattle, Washington

Why Washington?

Washington State has over seven national forests, two major mountain ranges and a seemingly endless assortment of lakes, rivers and beaches. Our state is a prime area for uncrowded skiing, hiking, fishing and other outdoor activities. The mild climate makes many of these activities practical on a year round basis.

Why Seattle?

Seattle offers a blend of business, culture and sports activities. One of America's "most livable cities," Seattle is located between the Olympic and Cascade Mountains. It offers water sports, over 400 parks, three large lakes, theaters, restaurants, excellent schools, "old fashioned" real estate values and eight professional sports teams.



Why Lockheed?

Lockheed Shipbuilding is small enough to provide a working environment of informality, personal contact and supportive co-workers. The accent lies on responsive management which prides itself upon respecting the value and importance of each employee. Lockheed holds a contract from the U.S. Navy to build the first of a new class of

amphibious assault ships. We anticipate that contracts for additional ships of this class will assure a high level of employment by the company through the 1980's. Lockheed is your opportunity to work with a true working team where your skills are recognized and the work is challenging.

- General Machinery Superintendent**
- Systems Engineers**
- Information Systems Analyst**
- Naval Architects**
- I.L.S. Personnel**
- Quality Assurance Engineers**
- Ships Managers**
- General Superintendent Piping**
- Engineers and Designers**
 - Systems Piping
 - Structural
 - Electrical
 - Weight Composite Mechanical
- Draftspersons**
 - Electrical
 - Mechanical
 - Structural

The above positions require marine experience.



Excellent fringe benefits include company paid medical, dental, life insurance and retirement plans, holiday and vacation benefits and savings plan.

For immediate consideration, send your resume or letter with salary history to: **Personnel Department, 2929 16th Ave. SW, Seattle, WA 98134. (206) 292-5604.**

An equal opportunity employer m f h

 **Lockheed**
Shipbuilding and Construction Company
 "Superior Ships by Superior Craftsmen"

CLASSIFIED ADVERTISING

HOW TO PLACE CLASSIFIED ADVERTISING: ...Mail clearly written or typed copy to: MARITIME REPORTER, 107 East 31st Street, New York, N.Y. 10016. Include any photos, drawings or logos if required. Specify size of ad and number of insertions ...Classified Advertising— Per Issue Rate: Classified advertising is sold at a rate of \$45 per column inch. ...MARITIME REPORTER'S classified section carries more advertising and sells more products than any other publication in the marine industry. MARITIME REPORTER is published on the 1st and the 15th of each month. Closing date for classified advertising is 20 days prior to the date of the issue. For further details contact Cathy Allgauer at (212) 689-3266. Send all advertising material to MARITIME REPORTER and Engineering News, 107 East 31st St., New York, N.Y. 10016



ExecuSearch
Professional Recruiters
Specializing in
MARINE - SHIPPING - TRANSPORTATION

We are specialists who know YOUR business

ExecuSearch
Division of Cerri G. Inc.
140 Bay St. / Staten Island NY 10301 • 212-447-5558

For information contact:
Michael R. Keough
Vice-President,
General Manager



WILSON
is
STEAMSHIP

We have served the Shipping Industry exclusively for over 40 years and maintain an active file of people experienced in all of its phases — including Port Engineers, Ship Construction Supervisors, M&R, Sales Engineers (chemicals, coatings, etc.) — to relocate anywhere. Salaries and fees negotiable; inquiries without obligation and in confidence.

WILSON employment agencies
Specializing exclusively to the Maritime Industry for over 40 years

1121 Walker, Suite 220
Houston, Texas 77002
(713) 224-2200

150 Broadway, Suite 503
New York, New York 10038
(212) 732-2921



SHIPBUILDING
VESSEL
TRANSPORTATION
MARINE OPERATIONS

Regional • National • International

Marine Personnel Consultants
Bianco International, Inc.
P.O. Box 544
100 Mariner's Blvd.
Mandeville, Louisiana 70448
504/ 626-4424
New Orleans Number 504/ 524-8607



Globe
PERSONNEL CONSULTANTS
RECRUITERS OF PROFESSIONAL PERSONNEL FOR INDUSTRY

**EMPLOYMENT SPECIALISTS
IN THE MARINE INDUSTRY**

Job opportunities in marine professions. Naval architects, marine engineers, shore-based marine administration, mechanical, structural, and other disciplines in offshore, marine and shipbuilding industries.

2727 KIRBY, #517 HOUSTON, TEX. 77098
713 / 526-3748

Sales rep/Agency required in the New Orleans and Houston areas for new, very competitive shipyard, located in Freeport, Bahamas; 20 acres with 30 ft. water depth. New building and repair to 250 ft. x 1500 ton; ABS standards and class. Includes supply boats, crew boats, patrol boats, tugs, barges, drydocks, rigs, etc. Must have successful record with major shipowners. Substantial commissions and benefits.

Caribbean International Enterprises Inc.
420 East 80 St., New York, N.Y. 10021
212 628 7741

Personalized Consulting Service

Imaginative sales marketing PR professional with marine engineering license and experience can help you to achieve profitability goals.

Background includes naval architecture coatings, and specialty chemicals.

Box 717
MARITIME REPORTER/ENGINEERING NEWS
107 East 31st Street
New York, NY 10016

Marine Air Conditioning Designer

Minimum 5 years design experience on marine heating, ventilation and air conditioning required for Canadian Patrol Frigate Program. Ideally, candidates should be capable of carrying out complete designs with minimum supervision for warship and commercial vessels.

Excellent opportunities to grow with a progressive organization located immediately across the river from Montreal.

We offer our employees an excellent benefit program including a health and dental plan, life assurance scheme, pension plan, education assistance, etc.

We will pay for your removal expenses, provide assistance in finding the right accommodation and provide travel allowance for yourself and your family.

All applications will be treated in the strictest confidence.

Complete resumes including home and/or office telephone numbers should be sent in the first instance to:

Mr. J. Di Maurizio
Personnel Manager
SCAN MARINE INC.,
P.O. Box 80
Longueuil, Quebec
J4K 5C6



SCAN MARINE INC. Canadian Patrol Frigate Program

MARINE DESIGN PROJECT ENGINEERS

Bender Shipbuilding and Repair Co., Inc. — New Ship Construction Design Engineering Department has immediate openings for Project Engineers.

Continued growth has created these openings for Technical Personnel. These are permanent jobs of responsibility with excellent opportunities for advancement.

The openings are as follows:

Marine Design Project Engineer — Supply Vessels.
Familiarity with ABS and USCG hull, machinery and piping.

Marine Design Project Engineer — Aluminum vessels.
Familiarity with marine aluminum structural design, machinery and piping as related to aluminum hulls.

Qualifications:

Engineering Degree plus one to three years experience or equivalent.

Competitive salaries and excellent employee fringe benefits.

For confidential consideration, please contact:

BENDER SHIPBUILDING & REPAIR CO., INC.
Post Office Box 42
Mobile, Alabama 36601
Attn.: Chief Engineer

Equal Opportunity Employer M/F

Career

Associates, inc.

Maritime Personnel Consultants

HYDRAULICS

**SERVICE • REPAIR • PARTS
CONSULTING • DESIGN**

**CUNNINGHAM MARINE
HYDRAULICS CO., INC.**

201 Harrison St. • Hoboken, N.J. 07030
(201) 792-0500 (212) 267-0328

2030 E. Adams St. • Jacksonville, FL 32202
(904) 354-0840

TWX 710-730-5224 CMH Hoboken, NJ



95' ALUMINUM CREWBOAT. Triple screw 22' beam, USCG certified, 69 pass., 20 long tons cargo, 3 ea., 12V71TI main, 2 ea. 371 gen., built 1973. First class condition, available Gulf of Mexico. \$500,000.00. Contact **Sally Hurlbutt (504) 361-5551.**

SEALED BID SALE

BY

**INGALLS SHIPBUILDING,
DIV. LITTON SYSTEMS**

AS IS/WHERE IS

Used Steam Generator (Trane-Murray),
Self-contained

Mounted on steel barge, 90' x 35' 9"

Year manufactured 1975 — Overhauled
1978

Features: 90,000 LB/HR — 650 PSIG
ITE Elec. Control Panel, 480V/
3 PH/400A

Two Transfer Pumps, 110 GP
Deaerator, Max. Pressure 250
PSI @ 300°

**Bid closing date January 3, 1982; for
bid package contact Wanda Cirlot**

CROUSE HINDS

**1000 WATT
FLOODLIGHTS**

IN STOCK

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.



THE BOSTON METALS COMPANY

L-V Marine Consultants Can Find The Key Personnel You Need!

Through our coast-to-coast contacts within the marine industry, we will find the specialists you are searching for. We work with senior and middle management, sales, estimators, engineers, dockmasters, planners, ship's superintendents etc.

Our fees are competitive and we are only paid when we are successful. For more information, call Larry Victor at (713) 461-8672.

L-V MARINE CONSULTANTS

12633 MI MORIAL DRIVE, SUITE #40 HOUSTON, TEXAS 77024
(713) 461-8672

NAVAL ARCHITECT GENERAL ARRANGEMENTS AND SHIP'S STABILITY

(\$28,245.00 - \$36,723.00 P.A.)

THESE POSITIONS ARE IN THE GENERAL ARRANGEMENTS AND SCIENTIFIC AREAS OF A MAJOR NAVAL SHIPYARD WHICH IS ENGAGED IN THE REPAIR AND ALTERATION OF ALL TYPES OF NON-NUCLEAR NAVAL SURFACE SHIPS, INCLUDING AIRCRAFT CARRIERS. FUNCTIONS OF THESE POSITIONS INCLUDE TECHNICAL DIRECTION OF ENGINEERS AND TECHNICIANS ENGAGED IN SHIP GENERAL ARRANGEMENTS WORK AND ASSOCIATED SHIPCHECKS (HABITABILITY, COMMISSARY, LAUNDRY, STORE-ROOMS, OFFICES, MEDICAL SPACES, COMPARTMENT AND ACCESS PLANS) AND DEVELOPMENT AND REVIEW OF SHIP'S STABILITY CHARACTERISTICS (WEIGHT AND MOMENT) AND HULL AND

Meets Military Spec. Mil-A-18001 (ships)

Anodes • Bars • Circles • Rings • Rods IN STOCK

SMITH and McCROCKEN, Inc.

153 Franklin St. Dept. MR • Call (212) 925-2170
New York, N.Y. 10013 • FOR FAST DELIVERY

FOR SALE

SURPLUS DECK TANKS

14,335 Gal., Horizontal with saddle supports

10' OD X 24' T-T X 27'6" OA

1/4" steel clad 20% w/304SS

16- 1" OD X 23' 304SS Coils in bottom.

Design Pressure:

Tank 30 PSI @ 150°F

Coils 200 PSI @ 150°F

Four available, Formerly used on SS Marine Dow Chem
Available for inspection:

Call or write:

LAMAR E. PETERSON
DOW CHEMICAL, USA
MATERIAL RECOVERY BLDG. B3611
TEXAS DIVISION
FREEPORT, TX. 77541
TEL. 713/238-3127

NEW U.S. MARAD-TYPE AXIAL FLOW FANS



(3) 10,500 CFM Model AF-100, "Baldor" 5 HP motor —
440/3/60 — 40° — 1750 RPM — 7 amps.

(1) Same as above, but 2-speed 1750/750 RPM —
Frame 184TCZ

(2) 12,880 CFM — Size 15AF — Baldor Motor — 7.5/
1.9 HP — 440/3/60 10/3.5 amps — 1750/880 RPM —
40°C — Frame 215TCZ

20,000 CFM — 1.9" SP — Size 200AF — 10 HP —
440/3/60 — 1750/880 RPM

(2) 40,665 CFM — size 43AF — 60 HP Baldor Motor —
440/3/60 — 1760 RPM — 75 amps — 50° rise — Frame
364TZ Ins. F

(1) 6000 CFM — AF40 — Baldor Motor — 3 HP —
440/3/60 — 1750 RPM — Ins. F — 40°C — Frame
182TCZ

(3) 2000 CFM — size 20AF — .75 HP — 440/3/60 —
3450 RPM 1.3 amps — Ins. F — 40°C — Frame 560Z.

THE BOSTON METALS COMPANY

MARINE RECRUITING DIVISION

Professional Staffing, Inc.

Professional and Confidential
Recruitment and Placement
of Marine Personnel

Contact
Lenny Morgan, Marine Recruiter
1250 POYDRAS STREET
SUITE 820
NEW ORLEANS, LA 70112
PH. (504) 524-6095

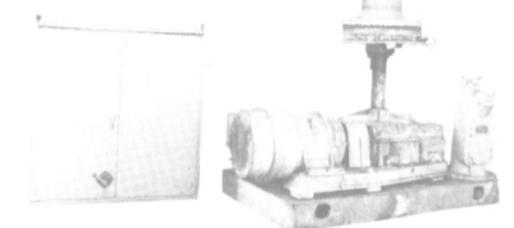
Managers
Naval Architects
Proj. Managers
Engineers
Superintendents
Estimators, Planners
and other
Shore-based
Professionals
in Marine
Shipbuilding
and Offshore
Industries



SHIPBUILDING—SHIP REPAIR OPPORTUNITIES!

MATERIALS MANAGER
QA MANAGER
STEEL SUPERINTENDENT
GENERAL YARD SUPERINTENDENT (REPAIR YARD)
SHIP SUPERINTENDENT (NEW CONSTRUCTION, REPAIR)
NIGHT SUPERINTENDENT
MACHINERY SUPERINTENDENT
PIPING SUPERINTENDENT
PRODUCTION SUPERVISORS (VARIED)
SENIOR ESTIMATORS (NEW CONSTRUCTION, REPAIR)
NAVAL ARCHITECTS (OFFSHORE RIG CONSTRUCTION)
CHIEF ENGINEER

We specialize in recruiting key personnel for the ship-
building/ship repair industry. All fees and expenses are
company paid. The positions listed above, and many
others, are now open. Call Mr. M. A. Weeks at (205) 661-
2294 as soon as possible, or send resume immediately:



8500 lbs @ 90 FPM or 4250 lbs @ 180 FPM. Barrel
size 15". Below-deck mounted motor — 31 HP —
440/3/60 — 42/38 amps — 820/1640 RPM. Squirrel
cage — totally enclosed — watertight. Half hour duty
65°C. temp. rise. Base OAL 6'4". With magnetic
brake, 2-speed control and master switch.

THE BOSTON METALS COMPANY

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

FAIRLEADS

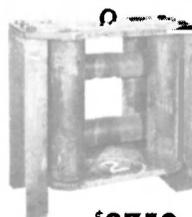


\$2950

NEW — UNUSED 4-ROLLER TYPE UNIVERSAL SHIPBOARD FAIRLEADS

Opening between vertical rollers 10" — between hori-
zontal rollers 4". Roller size 7 1/2" — pin size 2 1/2".
Rollers 24" long. Extended legs for welding to deck.
All are 18 1/4" x 33 1/2" at top angled to 44" x 46 1/2"
at bottom. 7/8" Steel. Rollers have grease fittings. Plans
available on request. SUITABLE FOR VESSELS UP TO
200,000 TONS. WIRE SIZE UP TO 5" CIRCUMFERENCE
OR 95 TONS, NORMAL BREAKING STRENGTH. MAX-
IMUM LEAD 80°.

6 ROLLER TYPE MOORING FAIRLEADS WITH 12" CLEAR OPENING



\$2750

4 Vertical rollers — 5 1/2" diam-
eter—2 horizontal rollers—5 1/2"
diameter, split to enable work-
ing from either end of fair-
lead. Steel sideframe 9/16"—top
& bottom 1". Handles 1 1/2"
wire easily—up to maximum
lead 80°.

THE BOSTON METALS COMPANY

NEW & REBUILT EQUIPMENT FOR IMMEDIATE DELIVERY

ANCHORS

Three (3) new Baldt, 44000 lbs., snug stowing anchors, with high holding power. These units are new and are ABS certified for use with off-shore drilling rigs.

RECONDITIONED TURBINE ROTORS

We have in stock the largest quantity of turbine rotors on the East Coast:

HP rotors:

8500 HP, Westinghouse
15000 HP, Bethlehem Steel
19000 HP, G.E.
24000 HP, G.E.
31500 HP, G.E.

LP rotors:

19000 HP, G.E.
22000 HP, Delaval

For auxiliary turbo generators:

600 KW, Westinghouse
600 KW, G.E. DRV 618
1000 KW, G.E. cruiser-type
525 KW, T-2-GE DORV325

Westinghouse 5400 KW T-2 main turbine rotor

G.E. 5400 KW main turbine rotor

Plus many more. All of these units are reconditioned with ABS certificate ready for immediate use.

PUMPS

750 GPM at 150 PSI, all bronze, 440 V, manufactured by Worthington — Four (4) Gould circulating pumps, 1000 GPM at 140 ft head, complete with 50 HP, 440 V motor, used, in excellent condition, \$1,295 each.

DC MOTORS AND DIESEL ELECTRIC DRIVES

Six (6) 775 KW, 950 RPM, 230 V DC marine type motors — General Electric

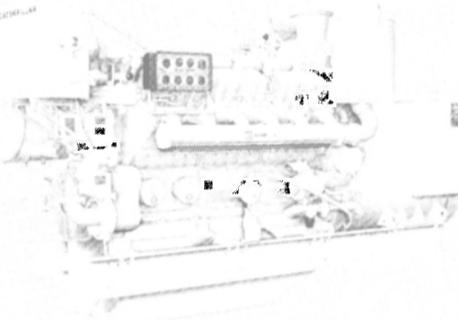
Six (6) 960 HP, 850 RPM, 250 V, 3100 amps, DC G.E. propulsion motors, type MPC

GARDNER DENVER AIR COMPRESSORS

Four (4) Gardner Denver air compressors, water cooled, 140 CFM at 125 PSI with 40 HP 440 Volt motor. In excellent condition. \$3,500 each.

NEW CATERPILLAR 600 KW DIESEL GENERATOR SET

D398



New 600 KW Caterpillar Model D398 diesel generator set, 440 Volt, 3 Phase, 60 Cycle, KATO generator, marine type, heat exchanger cooled, with ABS certificate. This unit has a power take-off for a bow thruster on the opposite end of the generator which can be removed if required. We offer this unit at considerable reduction from new price.

AIR CONDITIONING AND REFRIGERATION UNITS

Two (2) new complete air conditioning plants manufactured by Carrier, Type 5MH86, marine type, 60-75 tons, complete with 75 HP, 440 V motors, controllers, condensers, receivers, all controls, switchboard. In-frame for easy installation. We offer these units at far less than present day price.

Two (2) new refrigeration units, Carrier 5MH40, with 15 HP, 440 V AC motor, controls and other accessories.

T-2 EQUIPMENT

We have a large stock of T-2 equipment including main generator turbines, main generator revolving field, diaphragms, lube oil coolers, pumps and other accessories.

NEW DELAVAL CONDENSER

2185 sq. ft. condenser with 3/4", 90/10 cupro nickel tube, tube sheets and heads.

CUPRO NICKEL TUBES

6,000 90/10 cupro-nickel tubes, 16' long, brand new, 16 gauge, at below wholesale price.

REBUILT CARGO PUMP TURBINES AND GEARS

600 HP G.E. DRY-125 with reduction gear to 1750 RPM

450 HP G.E. DR-120 with reduction gear to 1750 RPM

One (1) new 800 HP Skinner turbine, 585 PSI with Lufkin gears to 1750 RPM

Two (2) rebuilt 600 HP Skinner turbine with Lufkin gears to 1750 RPM

We have new turbine rotors, governors, bearings and gears for Skinner turbines in stock.

Four (4) 600 HP Worthington S2R turbines with reduction gears to 1750 RPM

We have hundreds of other turbines in stock.

REBUILT AXIAL FLOW FANS

Sizes from 2000 CFM to 50,000 CFM

100 NEW U-BEND 2" WITH 5" GILL RINGS

Foster Wheeler economizer elements for Bethlehem ships

ENTERPRISE DC DIESEL GENERATOR SETS

Two (2) 250 Enterprise DC Diesel Generator sets for parts. Type DSG-6

NEW STAINLESS STEEL GOULD PUMP

3000 GPM at 186 foot head — 10" X 8"

REBUILT INGERSOLL RAND 10 GTM CARGO PUMP

5000 GPM at 125 PSI

SHIP AIR HORNS

New Leslie typhon air whistle for 70000 ton tanker
New Leslie typhon air whistle for 150000 ton tanker

FOUR NEW STAINLESS STEEL PROPELLERS

9' 6" diameter with ABS

CALL
WRITE
WIRE



4½ ACRES OF MARINE EQUIPMENT FROM
PORTHOLES TO PROPELLERS — ALL EQUIPMENT GUARANTEED
AT OUR JERSEY CITY WAREHOUSE — 210 Henderson St. Jersey City, N.J. 07302
JACKSONVILLE WAREHOUSE — 8th & Evergreen St. Jacksonville, Florida 904-354-1495
MARITIME POWER CORPORATION

39 BROADWAY

NEW YORK, NEW YORK 10006

Telephone 212/422-3967

SOFTech
THE SOFTWARE TECHNOLOGY COMPANY

**CAD & CAM
Systems Technology!**

460 Totten Pond Rd. Waltham, MA 02154 (617) 890-6900 1-800-275-8854

**ELECTRICAL MARINE
CABLE SPECIALISTS**

• Large Inventory • Coast Guard & Navy specs.

UNIVERSAL WIRE & CABLE CO.
• HOUSTON 713-923-2527

And Other Cities Coast to Coast!

OUR WAREHOUSE

IS REALLY

HATCH CITY!

**IT'S THE ONLY
PLACE TO LOOK FOR THE**

WATERTIGHT HATCHES & DOORS YOU NEED



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

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



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

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



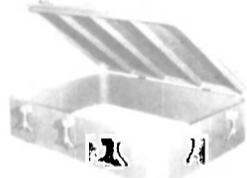
**TANKER
EXPANSION TRUNK**

36" Diameter — 26" coaming — 7-Dog drop-bolts. Drawing #36 26



**20" ROUND
HATCH**

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



CARGO HATCHES

48" x 36" x 5" 48" x 48" x 9"
66" x 81" x 12" 72" x 72" x 12"
72" x 74" x 12"



FLUSH HATCHES

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



**QUICK-ACTING
4-DOG HATCHES**

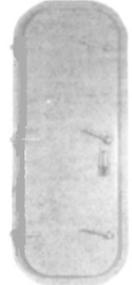
Heavily constructed. Handwheel operated. Handwheels top & bottom. Size A: 27" x 21" w/12" coaming. Size B: 31" x 31" w/12" coaming. For ocean-going barges, etc.



**QUICK-OPENING
HATCH**

Handwheel top & bottom. 4 Dogs. 16" x 24" with 5" coaming. Drawing #60-40

**CLEAR
OPENING
26" x 78"
and
30" x 78"**



**FUME & WEATHERTIGHT
DOORS**

**GENERAL
PURPOSE
HATCH**

**15" x 23" x 5"
4-DOG
ALL-BRASS
FITTED**



**QUICK-ACTING
LEVER-OPERATED
WATERTIGHT DOORS**

**8-DOG
26" X 66"**

**Rights
and
Lefts**

**IMMEDIATE DELIVERY
ON THE HATCHES
YOU ORDER**

*Inquire about doors
and hatches not
listed here!*

**WE HAVE MANY
MORE IN STOCK**

THE BOSTON METALS COMPANY

MAIN OFFICE: (301) 539-1900
313 E. Baltimore St.

— Call Al or Dean —
TWX: 710-234-1637

WAREHOUSE (301) 752-1077
Baltimore, Md. 21202 U.S.A.

**15½" CLEAN BRASS
4-DOG MARINE
PORTLIGHTS
15½" CLEAR OPENING**



Recently carefully hand removed from ocean vessels. Suitable for re-use on shipyard conversions or for marine ornamental use. Heavy marine standard glass . . . clear or can be furnished frosted for use in special locations.

THE BOSTON METALS COMPANY

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

**450 KW A.C.
TURBO-GENERATORS**



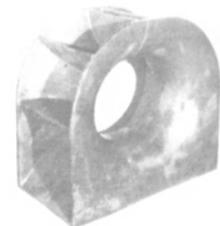
GENERATOR: Westinghouse 450KW 563KVA—450/3/60 721 amps — 80% PF — 1200 RPM — serial nos. 2 519P405 & 6 519P405. GEAR: Worthington-Moore — form 14 x 10 — gear 1200 RPM — pinion 6097 RPM — ratio 5.08:1. Serial Nos. 7801 & 7802. TURBINE: Worthington — 250 lbs steam @ 406° — form U356 — exhaust 27.5" vac. — shop order 4161 — serial Nos. 7801 & 7802.

WILL SELL ROTORS SEPARATELY

THE BOSTON METALS COMPANY

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

**EXTRA HEAVY DUTY
EXTRA LARGE PANAMA CHOCKS**



Clear opening 16" X 20" — 10" Radius. 36½" High — 40½" long.

THE BOSTON METALS COMPANY

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

FOR SALE

NEW WATERTIGHT DOORS



Steel Dogs

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

SIZE

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

EACH DOOR

IMMEDIATE DELIVERY



NEW 7" RADIUS PANAMA CHOCKS

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

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

NEW UNUSED 12" X 6 1/2" PANAMA CHOCKS FOR SMALL VESSELS

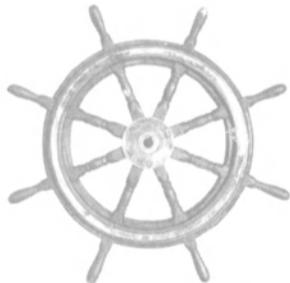


Closed chocks — 12" X 6 1/2" inside opening — 23" overall outside — 8" high — 15" high — 7" radius — weight 110 lbs. IN STOCK.

THE BOSTON METALS COMPANY

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

36" TEAKWOOD SHIPS WHEELS

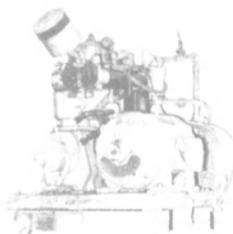


Brass bound on rim with brass hub marked "John Hastie & Co. Ltd. — Greenock".

THE BOSTON METALS COMPANY

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

10 CFM — 600 LB WORTHINGTON H.P. AIR COMPRESSOR



7 1/2 HP Motor — 440/3/60.
Type VD2N—size 4 1/4 x 1 3/4 x 3. Ex-Navy — reconditioned.

THE BOSTON METALS COMPANY

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

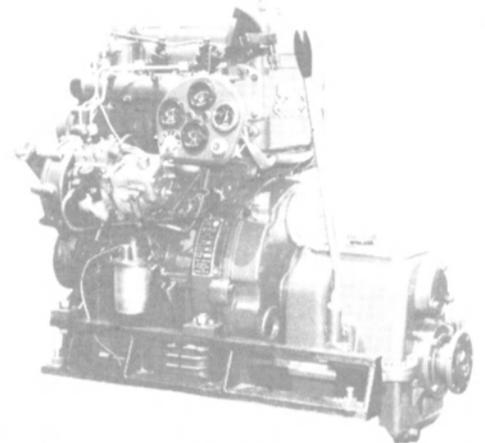
THE DIESEL DEAL OF THE YEAR! 20 HP Marine Diesel Engine

Complete with 2.1:1 Gear, 2 Batteries, Tools and Maintenance Spare Parts



OUR SERIES 90

perfect for powering small pleasure, fishing and commercial boats, auxilliary engine use, etc.



CHECK THE SPECS!

- Cylinders 2
- Max. rated HP 20
- Rated RPM 2000
- Fuel Consumption at rated output approx. 2 gal/hr
- Rotation: Clockwise when running forward and viewed from output end of shaft
- Max length 37 3/4"/max. width 24 5/64"/max. height 34 1/4"
- 12-Hr. SHP output rating 18.4 HP
- Approx. speed of output shaft at rated RPM:

Forward	712
Reverse	735

FACTORY NEW — IN CRATES — AND COMPLETE WITH INSTRUCTION BOOK, PARTS LIST AND PERFORMANCE CURVES

Precision made and beautifully crafted, our series 90 marine diesel is a rugged power plant. Versatile, compact and dependable, it's an exceptional engine. At 880 lbs (400Kg) it's a surprisingly

light high-speed 2-cyl. 4-cycle diesel. Water-cooled with a non-ferrous heat exchanger and sea water pump, it's equipped with reverse reduction gear box.

CAN BE STARTED WITH HAND CRANK

IMMEDIATE DELIVERY

We are your Direct Factory Outlet nearest to Gulf and Florida Ports

THE BOSTON METALS COMPANY

MAIN OFFICE: (301) 539-1900
313 E. Baltimore St.

— Call Al or Dean —
TWX: 710-234-1637

WAREHOUSE (301) 752-1077
Baltimore, Md. 21202 U.S.A.

NEW — 3200 HP Farrell - Birmingham DIESEL REDUCT. GEARS



DOUBLE INPUT — SINGLE OUTPUT

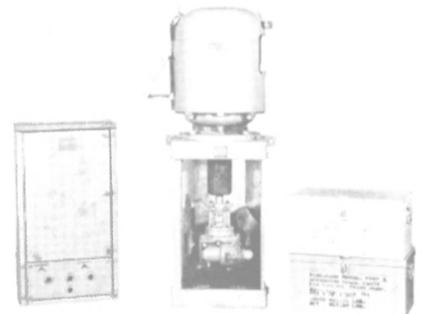
Farrell-Birmingham — 3200 SHP. Reduction gear: 1.81:1 — handles two 1600 HP diesels @ 720 RPM. With hydraulic couplings & Fawick clutch. Port and starboard.

\$7950 each

THE BOSTON METALS COMPANY

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

NEW KINNEY 20 GPM FUEL OIL SERVICE PUMP



20 GPM/50 lbs — 2" X 2" — with 2 HP 440/3/60 860 RPM motor. Fuel oil service pump with relief valve.

\$1650

THE BOSTON METALS COMPANY

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

For Sale or Charter at Zidell

AVAILABLE FOR IMMEDIATE DELIVERY

Z Big 1 FOR WORLDWIDE USE



A.B.S.
Classed Maltese Cross A-1
International Load Line

U.S.C.G.
Oceans
Certificate of Registry
Gross Tons — 8914
Panama Canal Tonnage
Certificate

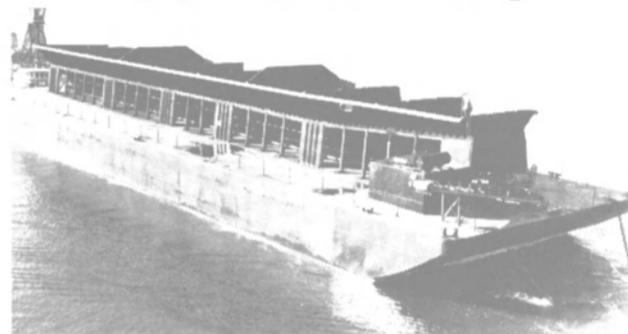
Length	400' 0"
Beam	99' 6"
Depth	25' 0"
Deadrise	27"
Draft Light	3' 11"
Draft Loaded	19' 4"
Transverse Bulkheads	5 O.T.
Length Bulkheads	3 O.T.
No. Tanks	20
Rolled Bilge	48" R.
Mich. Bow	60' length
Sq. Raked Stern	80' length

DECK CARGO
Open Deck Area 37,886 S.F.
Deck Load 1,500 P.S.F.
D.W.T. 18,500 L.T.

AS OIL BARGE
Oil Cargo 150,000 BBL's
21,000 L.T.
Cargo Piping 14" Mains
10" Suctions

AVAILABLE DECEMBER 14, 1981

Self Unloading Aggregate Barge



ZAG-501

Length (O.A.)	248' - 0"
Beam	63' - 0"
Depth	16' - 0"
Displacement Light	1010 S.T.
Draft Light (F.W.)	2' - 7 1/2"
Draft Loaded (F.W.)	11' - 8"
DWT	4000 S.T.
Diesel Electric Set	100 KV
Hopper Volume	2667 cu. yd

Hopper Unloading Gates: 27-36" x 36" Horiz. sliding gates w/individual hydr. controls.

Main Unloading Conveyor: 48" wide belt, 30 H.P. elect. motor, 250 ft./min. Max. disch. rate - 667 cu. yd./hr

Transfer Conveyor: 42" wide belt, 10 H.P. elect. motor, 350 ft./min. off loading location - Stbd. side fwd. at 9 ft. above deck.

Hull Plating: Deck, side shell & bott. 5/16"

Split Type Self Dumping Scows

Built 1979. For sale, long or short term charters

SPECIFICATIONS

ABS loadlined for USCG-approved offport dumping

Length (MLD)	180 - 0"
Beam (MLD)	50' - 0"
Depth of Mid-Body (MLD)	14' - 0"
Hopper Length (MLD)	128' - 0"
Level Hopper Volume	1421 cu. yd.
DWT @ d = 10.22 ft.	1615 L.T.
Rake Lengths F & A	26' - 0"
Twin Skegs	
Stern & Fwd. Rake Decks Stepped up	2' - 0"
Engine GM 671	
Hydraulic Pumps (2) 12 GPM & 75 GPM	
Time To Open (Fully Closed to Fully Open)	6 Min. 5 Sec
Time To Close	4 Min. 34 Sec
Hopper Angle Fully Open	53.78
Fuel Tank Capacity	445 Gal.
Hydraulic Cylinders (2 Fwd. & 2 Aft)	18" Diam. 120" Stroke

Plating	
Side	9/16"
Bottom	5/8"
Hopper	5/8"

Combination Deck Cargo & Tank Barge

Fully-Classed
Ocean Service



230' x 60' x 15' Comb. Deck Cargo & Grade 'D' Tank Barge

Length O.A.	230' - 0"
Beam	60' - 0"
Depth	15' - 6"
Deadrise	6"
Number of Tanks	10
Total Tank Volume @ 95%	24,000 BBL
Cargo Pumps	Two Twin Screw, Deleval IMO GTS-268-066-CBEM
Rating	1500 GPM, 1150 RPM, 100 PSIG Disch. Press., 5000 SSU
Location	Below Deck Pumproom in Fwd. Rake
Diesel Engines	Two Detroit Model 8V-71, 230 HP @ 1800 RPM
Location	Above Deck in Fwd. Deckhouse
Fuel Capacity	1400 Gal.
Fill & Disch. Connections	8" ANS 150# FLG P/S
Heating Coils	2" Sch. 80 Pipe For Shore Steam
Hull Plating	Deck 1/2", Side Shell 3/8", Bott. 3/8", Shear Strake 1/2"
Deck Cargo Dwt. at Loadline	3900 S.T.

For additional information or to make an appointment to inspect, call or write:
Tom Sherwood, Andy Canulette, Jr.,
or Dan Rogers

Z E ZIDELL

ZIDELL EXPLORATIONS, INC.

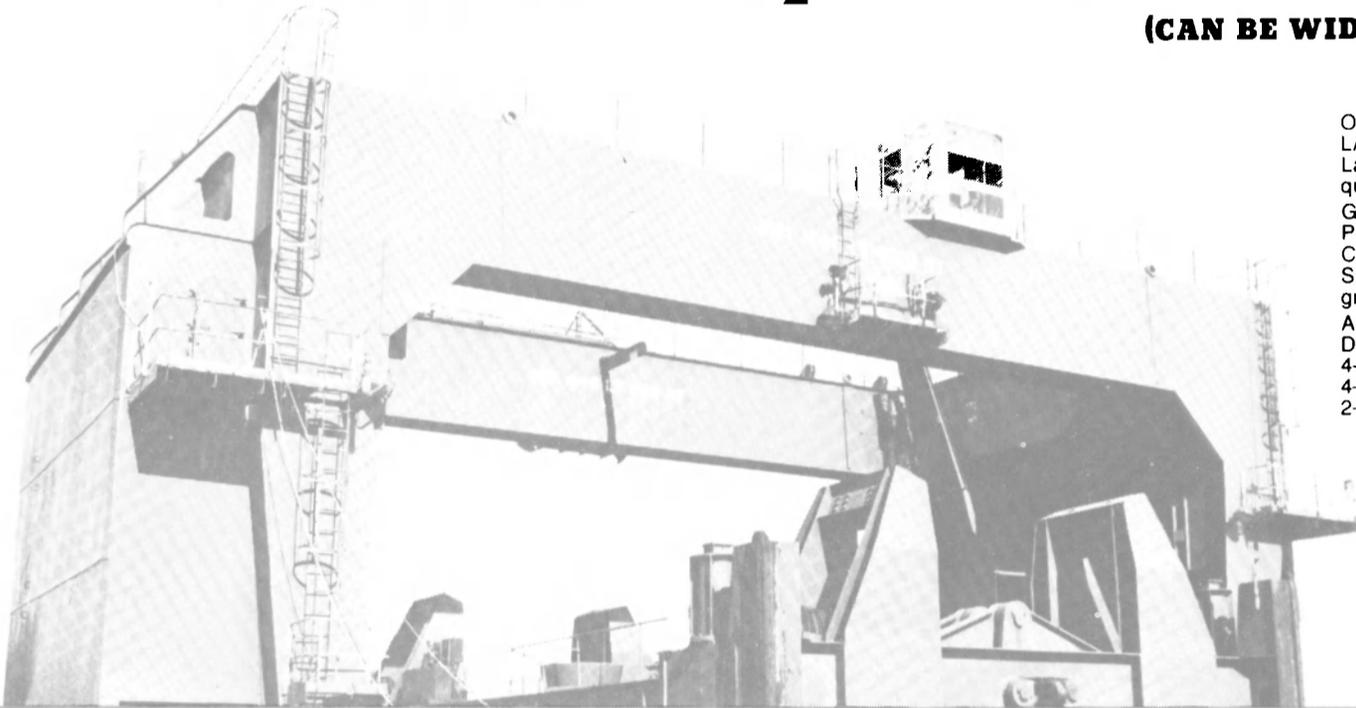
3121 S.W. Moody Ave., Portland, Oregon 97201

Phone: (503) 228-8691 • Telex 36-0503 • Cable "Zidell"

For Sale at Zidell

AVAILABLE NOW FOR IMMEDIATE SHIPMENT

Two 500-ton Gantry Cranes 70-foot Track Span (CAN BE WIDENED TO 100 FEET)



Originally Barge Handling. As used on LASH Ships. Manufactured by Alliance. Late Model built to ABS and MARAD requirements.

Good Condition. Immediately Available. Priced at a fraction of New Replacement Cost. Complete with Lifting Beams and Spreader Beams (not shown in photograph)

AC Power Input Through Cable Reel
DC Hoist & Gantry Motors & Controls
4-150 HP-240 Volt DC Hoist Motors
4-150 HP-240 Volt DC Gantry Motors
2-265 KW-500 Volt DC M-G Sets

Units Can Be Modified

Possible other uses:

- 1) Moving heavy equipment
- 2) Dam Sites
- 3) Concrete Prefab plants
- 4) Railroad yards
- 5) Steel plants

Geared Track is also available at extra cost



American Crane Barge

BARGE DATA

Displacement Light	1,200T.
Gross Tonnage	911
Net Tonnage	911
Length	151 - 6'
Beam	60' - 0"
Hull Depth	12' - 0"
Flush Deck Area	6,000 Sq. Ft.
Engine Room Area	412 Sq. Ft.
Office & Eating Area	136 Sq. Ft.
Diesel Fuel Tanks	36,000 Gal.
Fresh Water Tanks	36,000 Gal.
Bunker "C" Fuel Tanks	12,000 Gal.
Ballast System	None

CRANE DATA

Manufacturer	American Hoist & Derrick Co.
Model & Type	305 Revolver
Capacity	125 T.
Boom (Certified rating with 140' length, 160' available)	
20 part rigging	2,200 ft., 7/8" C - 6 x 36 I.P.S.
4 part standing standing bail	2-186 ft., 1 3/4" C - 6 x 36 I.P.S.
Main Hoist (Certified rating: 58.5 T. @ 50' to 100', 8 part. rigg.)	
20 part rigging	3,250 ft., 1" C - 6 x 36 I.P.S.
Aux. Hoist (Certified rating: 10.0 T. @ 100') 15 T. Capacity	
2 part rigging	635 ft., 7/8" C - 6 x 66 I.P.S.

FOUR 30-TON

Container Cranes 70-foot Track Span

NEW 1970-72

Priced at a fraction of today's new replacement cost. Good Condition. Immediately Available. From LASH Ships. Late Model. Manufactured by PACEO. Suitable for Ship, Barge or Land Use. Manufactured to ABS and MARAD requirements.

AC Power Input with Cable Reel and 350 feet of 500 MCM Cable.

MG set: 250 HP-AC-170 KW 230 DC.

• 200 HP DC Hoist Motor • 100 HP DC Trolley Motor • 2-40 HP DC Gantry Travel Motors • Trolley Travel 275 F.P.M. • Gantry Travel 100 F.P.M. • Hoist Speed: 30 LT @ 85 F.P.M.; 20 LT @ 100 F.P.M.; Empty Spreader 200 F.P.M. • 32' 0" Maximum Outstretch • Hoist, Trolley Travel and Gantry Motors are DC and have VSR and VSX regulation.

Hoist and Trolley not shown but are included.

Other areas of possible use:

- 1) Pipe and steel yards
- 2) Barge building
- 3) Concrete pre fab plants



For additional information, brochures or inspection, call: Tom Sherwood, Andy Canulette, Jr., or Dan Rogers



ZIDELL EXPLORATIONS, INC.

Hugh Sturdivant, Sales Manager
3121 S.W. Moody Ave., Portland, Oregon 97201
Phone: (503) 228-8691 • Telex 36-0503 • Cable "Zidell"

**M & T Model O-2D
Marine Outboard Diesel
Driven Propulsion Units**



**EQUAL TO
NEW CONDITION
\$18,750**

**Compare Our Units
With Offers By Others**

Equal-to-new-condition. Driven by GM 6-71 diesel—165 HP @ 1800 RPM—2-cycle—6 cylinders. Weight 9300 lbs—48" X 24" propeller. Unit shown with outboard shaft in running position. Distance from deck to bottom of skeg 89". 4 Units immediately available.

THE BOSTON METALS COMPANY

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

**LOUIS-ALLIS M.G. SETS
2.5 KW 120 Volt Single Phase 60 Cycle Output
120 Volt D.C. Input — 1800 RPM
NEW - UNUSED EX - U.S.N.**



2½ KW—115 volts single phase A.C. output. GENERATOR: Type GNA—class 1G—Frame 28A—Form A—1800 RPM—5 KVA—2.5 KW 115 volts AC—60 cycle—50% PF—43.4 amps. MOTOR: Louis Allis—Type GNA—Class E—Frame 25A—Form A—1800 RPM—115 volts DC—32 amps—shunt wound (with attached Ward-Leonard frequency regulator). Some control panels available.

CAN FURNISH WITH 230 VOLT DC INPUT

THE BOSTON METALS COMPANY

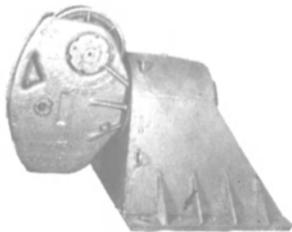
Marine Warehouse (301) 752-1077
313 E. Baltimore St. Baltimore, Md. 21202
TWX: 710-234-1637

**SURPLUS
BERGER
FAIRLEADS**

2 Model 620 — for
1½" wire — 20"
sheave.

\$3500

Also 1 for 1¼" wire



THE BOSTON METALS COMPANY

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

**60" X 54" WATERTIGHT
STEEL DOUBLE DOORS**



Used doors — with 10" diameter lites. Each door has 7 dogs for a total of 14.

THE BOSTON METALS COMPANY

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

49¢

Per Pound

**NEW — UNUSED
2¾" STUD LINK CHAIN**

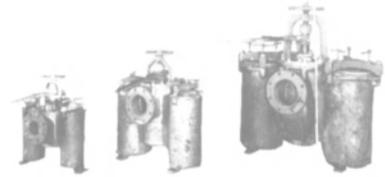
WITH CERTIFICATES

20 Shots—grade 2—49¢/lb. Each shot weighs 6450 lbs.
Connecting links for above chain — \$575 each

THE BOSTON METALS COMPANY

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

**NEW — UNUSED
DUPLEX STRAINERS**



Available from cancelled sea-going barge construction contract.

- (1) 4" — Bronze strainer baskets for water. Can furnish Type 50 for oil.
- (2) 8" — Steel strainer baskets for sea water — Type 50

Mfg. by Hayward
**BIG DISCOUNT
PRICES**

THE BOSTON METALS COMPANY

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

NEW BALANCED HEAD FAIRLEADS

1¼"
\$2775

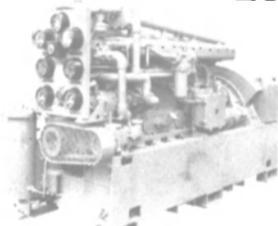


1½"
\$3350

THE BOSTON METALS COMPANY

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

LST MACHINERY

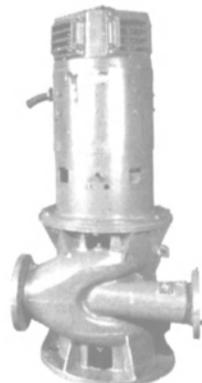


100KW GBD-8 DIESEL GENs.

120/240 VDC—417 amps—stab shunt—1200 RPM—Delco generator—Self-excited. ENGINE: Superior GBD-8—8-cyl—5½X7—150 HP—30 volt electric starting. Reconditioned to ABS. Dry wt. 10,000 lbs—DAL 124"—65 11/16" high—42" wide. Hgt necessary to pull piston 68". Fuel consumption 0.620 lbs/hr.

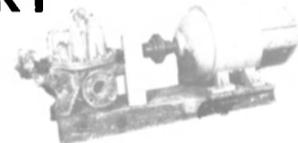
**GARDNER-DENVER
BALLAST PUMP**

Bronze — 1500 GPM — 56' head or 25 lbs — 8" suction — 6" discharge. MOTOR: Century 30 HP 230 VDC 110 amps 1750 RPM. 40° T rise — stab. shunt — ballbearing — dripproof. Controls available.



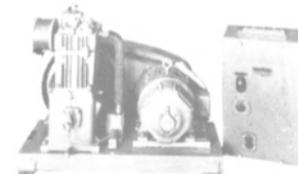
TAILSHAFTS

Diameter: 6 1/8" Length: 21' 2 5/8"



GOULD FIRE & BILGE PUMP

250 GPM & 100 lbs—4" suction—3" discharge—2200 RPM—bronze—manufactured by Gould. Direct connected to 30 HP 230 volt DC Louis-Allis motor.



CLUTCH TIRE AIR COMPRESSOR

Model 320—4 X 2½ X 3"—10/15 CFM—100/150 PSI—700 RPM. MOTOR: 3 HP—230 volts DC—1750 RPM.

**COMBINATION LUBE OIL &
SALT WATER COOLING PUMPS**

Model 3630—mfg by Goulds—1150 RPM. Rotary lube oil pump one end (35 GPM @ 15 PSI—1½" X 1½")—salt water circulating pump other end (35 GPM @ 15 PSI—2" X 1½") G.E. Motor model 5B254A1988—type B—Frame 254—3 HP—230 VDC—11.9 amps—1150 RPM compound—Cont. 40° C temp rise. Ball bearing.

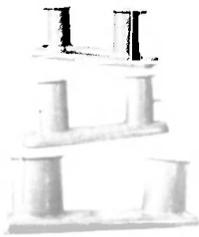
THE BOSTON METALS COMPANY

313 E. Baltimore St.

752-1077

Baltimore, Md. 21202

TWX: 710-234-1637



2-POLE BITTS

10" 14" 20"
IN STOCK

THE BOSTON METALS COMPANY

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

FOR SALE

C4-S-A1 TYPE CARGO SHIP EQUIPMENT FROM BETHLEHEM-BUILT EX-"YORKMAR"

- ROTOR: 400 KW Worthington-Moore Steam Turbine
- TURBINE: Type S-6—6097 RPM—7-Stage—very good condition—with ABS
- REDUCTION GEAR: 14x10—6097/1200 RPM—with ABS

FROM BETHLEHEM-SPARROWS POINT BUILT TANKER 13,750 HP

- L.P. ROTOR: Built by Bethlehem—21-stage—6250 HP at 2100 RPM—weight 27,725 lbs.
- TURBO GENERATOR: 400 KW DE LAVAL-WESTINGHOUSE
TURBINE: De Laval—585# 840°—type CD—5905 RPM—7-stage
GEAR: Type KD—5905/1200 RPM
GENERATOR: Westinghouse—Frame 6-39-11—400-KW
WILL SELL ROTOR—GEAR—STATIONARY BLADING ELECTRIC GENERATOR COMPONENTS SEPARATELY

- FROM WESTINGHOUSE 400 KW TURBO GENERATOR SET.
TURBINE: 10A4462-4—9018 RPM—Instr. Book 1430-C-36—Rotor and stationary blading available
GOVERNOR: Available
GENERATOR: Westinghouse Model 66-39-11—#3547P706
GEAR: Sold

ALL THE ABOVE AVAILABLE AS PARTS
CONDENSER TUBES

New—110, each 26' long

FULLY RECONDITIONED PUMPS READY WITH ABS

- 1 Aux. Vertical Centrifugal Condensate—size 1½CV11—40 GPM—191' head. Motor available: 10 HP—1750 RPM—440/3/60
- Fire and General Service Pump
- Wash Water Pump
- 83/21 HP FORCED DRAFT FAN MOTOR Form 505
- Westinghouse—Frame 505—83/21 HP—440/3/60—99.5/39.5 amps—1766/885 RPM—24-hr. duty—temp. 40°C. In stock. ABS ready.

THE BOSTON METALS COMPANY

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

Commission Destroyer USS Scott Third Ship In A New Class



USS Scott, the third ship of the four guided missile destroyers Ingalls Shipbuilding is building for the Navy.

The third ship in a new class of U.S. Navy guided missile destroyers, the most formidable surface ships of their size now joining the Navy, was commissioned recently at Ingalls Shipbuilding Division of Litton Industries, Pascagoula, Miss.

An additional ship of the class, USS Chandler (DDG 996), is nearing completion.

NEW — UNUSED SUMP OR LOW PRESSURE DRAIN PUMPS

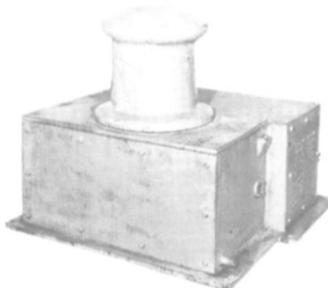


Bronze—40 GPM @ 40PSI. 2" Discharge—single impeller—CW rotation—32" from deck plate to base. Complete with flotation equipment. Totally enclosed 5HP 440/3/60 1725 RPM motor. Repair parts for motor & pump included.

THE BOSTON METALS COMPANY

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

A.C. CAPSTAN 10,000 LBS @ 40 FPM



Totally enclosed 10 HP 440/3/60 1750 RPM motor. Barrell working area: top 11½" diameter—bottom 13" diameter—over a 9" span. Deck space required 36" X 41". Total height 34".

THE BOSTON METALS COMPANY

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

The first destroyer, the USS Kidd (DDG 993), was commissioned in June and is presently assigned to the U.S. Atlantic Fleet, based at Norfolk, Va. The USS Callaghan (DDG 994) was commissioned in August and is based in San Diego, Calif., with the Pacific Fleet.

Based on the proven design of the Ingalls-built Spruance-class destroyers, which began joining the fleet in 1975, the Scott is a multimission ship, able to operate offensively or defend against simultaneous air, surface, and subsurface attacks.

The ship is 563 feet long, with a 55 foot beam, and displaces 9,200 tons. The crew consists of 28 officers and 320 enlisted men.

Ingalls is also building the U.S. Navy's new class of Ticonderoga guided missile cruisers. When deployed in early 1983, the first of these ships will carry the Aegis weapons system, the most sophisticated air defense system in the world. The first ship, Ticonderoga (CG 47), was christened by Mrs. Ronald Regan in May.



SAN FRANCISCO'S NEW PIER 41 terminal at Fisherman's Wharf now houses headquarters offices and operations center for the Red and White Fleet's Bay Cruise Lines. The \$4.5-million facility includes administrative and ticket offices, gift shop, snack bar, catering kitchen, plus new docks, public viewing decks, public rest rooms, and landscaped park areas. Constructed as part of the city's north waterfront revitalization plan, the terminal will be the embarkation point for the seven-vessel Red and White Fleet's Alcatraz and Angel Island tours, and charter service for party and tour groups. The Red and White Fleet serves more than two million passengers annually, including daily Tiburon ferry commute service to the city's Ferry Building terminal.

Nuclear Attack Submarine La Jolla Commissioned At New London

Commissioning ceremonies for the high-speed nuclear-powered attack submarine USS La Jolla (SSN 701) were held recently at the Naval Submarine Base, New London, Conn.

The La Jolla—named after the city in California—is the ninth of the Los Angeles-class attack submarines to have been built and launched by the Electric Boat Division of General Dynamics, Groton, Conn.

Officials from the namesake city and from the State of California attended the ceremony. Mrs. Shirley Haughey Wilson, wife of Congressman Bob Wilson, was the sponsor. Representative Clair W. Burgener was the main speaker.

The keel of the submarine was laid October 16, 1976, and the vessel was launched on August 11, 1979. The 360-foot-long ship displaces 6,900 tons when submerged. She is capable of speeds in excess of 20 knots and carries a crew of 127 officers and men.

BUYERS DIRECTORY

AIR CONDITIONING AND REFRIGERATION—REPAIR & INSTALLATION

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

ANCHORS AND CHAIN

Baldt Incorporated, P.O. Box 350, Chester, PA 19016

ANODES—Cathodic Protection

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

BEARINGS—Rubber, Metallic, Non-Metallic

Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062
Lucian Q. Maffitt, Inc., P.O. Box 1415, Akron, Ohio 44309
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wis. 53186

BLASTING—Cleaning—Equipment

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

BOILERS—Tube Cleaning

Combustion Engineering, Inc., Windsor, Connecticut 06095
A.B. Murray Company, Inc., P.O. Box 476, Elizabeth, NJ 07207

BROKERS

Aldenships, 2182 S.E. 17th Street, Fort Lauderdale, FL 33316
B.R.I. Coverage Corporation, 156 Williams Street, New York, NY 10038
Capt. Astad Company, Inc., P.O. Box 53434, New Orleans, La. 70153
Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
Mowbray's Tug and Barge Sales Corp., 21 West St., N.Y., N.Y. 10006

BRONZES—COMMEMORATIVE

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

BUNKERING SERVICE

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

CARGO HANDLING EQUIPMENT

Navire Cargo Gear, 77 River Street, Hoboken, NJ 07030
W.W. Patterson Company, 3 Riversea Road, Pittsburgh, PA 15233

CARGO TRANSFER & ACCESS EQUIPMENT

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

CHAINS

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

CHOCKING SYSTEMS

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

CONTAINERS—Cargo Container Handling

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

CONTROL SYSTEMS—Monitoring

Arnesen Marine Systems, Inc., One Battery Plaza, New York, NY 10004
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
Megastystems, Inc., 1075 N.W. 58th Street, Boca Raton, FL 33431
National Marine Service, Inc., 1750 Brentwood Blvd., St. Louis, MO 63144
Pan American Systems Corporation, P.O. Drawer 400, Belle Chasse, LA 70037
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062

COUPLINGS

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

CRANES—HOISTS—DERRICKS—WHIRLIES

American Hoist & Derrick Company (AMHoist), St. Paul, MN 55107
Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081
M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07087
National Supply Company, 1455 West Loop South, Houston, TX 77027
J. D. Neuhaus, Witten-Heven, Hebezeuge, D 5810 Witten-Heven, West Germany
Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501

CREDIT REPORTING

Steamship Vendors, P.O. Box 2850, Long Beach, CA 90801

DECK MACHINERY—Cargo Handling Equipment

Marine Technical Associates, 195 Patterson Avenue, Little Falls, NJ 07424
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
Haynes Corporation, P.O. Box 179, Jackson, MI 49204
Twin Disc, Inc., 1328 Racine Street, Racine, WI 53403

ELECTRICAL EQUIPMENT

Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Federal Pacific Electric Company, P.O. Box 1800, Somerville, NJ 08876
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

EMULSIFICATION SYSTEMS

Cleanadan A/S, N. American Agents, American United Marine Corp., 5 Broadway, Route 1, Saugus, MA 01906
Hoffert Manufacturing Company, Inc., 1700 East Church Street, Jacksonville, FL 32202

EQUIPMENT—Marine

ATCO Marine Corp., 603 Dean Street, Brooklyn, NY 11238
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014
Conhagen/USMP Company, Inc., 4475 South Clinton Ave., South Plainfield, NJ 07080
Consafe Inc., P.O. Box 40339, Houston, TX 77040
Duraline, 75 Hoffman Lane, Central Islip, NY 11722
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550
J. H. Menge & Company, Inc., P. O. Box 23602, New Orleans, La.
John P. Nissen, Jr. Company, Glenside, PA 19038
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080
Stal Laval Inc., 525 Executive Blvd., Elmsford, NY 10523
Sudaimport, 5 Kalyaevskaya, Moscow K-6, USSR
Unitor Ships Service A/S, Mastemyr, 1410 Kolbotn, Norway

Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wis. 53186
Xorbox, Division of Greene & Kellogg, Inc., 290 Creekside Dr., Tonawanda, NY 14150
Zesco, Inc., 3694 Westchase Drive, Houston, TX 77042

EVAPORATORS

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

EXPANDED METALS—METALS

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

FANS—VENTILATORS—BLOWERS—HEATEXCHANGERS

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

FENDERING SYSTEMS—Dock & Vessel

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

FINANCING—Leasing

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

FUEL OIL/ADDITIVES—Analysis & Combustion Testing

Rolfite Products Inc., 300 Broad Street, Stamford, CT 06901
XRG International, Inc., 4125 S.W. Martin Hwy., Stuart, FL 33494

FURNITURE

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

GALLEY EQUIPMENT

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

GANGWAYS

Rampmaster Inc., 1226 N.W. 23rd Ave., Fort Lauderdale, Fla. 33311
W & A Engineers, Inc., 4040 Veterans Highway, Metairie, LA 70002

HATCH & DECK COVERS—Chain Pipe

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

HULL CLEANING

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

HYDRAULICS

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

INERT GAS—Generators—Systems

ATCO Marine Corporation, 603 Dean St., Brooklyn, NY 11238
Camar Corporation, P.O. Box 460, Worcester, MA 01613
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039
Peabody Holmes Ltd., 17-27 Garratt Lane, London SW 18 4BY

INSULATION—Cloth, Fiberglass

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

INSURANCE

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

JOINER—Watertight Doors—Paneling

Masonite Commercial Division, Dover, OH 44622
Walz & Krenzer, Inc., 400 Trabold Road, Rochester, NY 14624

KEEL COOLERS

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

LIFEBOATS & DAVITS

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

LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights

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

MACHINE TOOLS

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

MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING

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

MOORING SYSTEMS

Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

NAME PLATES—BRONZE—ALUMINUM

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

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS

Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Highway (Suite 1300), Arlington, VA 22202
Agemar, Ave. 17 No. 108-129, P.O. Box 1465, Maracaibo, Venezuela
All Points Associates, Inc., RD #1, Box 3309, Monroeville, OH 44847
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015
J.L. Bludworth, P.O. Box 2441, Corpus Christi, TX 78403
Jacksonville, Florida 32211
Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130

C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd., CTS & Associates, 11320 S.W. 108 Court, Miami, Fla. 33176
CADCOM, 107 Ridgely Ave., Annapolis, MD 21401
Childs Engineering Corp., Box 333, Medfield, Mass. 02052
John P. Colletti & Associates, P.O. Box 13378, Pittsburgh, PA 15243
Columbia-Sentinel Engineers Western, Inc., P.O. Box 21542, Seattle, WA 98111

Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026

Crane Consultants Inc., 15301 1st Ave., So. Seattle, Washington 98148
C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048

Norman N. DeJong & Associates, Inc., 1734 Emerson St., Jacksonville, Fla. 32207
Design Associates Inc., 14360 Chef Mentour Highway, New Orleans, LA 70129

Designers & Planners, Inc., 2341 Jefferson Davis Hwy., Suite 1100, Century Bldg., Arlington, VA 22202
Donhaiser Marine, Inc., 11511 Katy Freeway, Houston, TX 77079
Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034

Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050

Friede and Goldman, Ltd., 225 Baronne St., New Orleans, La. 70112
Giannotti & Associates, Inc., 703 Giddings Ave., Suite U-3, Annapolis, MD 21401

Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006
John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110

The Glasten Associates, Inc., 610 Colman Bldg., 811 First Ave., Seattle, WA 98104

Phillip Gresser Associates, Ltd., 3250 South Ocean Blvd., Palm Beach, FL 33480

Morris Guralnick Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107

J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048

Hoffman Maritime Consultants Inc., P.O. Box 186, Glen Head, NY 11545

Hydranautics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810

Jantzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227

James S. Krogen & Co., Inc., 3333 Rice St., Miami, Fla. 33133
Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460

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

Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225

George E. Meese, 194 Acton Rd., Annapolis, Md. 21403

Metritape, Inc., 33 Bradford Street, Concord, MA 01742

NKF Engineering Assoc., Inc., 8150 Leesburg Pike, Vienna, VA 22202

Nelson & Associates, Inc., 1405 N.W. 167th Street, Miami, FL 33169

Nickum & Spaulding Associates, Inc., 911 Western Ave., Seattle, WA 98104

Captain Conrad P. Nilsen, 66 Beverly Road, Bloomfield, NJ 07003

Norgaard and Clark, 114 Sansome St., San Francisco, CA 94104

Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114

Offshore Power Systems, 8000 Arlington Expressway, Jacksonville, FL 32211

PRC Guralnick, 5252 Balboa Ave., San Diego, CA 92117

Pacific Industries Inc., 1440 Canal Street, Suite 1915, New Orleans, LA 70112

Pearlson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33156

Pilotage Consultants, Inc., P.O. Box 3, Atlantic Highlands, NJ 07716

M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013 and 657 Mission St., San Francisco, Calif.

Sargent & Herkes, Inc., 611 Gravier St., New Orleans, La. 70130

Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316

Seacor Systems Engineering Associates, Corp., P.O. Box 2030, 19 Cherry Hill Industrial Park, Perina Blvd., Cherry Hill, NJ 08003

Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426

George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007

T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2

R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235

Robert L. Stevens Associates, Inc., 654 Beacon Street, Boston, MA 02215

Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963

Timco, 622 Azalea Road, Mobile, AL 36609

Townsend Marine Consultants, 18 Church Street, Georgetown, CT 06829

Wadam Wartsila Helsinki Shipyard, P.O. Box 132, SF-00151 Helsinki 15, Finland

Wesley D. Wheeler Assoc., Ltd., 104 E. 40th St., Suite 206, New York, NY 10016

James Weisbeck, 240 O'Kell Street, Buffalo, NY 14220

Thomas B. Wilson Associates, 920 North Avalon Blvd., Wilmington, CA 90744

Wind Ship Development Corporation, 690 Main Street, Norwell, MA 02061

Wink Incorporated, 8020 Mayo Blvd., New Orleans, LA 70126

XPLO Corporation, 229 Fifth Street, Gretna, LA 70033

NAVIGATION & COMMUNICATIONS EQUIPMENT

AAT Communications Corporation, 1854 Hylan Blvd., New York, NY 10305

American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526

Apelco Marine Electronics, Division of Raytheon, 676 Island Pond Rd., Manchester, NH 03103

Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024

DEBEG Marine, Inc., 10 Manor Parkway, Salem, NH 03079

Electro-Nav Inc., 840 Bond Street, Elizabeth, NJ 07201

Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080

Harris Communications (RF Communications), 1680 University Avenue, Rochester, NY 14610

Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913

Hose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631

ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611

Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780

Iotron Corp., 5 Alfred Circle, Bedford, MA 01730

Kongsberg North America Inc., 135 Fort Lee Road, Leonia, NJ 07605

Kongsberg Vapenfabrikk, Norcontrol Division, P.O. Box 145, Horten 3191, Norway

Krupp Atlas-Elektronik, 241 Erie Street, Jersey City, NJ 07302

Magnavox Navigation Systems, 2829 Maricopa Street, Torrance, CA 90503

Maritel, Inc., 139 Old Solomon's Island Road, Annapolis, MD 21401

Nav-Com, Inc., 9 Brandywine Drive, Deer Park, NY 11729

- Navidyne Corp., 11824 Fishing Point Drive, Newport News, VA 23606
- North American Philips Communication Corp., 55 Knights Bridge Road, Piscataway, NJ 08854
- RCA Service Co., Building 204-2, Camden, N.J. 08101
- Racal-Decca Marine, Inc., P.O. Box G, #1 Commerce Blvd., Palm Coast, FL 32037
- Racal-Decca Marine, Inc., 4200 23rd Avenue West, Seattle, WA 98199
- Radar Devices, Inc., 2955 Merced Street, San Leandro, CA 94577
- Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103
- Raytheon Ocean Systems Company, Westminster Park, Risho Avenue, East Providence, RI 02914
- Raytheon Service Co., 103 Roesler Rd., Glen Burnie, MD 21061
- Sirrad Inc., 1 Labriola Court, Armonk, N.Y. 10504
- Southern Marine Research, Inc., 1401 N.W. 89th Court, Miami, FL 33172
- Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721
- OILS—Marine—Additives**
- B.P. Marine North America Trading, Gateway One, Suite 300, Newark, NJ 07102
- Ferrous Corporation, P.O. Box 1764, Bellevue, WA 98009
- Gulf Oil Company—U.S. (Domestic Oils), 909 Fannin Street, Houston, TX 77001
- Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
- Houston Marine Services, Inc., 505 Atrium One, 11811 1-10 East, Houston, TX 77029
- Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
- Mobil Oil Corporation, 150 East 42nd St., New York, N.Y. 10017
- Texaco, Inc. (International Marine), 135 East 42nd St., N.Y., N.Y. 10017
- OIL/WATER SEPARATORS**
- Alfa-Laval, Inc., 2115 Linwood Avenue, Ft. Lee, NJ 07024
- Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932
- McTighe Industries, Inc., 1615 Ninth Avenue, Suite 1 South, Bohemia, NY 11716
- National Marine Service, Inc., 1750 Brentwood Blvd., St. Louis, MO 63144
- Sigma Treatment Systems, Merry Meadows, RD 1 Box 70, Chester Springs, PA 19425
- PAINTS—COATINGS—CORROSION CONTROL**
- American Abrasive Metals, 460 Coit Street, Irvington, NJ 07111
- American, 4700 Ramona Blvd., Monterey Park, CA 91754
- "CONSOL" manufactured by Hanline Bros., Inc., 1400 Warner St., Baltimore, MD 21230
- Devoe Marine Coatings Co., P.O. Box 7600 Louisville, KY 40207
- E.I. DuPont de Nemours & Co., Inc., Nemours Bldg. Rm. N-2504-2, Wilmington, DE 19898
- Eureka Chemical Company, 234 Lawrence Ave., So. San Francisco, CA 94080
- Henkel Corporation, 4620 West 77th Street, Minneapolis, MN 55435
- International Paint Co., 17 Battery Place North, Suite 1150, New York, N.Y. 10004
- Jatun-Baltimore Copper Paint Co., 840 Key Highway, Baltimore, MD 21230
- Mobay Chemical Corporation, Plastics & Coatings Div., Pittsburgh, PA 15205
- Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O. Box 250, Edison, N.J. 08817
- Palmer Products Inc., P.O. Box 8, Worcester, PA 19490
- Selby, Battersby & Company, 5220 Whiby Avenue, Philadelphia, PA 19143
- PETROLEUM SUPPLIES**
- Houston Marine Services, Inc., 505 Atrium One, 11811 1-10 East, Houston, TX 77029
- Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
- PIPE—HOSE—Cargo Transfer, Clamps, Couplings, Coatings**
- Camlock Flange Sales Corp., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
- CUNICO Corp., Cooney Pipe & Copper Works Div., 214 N. Hawaiian Ave., Wilmington, CA 90748
- Hydro-Craft, Inc., 4223 Edgeland, Royal Oak, Mich. 48073
- Kubota Ltd., 2-47, Shikit Suhigashi 1-Chome, Naniwa-Ku, Osaka 556-91, Japan
- Penco Division Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
- Sanchem, Inc., 1600 South Canal Street, Chicago, IL 60616
- Tioga Pipe & Supply Company, 2450 Wheatshaf Lane, Philadelphia, PA 19137
- PLAQUES—BRONZE—ALUMINUM**
- Duramax Metals, Inc., 2401 Wesley Street, Portsmouth, VA 23707
- PLASTICS—Marine Applications**
- Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231
- PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines**
- Alca Power Inc., 100 Orchard St., Auburn, N.Y. 13021
- 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 Alpha Diesel AS, DK-1400 Copenhagen K, Denmark
- Centrico, Inc., 100 Fairway Court, Northvale, NJ 07647
- Colt Industries' Fairbanks Morse Engine Division, Beloit, Wisc. 53511
- Combustion Engineering, Inc., Windsor, Connecticut 06095
- General Electric Co., Diesel Power Products, 2901 E. Lake Rd., Erie, PA 16531
- Kawasaki Heavy Industries, Ltd., 2-4-1 Hamamtsu-cho, Minato-ku, Tokyo, Japan
- Krupp Mak Diesels, Inc., 9701 West Higgins Road, Rosemont, IL 60018
- MTU of North America, Inc., 10450 Corporate Drive, Sugar Land, TX 77478
- Maritime Industries, Ltd., 6307 Laurel St., Burnaby, B.C. Canada V5B 3B3
- Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507
- Omnithruster Inc., 15418 Cornet Ave., Santa Fe Springs, CA 90670
- Oosterhuis Industries, Inc. (Marine Engineering, Inc.), P.O. Box 30587, New Orleans, LA 70190
- P.J. Plishner Marine, 2 Lake Avenue Ext., Danbury, CT 06810
- Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
- Propulsion Systems Inc., 21213 76th Ave., So., Kent, WA 98031
- Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166
- Skinner Engine Company, P.O. Box 1149, Erie, PA 16512
- Steamco Corporation, 1020 East 8th Street, Jacksonville, FL 32206
- Tacoma Boat Co./Escher Wyss, 1840 Marine View Dr., Tacoma, WA 98422
- Transamerica DeLaval Inc., Engine & Compressor Div., 550 85th Ave., Oakland, CA 94621
- Transamerica DeLaval, Inc., Turbine & Compressor Div., P.O. Box 8788, Trenton, N.J. 08650
- Turbine Specialties, Inc., P. O. Box 207, West State Street Road, Sallina, KS 67401
- Voith Schneider of America—U.S. Agent: Eli Sharprut, 347 Evelyn St., Paramis, N.J. 07652
- Waukesha Engine Division, Waukesha, WI 53187
- PUMPS—Repairs—Drives**
- Barco Corporation, 16 Bahama Circle, Tampa, FL 36606
- Penco Division Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
- Transamerica DeLaval, IMO Pump Division, P.O. Box 447, Monroe, NC 28110
- Worthington Group-McGraw Edison Co., 270 Sheffield Street, Mountainside, NJ 07092
- REFRIGERATION—Refrigerant Valves**
- Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
- Port Refrigeration Div., 157 Perry Street, New York, N.Y. 10014
- ROPE—Manila—Nylon—Hawfers—Fibers**
- American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431
- Atlantic Cordage Corp., 60 Grant Avenue, Carteret, NJ 07008
- Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110
- RUDDER ANGLE INDICATORS**
- Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
- Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
- Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
- Modular Systems, 164 Franklin Avenue, Rockaway, NJ 07866
- SAFETY EQUIPMENT**
- ACR Electronics, Inc., 3901 North 29th Avenue, Hollywood, FL 33020
- Datrex, 3795 N.W. 25th Street, Miami, FL 33142
- SANITATION DEVICES—Pollution Control**
- American United Marine Corp., 575 Madison Avenue, New York, NY 10022
- Argo Marine Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013
- Chapman Engineers (Omnipure Division), 6101 Southwest Freeway, Suite 100, Houston, TX 77057
- Effluent Technology Corporation, P.O. Box 2094, Tacoma, WA 98401
- Envirovac (Division of Dometic Inc.), 1260 Turret Drive, Rockford, IL 61111
- Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
- Marland Environmental Systems, Inc., N. Main Street, Walworth, WI 53184
- Microphor, Inc., P.O. Box 490, Willits, CA 95490
- Red Fox Industries, P.O. Drawer 640, New Iberia, LA 70560
- St. Louis Ship FAST Sewage Systems, 611 East Marceau St., St. Louis, Mo. 63111
- Somat Corporation, Pomeroy, PA 19367
- SCAFFOLDING EQUIPMENT—Work Platforms**
- Patent Scaffolding Co., 2125 Center Ave., Fort Lee, N.J. 07024
- SHACKLES**
- West Footscray Engineering Works P/L, 52 Cross Street, West Footscray, Melbourne, Victoria, 30 12, Australia
- SHAFT SEALS, REVOLUTION INDICATOR EQUIPMENT**
- Bird-Johnson Co., 100 Norfolk St., Walpole, MA 02081
- Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
- Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
- Penco Division-Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
- SHIPBREAKING—Salvage**
- The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202
- Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201
- SHIPBUILDING STEEL**
- Arma 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 Maestranz de la Armada, Prat 856, Piso 14, Castilla 150-V, Valparaiso, Chile, S.A.
- Astilleros Espanoles S.A., 17 Padilla, P.O. Box 815, Madrid, Spain
- Astilleros Unidos de Veracruz, S.A., San Juan de Ulua S.N., Apdo. Postal 647, Veracruz, Ver., Mexico
- Atlantic Marine Inc., P.O. Box 138 Ft. George Island, Jacksonville, FL 32226
- Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150
- Bay Shipbuilding Corporation, 605 North Third Avenue, Sturgeon Bay, WI 54235
- Bender Shipbuilding & Repair, P.O. Box 42, Mobile, AL 36601
- Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085
- Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004
- Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081
- Bludworth Bond Shipyard Inc., P.O. Box 5065, Houston, TX 77012
- Boeing Marine Systems, P.O. Box 3707, Mail Stop 14-11, Seattle, WA 98124
- Cantieri Navali Riuniti, Via Cipro, 11, 16100 Genova, Italy
- Carrington Slipways Pty, Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322
- China Shipbuilding Corp., c/o Allegra Transportation Supply Co., One Penn Plaza, Room 1606, New York, NY 10119
- Conrad Industries, P.O. Box 790, Morgan City, La. 70380
- Curacao Drydock Company Inc., 26 Broadway, Suite 741, New York, NY 10004
- Dorbyl Ltd., Military Road, 1 Industrial Sites, West Bank, 5201 East London Republic of South Africa
- Dravo Steelship Corp., R.4, Box 167, Pine Bluff, Ark. 71602
- FMC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208
- Galveston Shipbuilding Co., P.O. Drawer 2660, Galveston, TX 77553
- HBC Barge, Inc., Grant Building, Pittsburgh, PA 15219
- Halifax Industries Ltd., P.O. Box 1477, Halifax, Nova Scotia, Canada, B3K 5H7
- Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189
- Havre de Grace, Havre de Grace, Md.
- Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central Post Office, Kowloon, Hong Kong
- Hudson Shipbuilders, Inc., P.O. Box Q, Pascagoula, MS 39567
- Jeffboat, Inc., Jeffersonville, Ind. 47130
- Levingston Shipbuilding, P.O. Box 968, Orange, TX 77630
- Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
- McDermott Incorporated, 1010 Common Street, New Orleans, LA 70160
- MacGregor Land & Sea, Inc., 135 Dermody Street, Cranford, NJ 07016
- Marine Fabricators, P.O. Box 246, Green Cove Springs, FL 32043
- Mattson Shipyard Co., Inc., P.O. Box 645, Cohoes, New York 12047
- Midland Marine Corporation, One Pennsylvania Plaza, New York, NY 10001
- Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681
- Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655
- Nashville Bridge Company, P.O. Box 239, Nashville, TN 37202
- National Steel & Shipbuilding Corp., San Diego, Calif. 92112
- Newport News Shipbuilding & Dry Dock Co., 4101 Washington Ave., Newport News, Va. 23607
- O.A.R.N. (Officine Allestimento-Riprazioni Navi), P.O. Box 1395, Genoa, Italy 16100
- Paceco Inc. (A division of Fruehauf), West Seaway Access Road, Gulfport, MS 39501
- Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla. 33156
- Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767
- Progressive Shipbuilders & Fabricators, Inc., P.O. Box 9130, Houma, LA 70361
- Promet (PTE) Ltd., 27 Pandam Rd., Jurong Industrial Estate, Singapore 22
- Puerto Rico Drydock & Marine Terminals, Inc., P.O. Box 2209, San Juan, Puerto Rico 00903
- St. Louis Shipbuilding—Federal Barge, Inc., 611 East Marceau, St. Louis, Mo. 63111
- Savannah Shipyard Co., P.O. Box 787, Savannah, GA 31402
- Southwest Marine, Inc., P.O. Box 13308, San Diego, Ca 92113
- Sudaimport, 5 Kalyaevskaya, Moscow K-6, USSR
- Sun Ship Inc., Chester, PA 19013
- Swiftships Inc., P.O. Box 1908, Morgan City, LA 70380
- Tacoma Boatbuilding Co., Inc., 1840 Marine View Drive, Tacoma, WA 98422
- Tandano (Piacentini), Antartida Argentina 555 Darsena Norte, (1104) Buenos Aires Republica Argentina
- Thomas Marine Inc., 37 Bransford Street, Patchogue, NY 11772
- Thunderbolt Marine, Inc., P.O. Box 5628, Savannah, GA 31404
- Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004
- Total Transportation Systems Inc., 813 Forest Dr., Newport News, VA 23606
- Total Transportation Systems (International) A/S, Bjornegarden, P.O. Box 28, N5201 Oslo, Norway
- Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316
- Tug Barge Systems, Inc., subsidiary of Ingram Corp., 4100 One Shell Square, New Orleans, La. 70139
- Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087
- West Coast Salvage And Contracting, 2150 East Kent Avenue, Vancouver, B.C. V5P 2T2
- SHIPPING—PACKING**
- Candia Shipping (USA) Inc., One World Trade Center, Suite 1611, New York, NY 10048
- Crane Packing Co., 435 Regina Drive, Clarksburg, MD 20734
- SMOKE INDICATORS**
- Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928
- STUFFING BOXES**
- Hull & Cargo Surveyors, Inc., 16025 Johnson St., Middlefield, Ohio 44062
- SURVEYORS AND CONSULTANTS**
- Francis B. Crocco, Inc., P.O. Box 1411, San Juan, Puerto Rico 00903
- Hull & Cargo Surveyors, Inc., 99 John St., New York, NY 10038
- TANK CLEANING**
- Butterworth Systems Inc., 224 Park Ave., P.O. Box 352, Florham Park, N.J. 07932
- Environmental Chemicals, Inc., 487 Division Street, Boonton, NJ 07005
- Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
- Salwico, Inc., 5 Marine View Plaza, Hoboken, NJ 07030
- TANK LEVELING INDICATORS**
- Transamerica DeLaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062
- Vitronics, P.O. Box 42305, Houston, TX 77042
- Vu-Gage System, 150 E. 42nd St. (Room 910), New York, NY 10017
- TERMINALS—Oil-Transfer**
- Caicos Petroleum Services Div., Federal Chicago Corp., 2222 North Elston Avenue, Chicago, IL 60614
- TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.**
- Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002
- Chotin Transportation, Inc., 580 Walnut St., Cincinnati, Ohio 45202
- Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202
- Henry Gillen's Sons Lighterage, 21 West Main St., Oyster Bay, N.Y. 11771
- Great Lakes Towing Company, 1800 Terminal Tower, Cleveland, OH 44113
- James Hughes, Inc., 17 Battery Pl., New York, N.Y. 10004
- McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
- McDonough Marine Service, P.O. Box 26206, New Orleans, La.
- Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, N.Y. 10048
- Ocean Salvors Company, One World Trade Center, New York, NY 10048
- Smit International (Americas) Inc., 17 Battery Place, New York, NY 10004
- Suderman & Young Co., Inc., 918 World Trade Bldg., Houston, Texas 77002
- Turecamo Coastal & Harbor Towing Corp., One Edgewater St., Clifton, Staten Island, N.Y. 10305
- VALVES AND FITTINGS**
- American United Marine, 575 Madison Avenue, New York, NY 10022
- Dover Corporation, Norris Division, P.O. Box 1739, Tulsa, OK 74101
- Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207
- Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
- Parker-Hannifin Corporation, 17325 Euclid Avenue, Cleveland, OH 44112
- Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229
- Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928
- Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186
- Zidell Explorations, Inc. (Valve Division), 3121 S.W. Moody Avenue, Portland, OR 97201
- WATER PURIFIERS**
- Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559
- Specific Equipment Company, P.O. Box 55626, Houston, TX 77055
- WINCHES AND FAIRLEADERS**
- Beebe Brothers, Inc., 2724 6th Avenue South, Seattle, WA 98134
- Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134
- Smith-Berger Manufacturing Corporation, 3236 16th Avenue S.W., Seattle, WA 98134
- Superior-Lidgerwood-Mundy Corp., 1101 John Avenue, Superior, WI 54880
- WINDOWS**
- Kearfoot Marine Products, A Singer Co., 550 South Fulton Avenue, Mt. Vernon, N.Y. 10550
- 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
- WIRE ROPE—Slings**
- Arma Steel Corp., 703 Curtis St., Middletown, Ohio 45042
- Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004
- A.L. Don Company, Foot of Dock Street, Matawan, NJ 07747
- ZINC**
- Smith & McCracken, 153 Franklin St., New York, N.Y. 10013

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER/Engineering News. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all 24 issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR EN assumes no responsibility for errors. If you are interested in having your company listed in this Buyers Directory Section, contact John C. O'Malley at (212) 689-3266

U.S. SHIP CONSTRUCTION CONTRACTS

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

Builder	Owner	Total No.	Type	Hull Nos.	Est. GT (Each)	Est. DWT (Each)	Est. HP (Each)	Est. Total Cost (\$Mil.)
Atlantic Marine	Blue Lines	1	Cargo	354	200	—	D-350	0.6
Avondale Shipyards	American President Lines	3	Container	2329-31	40,500	30,300	D-43,200	330.0
	Suwanee River	1	Tug/Barge	2327-8	16,000	41,300	D-18,200	37.7
	Ogden Marine	2	Products	2318-19	25,000	42,000	D-15,000	100.0
	Corps of Engineers	1	Dredge	2322	9,900	8,000	D-10,400	67.5
	United States Trust	1	Dredge	2332	—	9,980	D-13,800	40.0
	Exxon Company U.S.A.	3	Products	—	26,000	43,000	D-17,000	300.0
Bath Iron Works	Corps of Engineers	1	Dredge*	402	6,000	—	D-7,000	65.0
	Falcon I Sea Transport	2	Tanker	404-5	24,000	33,900	D-14,720	142.0
	Calif. & Hawaii Sugar	1	Barge*	406	21,000	37,000	—	25.0
Bay Shipbuilding	Beker Shipping	1	Bulk Barge	728	20,000	41,000	—	NA
	Ocean Barge	1	Bulk Barge	730	17,500	33,000	—	NA
Bethlehem-Sparrows Point	Artemis Marine	1	Tug/Barge	4652	32,000	47,000	D-18,200	52.6
	First-Fifth Tug/Barge	5	Tug/Barge	4653-7	32,000	47,000	D-18,200	266.0
Equitable Shipyards	City of New York	1	Ferry	1714	3,000	4,200	D-7,800	15.0
General Dynamics-Quincy	Coastwise Shipping	4	Tank Barge	73-75, 82	—	27,000	—	57.0
	New England Electric	1	Collier	—	23,500	36,000	T-12,000	60.0
	Watermanship Steamship	1	RO/RO-Cont.*	85	18,500	23,500	T-32,000	61.0
Livingston Shipbuilding	Asco Falcon I	2	Bulk	752-3	23,500	36,000	D-14,800	80.0
National Steel & SB	Union Oil	1	Products	417	24,500	37,500	T-13,000	50.0
	American Tankships	2**	Products	419-20	24,500	37,500	D-11,400	102.0
	American Trading Trans.	3	Products	424-6	27,000	44,000	D-11,400	153.0
Norfolk Shipbuilding	Coordinated Caribbean	1	Barge	34	4,000	6,680	—	21.2
Southern Shipbuilding	Great Lakes Dredge	1	Dredge	120	3,300	4,400	D-3,000	NA
Sun Ship, Inc.	Waterman Steamship	2	RO/RO-Cont.	679-80	18,500	23,500	T-32,000	137.5
Upper Peninsula SB	State of Michigan	1/4	Tug(1)/ Barge(4)	001-5	5,400	10,000	D-8,000	35.5
Wiley Manufacturing	Texas Gulf	1	Dredge	108	2,800	3,800	DE	NA

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

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

Builder	Owner	Name	Type	Delivery
Alabama Maritime	Diamond M	Diamond M. Hunter	Semisub.	11/81
Mobile, Ala.	"	Diamond M. Eagle	"	4/82
	"	Diamond M. Falcon	"	1/83
Baker Marine	Huthnance Dig.	Charger I	Jackup	12/81
Ingleside, Texas	"	Charger II	"	12/81
	Magnum Marine	Mr. Demp	"	11/81
	Magnum Marine	Robert N. Haskin	"	5/82
	Magnum Marine	Robert W. Womack	"	6/82
	Pool Offshore	Pool Offshore Rig 54	"	12/81
	Savage Drilling	Ponca	"	8/82
Bethlehem Steel	Griffin-Alexander	Griffin-Alexander V	Jackup	5/82
Beaumont, Texas	"	Griffin-Alexander VII	"	9/82
	"	Griffin-Alexander VIII	"	3/82
	Houtech Energy	Houtech III	"	3/82
	"	Houtech IV	"	9/82
	Marine Drilling	J. Storm XVIII	"	12/82
	O & U Drilling	Nordrill II	"	1/82
	Teledyne	Movible 20	"	11/82
	Alfa Drilling	(unnamed)	"	1/83
Bethlehem Steel	Griffin-Alexander	Griffin-Alexander IV	Jackup	3/82
Sparrows Point, Md.	"	Griffin-Alexander VI	"	6/82
	Temple Drilling	Cheyenne	"	4/82
	Phoenix Seadrill	Phoenix Seadrill V	"	9/82
Chicago Bridge & Iron	Dixilyn-Field	DF-77	Submersible	6/82
Pascagoula, Miss	Blocker Drilling	(unnamed)	"	10/82
	"	(unnamed)	"	2/83
	Quarles Drilling	(unnamed)	"	4/83
General Dynamics	Bailey & Shannon Inc.	Bill Bailey	Jackup	12/81
Charleston, S.C.	"	Bob Warner	"	12/81
	"	Burr Rayburn	"	4/82
	"	Herb Williamson	"	6/82
	"	Mark Jones	"	1982
	"	Mr. Webster	"	1982
Gulfport Shipbuilding	Perfordora S.A.	(unnamed)	Jackup	5/82
Port Arthur, Texas				
Ingalls Shipbuilding	Transworld Drilling	Transworld 72	Submersible	12/81
Pascagoula, Miss.	"	Transworld 73	"	2/82
	Bonito Offshore	Bonito I	Jackup	7/82
	"	Bonito II	"	4/83
	Chiles Drilling	Yucatan	"	12/81
	Global Marine	Glomar Main Pass I	"	4/82
	"	Glomar Main Pass II	"	6/82
	"	Glomar Main Pass III	"	9/82
	"	Glomar Main Pass IV	"	12/82
	Huthnance Drilling	Vanguard I	"	12/81
	"	Vanguard II	"	10/82
	Keyes Offshore	Keyes 302	"	12/81
	"	Keyes 303	"	11/82
Livingston Shipbuilding	Noble Drilling	Ed Holt	Jackup	12/82
Orange, Texas	"	(unnamed)	"	12/82
	Compania Perforadora	(unnamed)	"	5/82
Marathon LeTourneau	Chiles Drilling	Seabee	Jackup	12/82
Brownsville, Texas	Global Marine	Glomar Adriatic V	"	8/83
	"	Glomar Adriatic VI	"	10/83
	"	Glomar Adriatic VII	"	1/84

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

Builder	Owner	Name	Type	Delivery
	Penrod Drilling	Penrod 86	"	12/81
	"	Penrod 88	"	3/82
	"	Penrod 90	"	6/82
	"	Penrod 98	"	4/84
	Rowan Drilling	(unnamed)	"	12/82
Marathon LeTourneau	Penrod Drilling	Penrod 87	Jackup	6/82
Vicksburg, Miss.	"	Penrod 89	"	9/82
	"	Penrod 91	"	1/83
	"	Penrod 99	"	4/84
	Rowan Drilling	Gilbert Rowe	"	11/81
	"	Cecil Provine	"	2/82
	Rowan Drilling	(unnamed)	Jackup	12/83
	"	(unnamed)	"	11/84
	"	(unnamed)	"	3/85
	"	(unnamed)	"	1985
McDermott Inc.	Blocker Int'l	(unnamed)	Drillship	9/82
Morgan City, La.	"	(unnamed)	"	9/82
Vemar Shipyard	Atwood Oceanics	Richmond	Submersible	12/81
Channelview, Texas	Cliffs Drilling	(unnamed)	Jackup	11/81
	"	(unnamed)	"	12/81
	Penrod Drilling	Penrod 201	Submersible	3/82
	"	Penrod 202	Submersible	7/82
	"	Penrod 203	Submersible	11/82
	Macan Offshore	(unnamed)	Jackup	4/82
	Goldrus Marine	(unnamed)	Submersible	3/83

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

Builder	Type	Navy Nos.	No.	Est. Contract Value, \$Mil.
Avondale Shipyards	Fleet Oiler	AO-178-9	2	\$144.0
	"	AO-180, 186	2	146.2
Bath Iron Works	Guided-Missile Frigate	FFG-21, 24, 26	3	178.2
	"	FFG-29, 32, 34	3	147.0
	"	FFG-36, 39, 42	3	209.9
	"	FFG-45, 47, 49	3	195.4
	"	FFG-50, 53, 59	3	—
Boeing Marine Systems	"	PHM-2	1	21.3
	Missile Patrol Hydrofoil	PHM-3-6	4	178.0
Derektor Shipyard	Med. End. Cutter*	WMEC 905-13	9	350.0
GD-Electric Boat	Attack Submarine	SSN-699	1	428.0
	"	SSN-702-4	3	1,302.9
	"	SSN-705-10	6	2,605.6
	"	SSN-719-20	2	—
	Trident Submarine	SSBN-727-9	3	699.4
	"	SSBN-730	1	354.5
	"	SSBN-731-2	2	699.0
	"	SSBN-733	1	401.0

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

Builder	Type	Navy Nos.	No.	Est. Contract Value, \$Mil.
Ingalls Shipbuilding	Missile Destroyer	DDG-996	1	350.0
	Destroyer	DD-997	1	231.0
	Aegis Missile Cruiser	CG-47	1	287.8
	" " "	CG-48	1	298.0
	" " "	CG-49, 50	2	667.1
Lockheed Shipbuilding	Sub. Tender	AS-41	1	209.5
	Dock Landing Ship	LSD-41	1	338.6
Marinette Marine	Fleet Ocean Tug	T-ATF-172	1	8.4
National Steel & SB	Destroyer Tender	AD-43-44	2	347.0
	Cable Repair Ship	T-ARC-7	1	107.0
Newport News SB	Attack Carrier	CVN-70-71	2	1,718.6
	Attack Submarine	SSN-712-15	4	388.0
	"	SSN-716-18	3	380.8
	"	SSN-721-3	3	675.0
Peterson Builders	Patrol Gunboats **	F-PGG-2-9	8	70.1
	Salvage Ship	ARS-50	1	54.5
Tacoma Boatbuilding	Missile Patrol Chaser **	F-PCG-1-4	4	52.5
	Med. End. Cutter*	WMEC-902-4	3	97.5
Todd-San Pedro	Guided Missile Frigate	FFG-19, 23, 25	3	151.0
	"	FFG-27, 30, 33	3	147.0
	"	FFG-38, 41, 43	3	214.8
	"	FFG-46	1	67.7
	"	FFG-51, 54	2	—
Todd-Seattle	Guided-Missile Frigate	FFG-22	1	50.4
	"	FFG-28, 31, 35	3	147.0
	"	FFG-37, 40	2	143.2
	"	FFG-44, 48	2	135.3
	"	FFG-52	1	—

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

**Bergeron Delivers 160-Foot Tank Barge
Tide Mar 34 To Tidewater Marine**



The 160-foot-long tank barge Tide Mar 34 can transport 10,500 barrels of oil and is also fitted to carry deck cargo.

Bergeron Marine, Inc., Port Bienville, Miss., recently delivered the Tide Mar 34, a 10,500-barrel-capacity tank barge, to Tidewater Marine Service, Inc. of New Orleans, La. Tidewater Marine is the marine subsidiary of Tidewater Inc.

The barge measures 160 feet long, 42 feet wide, 12 feet deep, and is scheduled for service in Trinidad where it will be used for testing oil lifted from wells in that country, Bergeron officials said.

Special features of the Tide Mar 34 include nine cargo tanks, a Roper positive displacement cargo pump powered by a Detroit Diesel engine, two Skagit mooring winches, and a closed gaging and venting system. The barge also has a wooden fendering system along each side for greater hull protection, an operator's house, and an electrical generating system for night lighting.

The Tide Mar 34 was designed with the main cargo pump and engine below deck. This, combined with a 1,000-pound per square foot allowable deck load, allows the vessel to be used for the carriage of deck cargo, in addition to fluids. It is classed by the American Bureau of Shipping and certified by the U.S. Coast Guard for ocean service. Bergeron Marine, Inc. is a subsidiary of

Bergeron Industries, Inc. of St. Bernard, La.



Twin Detroit Diesel 6-71 GM engines power the crewboat Matmar Drill III.

**Kings Craft Delivers Matmar Drill III,
Third Of Four Crewboats From Yard**

The 38-foot aluminum crewboat Matmar Drill III was delivered recently by Kings Craft, Inc., Florence, Ala., to Matagorda Marine Drilling Company of Corpus Christi, Texas. She is the third of four aluminum vessels built at the yard for the same owner.

All four boats are 38 feet long by 13-foot beam and 6-foot midship depth. The vessels are powered by twin Detroit Diesel 6-71 GM engines with MG-507 Twin Disc 2:1 ratio hydraulic gears. Propellers are 28-inch-diameter with 2-inch stainless-steel shafts. Two independent tanks provide

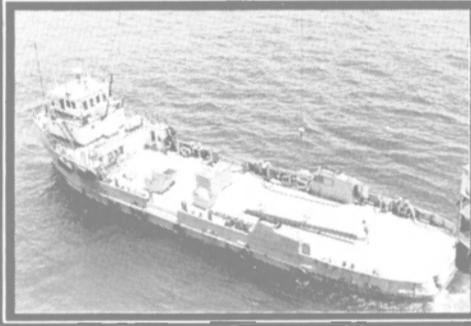
the vessels with over 300 gallons of fuel. The engines are keel cooled with Fernstrum #D848 keel coolers and have dry exhausts fitted in the lazarette with through transom pipes.

Controls are by Morse with hydraulic steering, and the radar is by Raytheon, Mark II 3400 Model. The boats can make speeds of 25 knots and carry 12 passengers.

Kings Craft has been building aluminum boats for more than a dozen years for the government, commercial, and overseas accounts in the 25 to 75-foot range, but is equipped to build them up to 110 feet in length.



AMERICAN GENERAL MARINE SERVICES

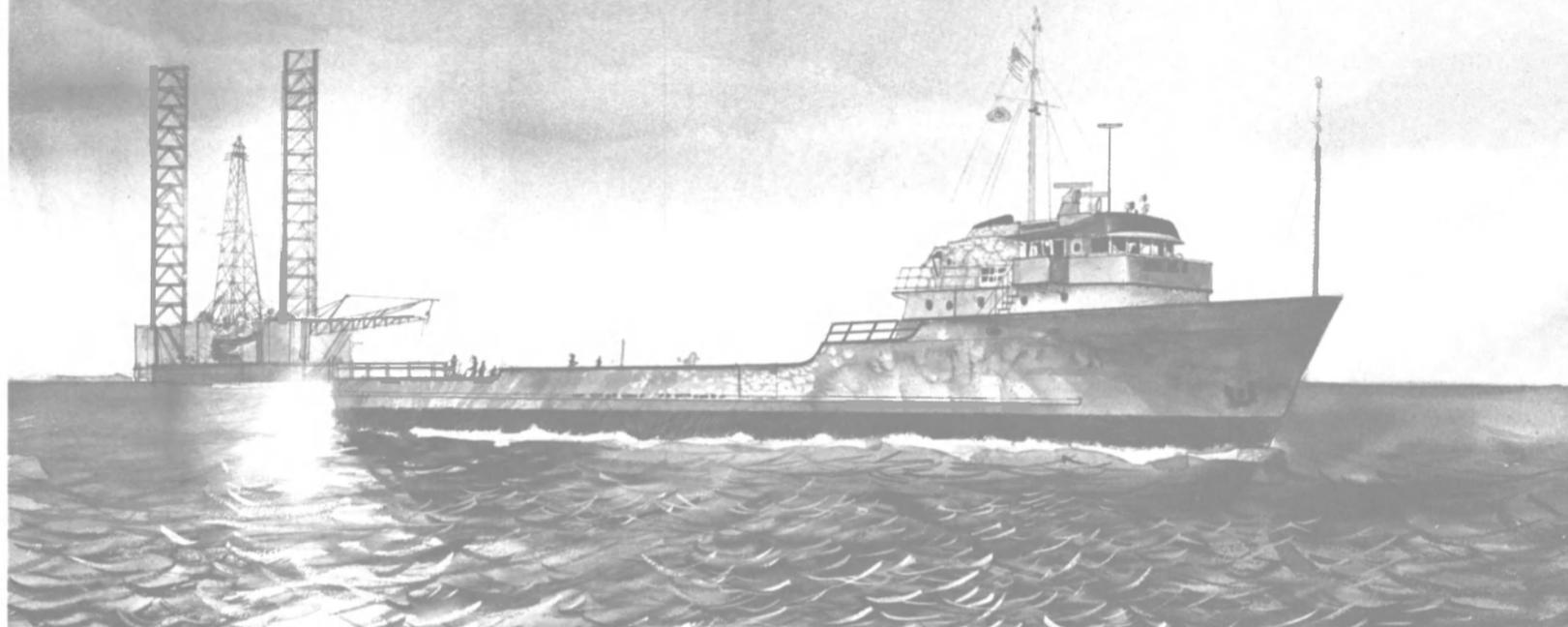


For Sale or Charter

ISS inspected supply vessel with new 5 yr. loadline certificate. Vessel currently working platform service in California with Cat D398's low hours/2-671 Generators/ Dual Radar Sperry Gyro/Sperry Mark 1C Autopilot/VHF & SSB/Loran C Sat Nav/ Vessel in perfect seagoing condition. Available for immediate Sale or Charter. Uninspected sister ship also.

American General Marine Services. Call Toll Free (800) 227-2497 or (415) 383-9500, TWX 910-384-5003. Write 101 Tiburon Blvd., Mill Valley, CA 94941.

Furuno Nav Aids



The Furuno navigators take you where you're going, then lead you home again. Precisely.

Radionavigation has come a long way since Furuno introduced its first loran receiver 20 years ago. Since then, we've developed loran C, sat nav, Omega, ADF's and FAX receivers.

Because no nav aid satisfies every need (sat nav is global but provides fixes hourly, loran covers coastal areas only), Furuno has taken the integrated "building block" approach. That is, you can purchase individual loran or sat nav, but just as easily purchase hybrid loran/sat nav or sat nav/Omega systems.

Position display, whether from loran or sat nav, is provided by the Furuno GD-102 electronic plotter. It displays present position, course line and other data on a bright 12" CRT. Area shown may be from 1.1 to over 10,000 miles² and grids are shown with digital lat/long readout. Up to 900 plotting points are addressable and 12 different event mark symbols displayed. The entire picture can be shifted in any direction. Digital readouts on the CRT show chart scale used and range/bearing to destination.

Loran C navigation employs the LC-200, a fully automatic receiver designed to exceed all USCG specs. It acquires and tracks master and all secondaries, displaying any two LOP's simultaneously. A memory switch freezes the display for position recording. Adding the LC-3000 processor/display unit converts loran TD's to direct lat/long readouts and gives distance & bearing to destination or 9 waypoints, course & speed, date and GMT.

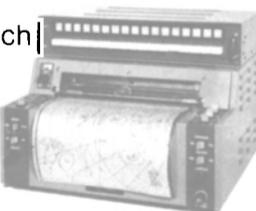
Sat Nav/Omega global positioning is provided by the FSN-20B. It computes and displays heading/distance to destination and 9 waypoints, last 5 fixes, establishes shortest routes, monitors great circle or rhumb line navigation, alarms if off course, notifies arrival and, with ship's log and gyro inputs,

continuously computes DR position.

Facsimile and ADF units are also available. FAXes with either 10 or 14" dry aluminized paper don't require venting and copies are usually sharp and clear. Units operate with various high quality SSB receivers, including Furuno's.

Furuno ADF's come in two basic versions: the FD-171 3-band unit with digital frequency readout, and the FDK-24 5-band unit with high precision CRT display. Both provide for additional crystal controlled spot frequencies.

For complete information on Furuno's broad line of Nav Aids, visit one of our more than 200 authorized dealer outlets, or simply return the coupon below.



FURUNO U.S.A., INC.

Furuno. Choice of the professionals.



1981 Furuno U.S.A., Inc.

Member

Furuno U.S.A., Inc. • Dept. M.R.-12
P.O. Box 2343, 271 Harbor Way, South San Francisco, CA 94080
 Please send literature on the unit(s) marked below, plus the name of my nearest authorized Furuno dealer.

Loran C Sat Nav/Omega Video Plotter
 Facsimile Direction Finders

Name _____

Address _____

City _____ State _____ Zip _____

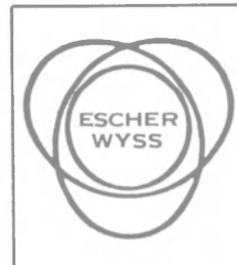
Type of vessel owned _____

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

U.S. Fishing vessels Work boats of America American yachts



TACOMA BOAT-ESCHER WYSS CP PROPELLERS



The SENSIBLE propeller for today's modern ships
ECONOMICAL, RUGGED, RELIABLE, PROVEN...
...the industry's choice...

AT TBC QUALITY IS AUTOMATIC...

from manufacturing...

PRECISION MACHINING AND BLADE
PROFILING ON P & W FOUR-AXIS
MACHINE CENTER WITH CNC CONTROL

IN-HOUSE CAPABILITY FOR
MACHINING SHAFTS UP TO
FIFTY-FIVE FEET IN LENGTH

to testing...

ASSURED RELIABILITY BEFORE DELIVERY-
TBC'S TEST STAND CAPABLE OF SPIN
TESTING PROPELLERS UP TO SIXTEEN
FEET IN DIAMETER AT RATED SPEED

to installation...

NINE FOOT DIAMETER PROPELLER
RATED AT 11,500 HORSEPOWER

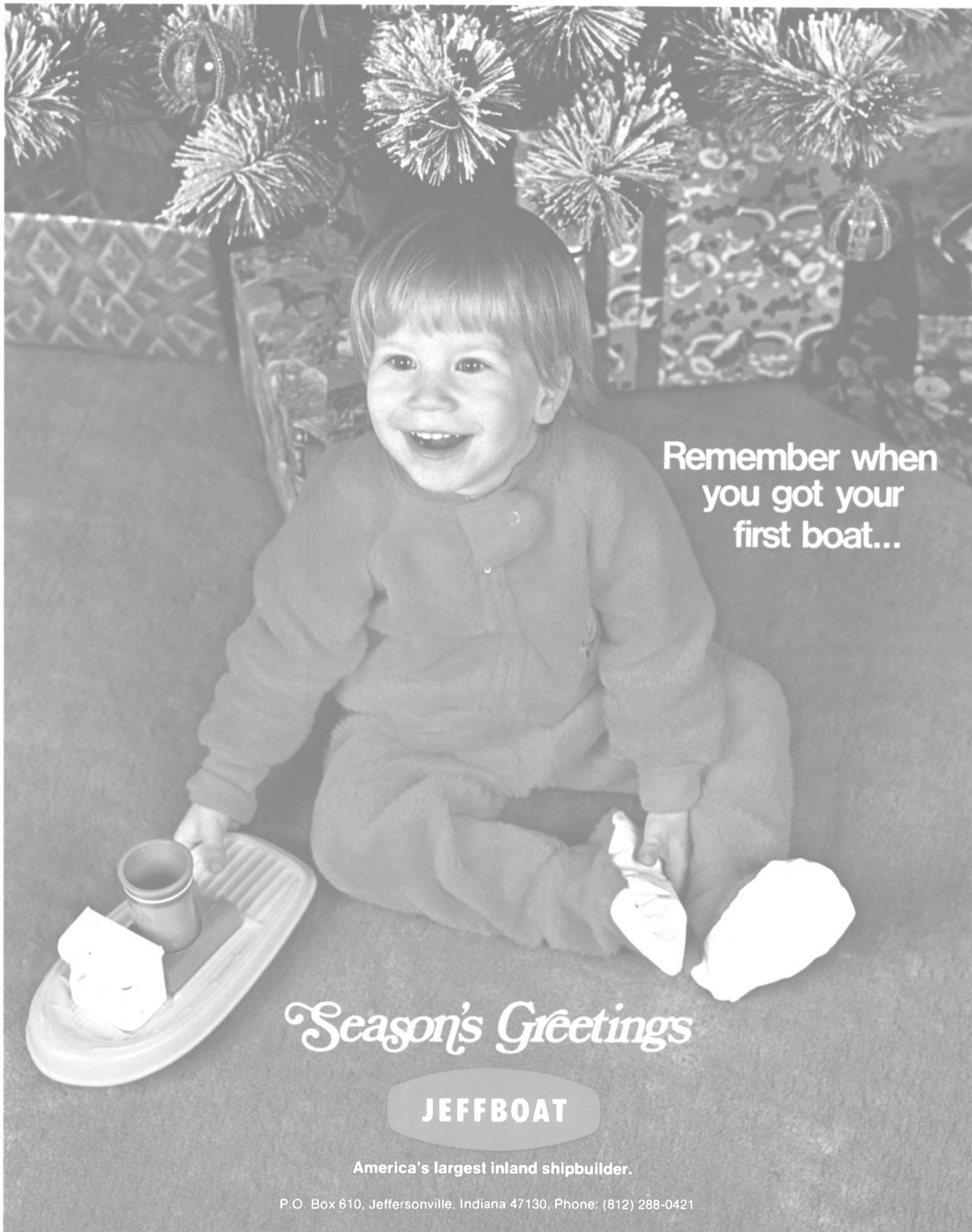
to service... OUR REPUTATION FOR QUALITY, EFFICIENT,
AND PROMPT SERVICE IS UNEQUALLED IN THE INDUSTRY.

let us quote your next application...for further details write or call:

LICENSOR
ESCHER WYSS G.M.B.H.
(MEMBER SULZER GROUP)

D-7980 Ravensburg
Postfach 1380
Tel. (0751) 831
Telex 0732901
Federal Republic of Germany

LICENSEE
TACOMA BOAT-ESCHER WYSS
1840 Marine View Drive
Tacoma, Washington 98422
Phone (206) 572-3600 Telex 32-7461



Remember when
you got your
first boat...

Season's Greetings

JEFFBOAT

America's largest inland shipbuilder.

P.O. Box 610, Jeffersonville, Indiana 47130, Phone: (812) 288-0421

Write 226 on Reader Service Card