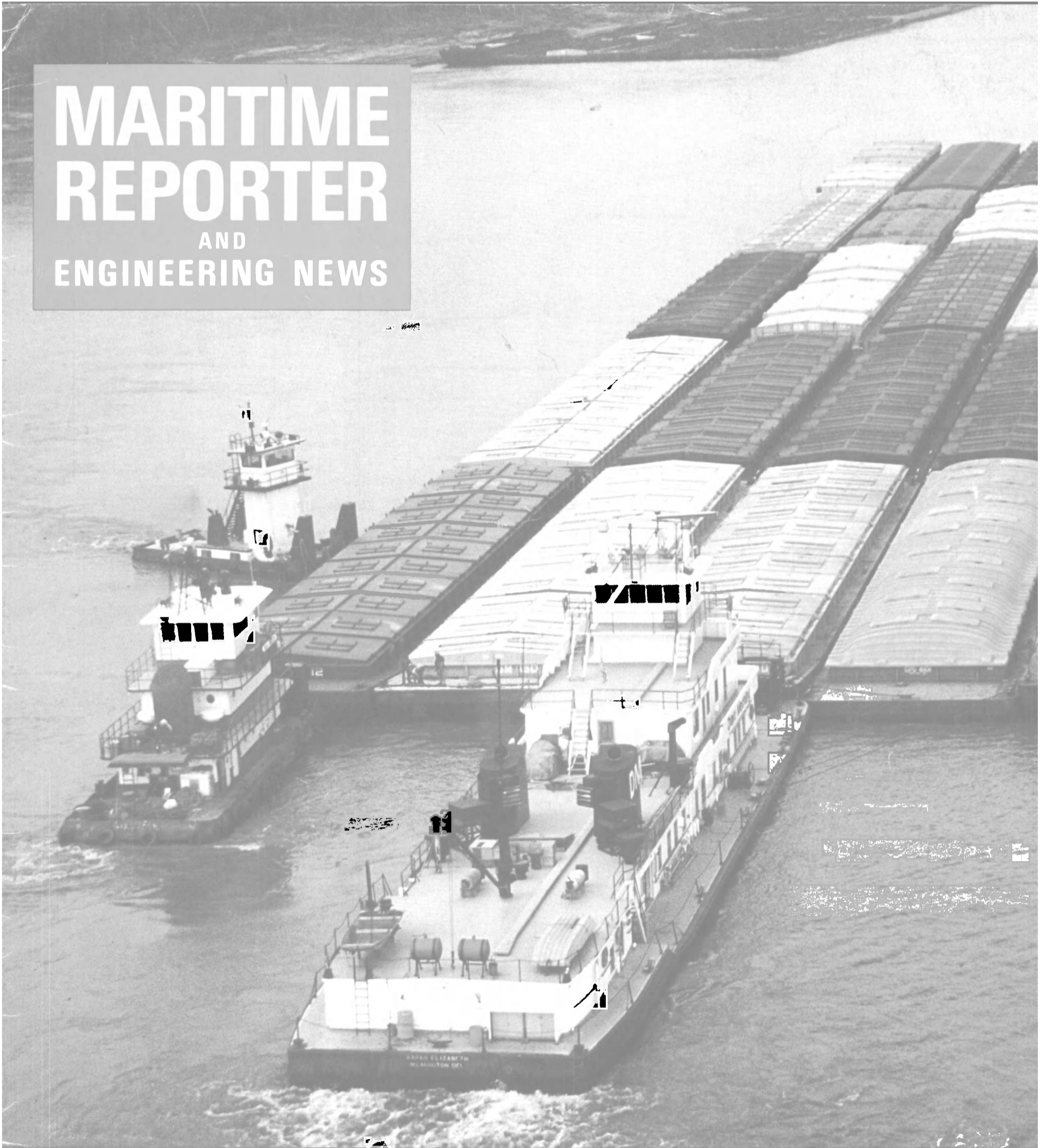


MARITIME REPORTER AND ENGINEERING NEWS



**U.S. Inland Waterways/
Great Lakes Yards Review**

AWO Perspective

(PAGE 4)

AUGUST 1, 1985

Bad news travels fast by satellite, which is a very good thing.

"Data we're receiving from your ship indicates that due to the weather out there, you should adjust heading and ballast as follows..."

"It'll put you into San Francisco ahead of schedule."



"Thanks for the info. If you can have the following parts waiting at the dock when we get there it'll really speed things up."



A conversation like this one, via satellite between a fleet operator and one of his ships halfway around the world, can take just seconds. And when you figure an average ship burns millions of dollars of fuel a year, these few seconds adjusting heading and ballast, relative to ship movement, can save thousands.

It's all possible with COMSAT Maritime Services via INMARSAT, a satellite communications network which keeps fleet operators in constant touch with their ships.

Through an inexpensive personal computer and an ordinary phone call or telex transmission, you can exchange weather information, market developments, optimum shipping routes and

parts availability. Instantly, reliably and privately.

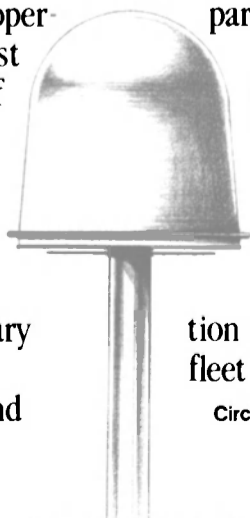
You can keep your finger on such vital signs as engine operation and fuel usage. Sensors can pick up malfunctions and relay them back even before the crew is aware there's a problem.

In a business where speed is often the competitive edge, every minute you can save makes a difference. Call COMSAT toll-free at 1-800-424-9152. We'll provide complete satellite communications information and help you manage your fleet more efficiently worldwide.

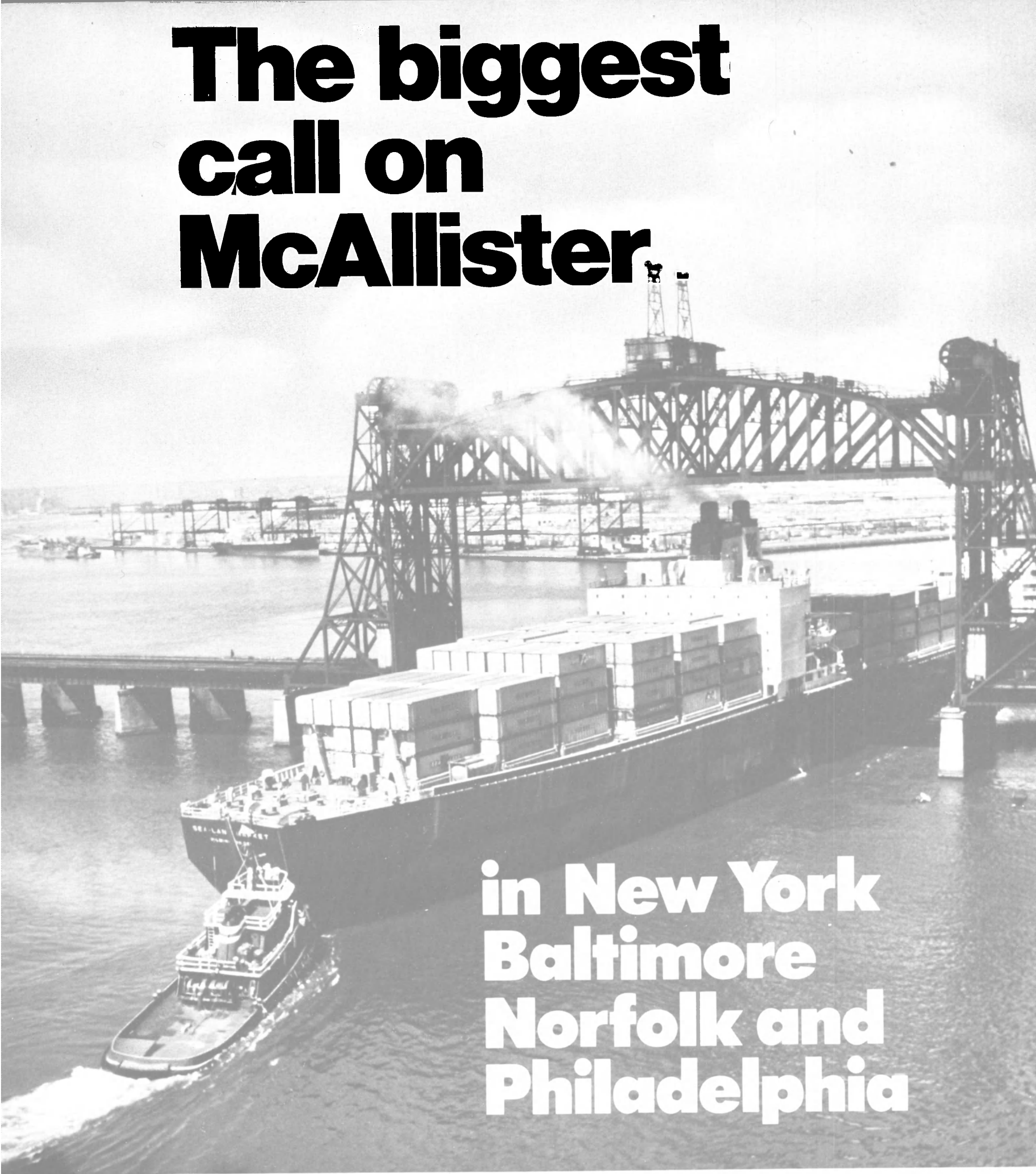
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Maritime Services

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Philadelphia (215) 922-6200 • San Juan (809) 724-2360

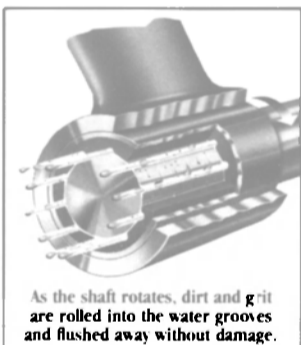
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WE CAN'T TELL YOU HOW MANY TIMES WE'VE BEEN SHAFTED.

Dependable **Cutless®** brand bearings from **BFGoodrich** are a marine tradition.

People stand in line to give us the shaft. But we don't mind. Because water-lubricated Cutless brand bearings made by BFGoodrich can take anything a rotating shaft can dish out. Over a wide range of pressures and speeds.

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As the shaft rotates, dirt and grit are rolled into the water grooves and flushed away without damage.



Water Groove Water wedge forms lubricating film Soft Rubber

pletely separates the rotating shaft from the bearing surface. Allowing specially formulated BFGoodrich resilient rubber grooves to channel the flow of water, flushing away dirt and grit.

Tough Cutless brand bearings are in demand for two very good reasons. They work. And they last. You'll find them in yards and marine stores around the world, in a full range of shaft diameters and load capacities. Isn't it time you gave them a whirl? Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309.

For a quick solution to a specific bearing problem, call 216-733-9955.

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ON THE COVER

Inland Waterways/
Great Lakes Yards
Review
PAGE 18

AWO Perspective
PAGE 12

Avondale Awarded Navy Contract For \$321 Million

Ogden Corporation announced recently that its subsidiary, Avondale Shipyards, Inc., has been awarded a contract to build a fleet oiler (TAO) for the US Navy with Navy options for two additional TAOs increasing the contract to \$321 million. The new work will follow four similar TAOs being constructed at Avondale.

Avondale's backlog potential now exceeds \$1.5 billion, including more than \$1 billion represented by firm commitments. The new contract, like most of the backlog, provides for escalation in the cost of labor and materials.

Automar III Awarded \$17.1-Million Contract

Automar III Corporation, Washington, D.C., was recently awarded a \$17,102,005 firm-fixed-price contract for the time charter of the M/V Ferncarrier, a Norwegian-flag heavy-lift, float on/float off (FO/FO) ship. The Ferncarrier will be changed to a U.S.-flag vessel prior to delivery to the Military Sealift Command.

The ship will be assigned to the Near Term Prepositioning Force, Diego Garcia, in the Indian Ocean. The contract period is 18 months beginning between January 27 and February 5, 1986. The delivery port is Charleston, S.C. Approximately 300 offers were solicited and eight bids were received. Contract funds would not have expired at the end of the current fiscal year. The Military Sealift Command, located in Washington, D.C., is the contracting activity (N00033-85-C-1007).

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AND
ENGINEERING NEWS

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Volume 47

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Houston Ship Repair Reactivates 40-Year-Old Hattiesburg Victory

Earlier this year, Houston Ship Repair, Inc. of Houston was awarded a \$1,175,000 fixed-price contract by the Maritime Administration to reactivate the cargo ship Hattiesburg Victory. The refurbished vessel sailed from Houston recently in service with the U.S. Navy's Military Sealift Command.

The successful activation of the vintage ship was possible because of the excellent condition of the hull, superstructure, and main machinery plant. This is attributed to the excellent care and maintenance provided while she lay in the Reserve Fleet.

The Hattiesburg Victory was built by California Shipbuilding, and upon delivery in 1945 became part of the National Defense Reserve Fleet at Beaumont, Texas. She saw limited service during Vietnam but since then has been in the Beaumont Reserve Fleet.

The work performed by Houston Ship included opening and returning to service main propulsion turbines and auxiliary turbines, rebricking both boilers and reworking all mounts and valves, opening and repairing all auxiliary equipment, installing and testing previously stowed cargo gear, installation of new communications and navigation equipment, and exterior painting.

\$4.9-Million Job Order Awarded To Boston Yard For Fleet Oiler Overhaul

Boston Shipyard Corporation, East Boston, Mass., was recently awarded a \$4,997,925 firm-fixed-price job order under a master ship repair agreement for drydocking, overhaul and voyage repair of the USNS Mississinewa, a Military Sealift Command fleet oiler. The work will be performed in East Boston. The contract performance period will run to approximately the first week of September. About 30 bids were solicited with eight offers received. The contract funds would not have expired at the end of the current fiscal year. The Military Sealift Command, Washington, D.C., is the contracting activity (N00033-85-H-0362).

Cybernet Introduces Multi-Scan, High-Tech VHF-FM Radiotelephone

Cybernet Marine Products, Kyocera International, Inc., Warren, N.J., has introduced the CTX-2060, an 89-channel VHF-FM radiotelephone that can scan all U.S. and international channels simultaneously, automatically switching to the channel in use. It can also be programmed to scan any of four pre-

selected 10-channel groups. In addition, any channel may be selected as priority on the dual watch feature, and the receiver will automatically switch to that channel whenever it is in use. The unit features coverage of all 89 U.S. and international VHF-FM channels, including 9 weather channels.

The new CTX-2060 has a large

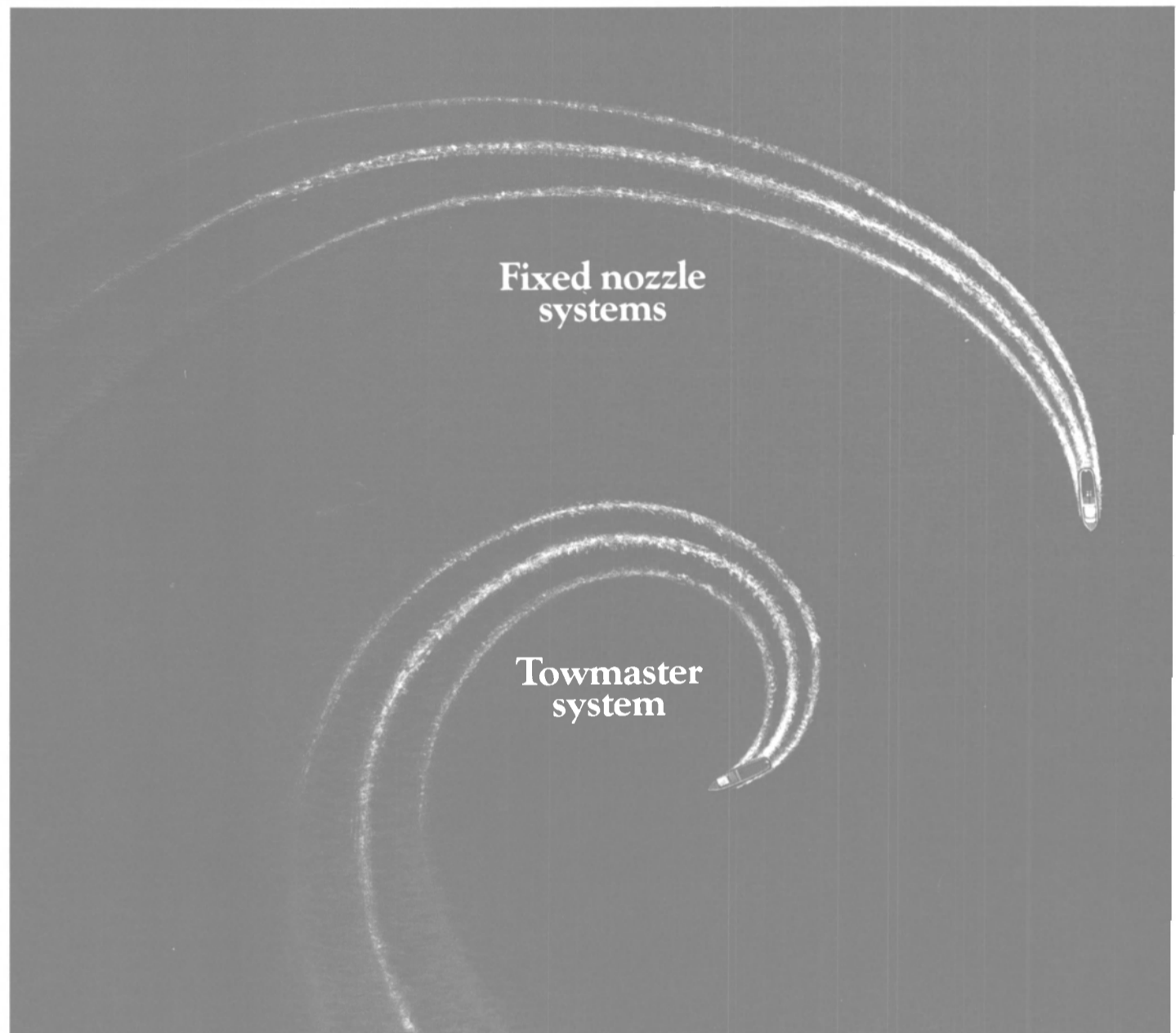
LCD digital channel and function readout, with excellent visibility day or night. The waterproof touchpad keyboard acknowledges input with a beep. There is a channel 16 emergency key, a 25 Watt-one watt switch and a U.S./International select key. A loudhailer and an intercom have also been added.

The style-matched case has a

unique snap-lock mounting bracket and a reversible front panel for table or overhead mounting. It is fully O-ring sealed and marinated for long service at sea.

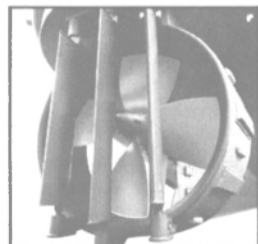
For a free brochure and literature on the new CTX-2060 VHF-FM radiotelephone offered by Cybernet,

Circle 45 on Reader Service Card



The Towmaster™ Nozzle/Rudder System can cut your turning circle by 70%

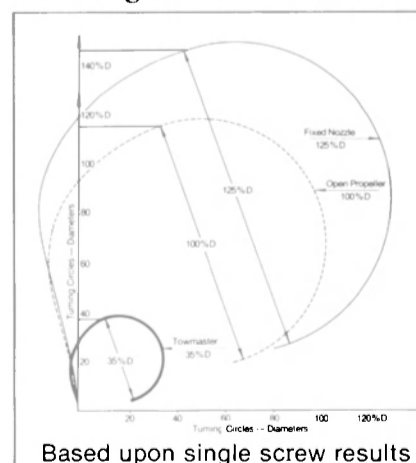
If your vessel has a ducted propeller system, Michigan Wheel's Towmaster Nozzle/Rudder System can give you a dramatic improvement in maneuverability and turning efficiency. In fact, if your vessel presently has a fixed nozzle system, tests prove the Towmaster Nozzle/Rudder System could reduce your turning circle by 70%. If yours is an open propeller system, you can expect an improvement of up to 60%.



The Towmaster can give you this kind of performance because of its unique triple-rudder design. Each rudder, by itself, produces a higher lift-to-drag ratio than conventional centerline rudders.

Together, they create a cascade effect that can allow 60° helm angles before rudder stall occurs.

Turning diameter test results



Based upon single screw results

Together, they create a cascade effect that can allow 60° helm angles before rudder stall occurs.

And because the Towmaster also reduces rudder torque and makes more efficient use of propeller thrust, vessel operation is easier and less fatiguing.

The Michigan Wheel Towmaster Nozzle/Rudder System. It's proven its ability to increase maneuverability and overall operating efficiency in over 100 applications. To learn how it can do the same for you, contact Michigan Wheel for complete facts and the name of the distributor nearest to you.

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Wheel
Corporation**

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Grand Rapids, MI 49507
Phone (616) 452-6941
Telex 6877077 MIMOT UW

Circle 154 on Reader Service Card

Number

MARITIME REPORTER DELIVERS YOUR ADVERTISING TO MORE MARINE BUYERS THAN ANY OTHER TWO MARINE

in 1985, MARITIME REPORTER's total circulation increased again to a record 24,305 copies every time.

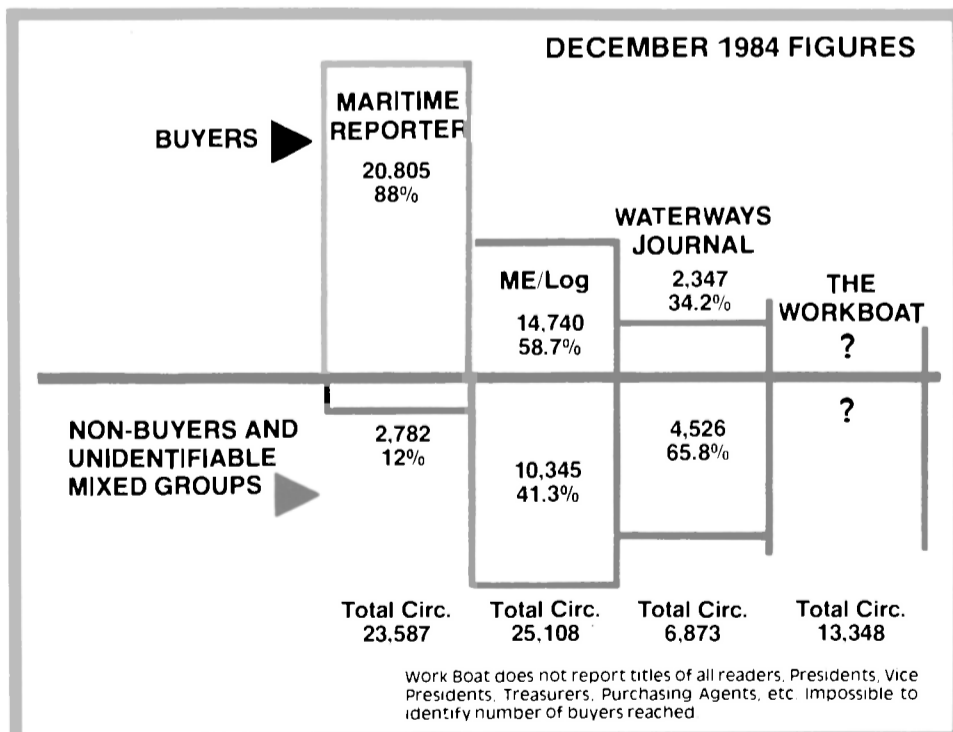
This entire increase consisted of only Buying influence Readers. MARITIME REPORTER now delivers your advertising to an unequalled 21,609 buying influence readers ... thousands more than any other Marine magazine in the

WORLD'S LARGEST CIRCULATION TO BUYERS

Now, MARITIME REPORTER delivers your advertising to 21,609 identifiable buyers ... more than any two of the other magazines combined.

RECORD SALES LEADERSHIP

MARITIME REPORTER produces more advertising sales than any other Marine magazine...two times as much as the number 2 magazine. Each figure listed for an individual advertiser by MARITIME REPORTER.



Paints/Corrosion Control	1,033	
	714	
	655	
Shipbuilding/Repair	2,147	Navigation
	613	
	570	
Deck Machinery/Cargo Handling	545	
	415	
	477	

NEW — June 1985 - MARITIME REPORTER's total circulation increased to 24,305 including a record 21,609 Buying Influence Readers.

THE ONLY COMPLETE COVERAGE OF MARINE BUYERS

... ONE



ORDER ALONE ADVERTISING TO MORE YOU CAN REACH USING MAGAZINES COMBINED.

entire world ... and, more than any other two marine magazines combined.

At one cost, MARITIME REPORTER alone delivers more buyers than you can reach using any other two marine magazines at two costs.

There is complete and unmatched coverage of your entire marine buying market ... for maximum marine sales in '85 and '86.

RESULTS FROM ADS

Higher sales leads than any other magazine ... three times more than the competition represents inquiries produced by MARITIME REPORTER in one year or less.

Diesel Engines

1,352
1,337
1,168

Navigation & Communications

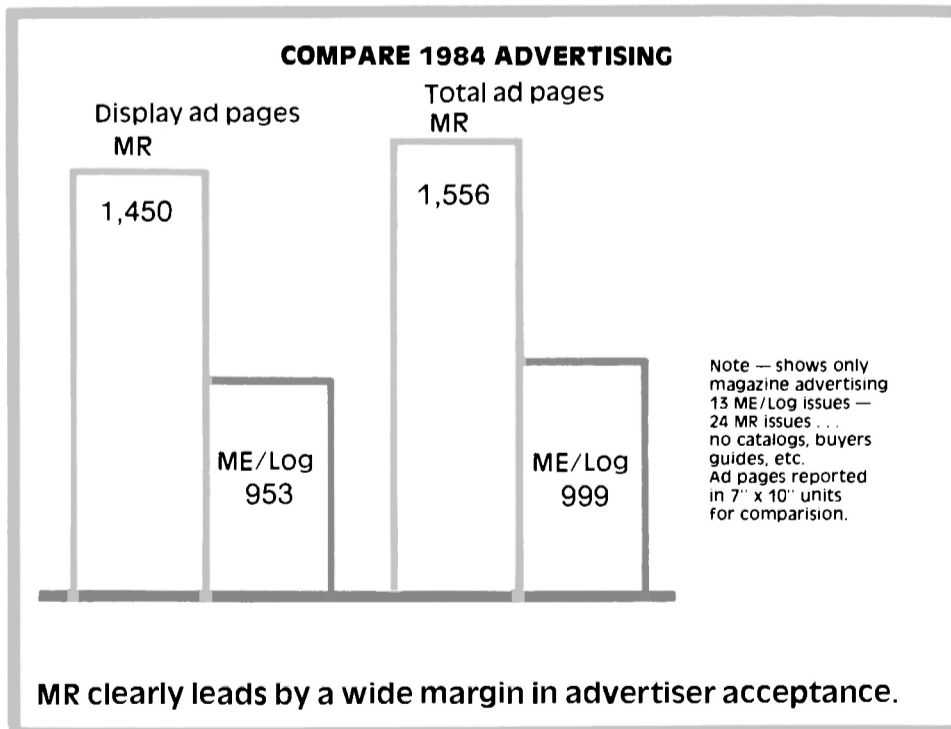
773
663
623

Oily Water Separators

936
751
459

THE ADVERTISING LEADER

In 1984, and for years, more media buyers placed more pages of advertising, for a larger number of advertisers, in MR than in No. 2 ME/Log.



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BECAUSE EVERY ISSUE
IS CURRENT



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AT MEETINGS & SHOWS

FOR MORE MARINE SALES IN '85

SEPTEMBER 1, 1985

Advertising * • **EXPOSHIP RIOMAR 85**
Closing Date—
August 9, 1985
Rio De Janeiro, Brasil
Oct 14-19

- **SHIFTLIFTING AND DRYDOCKING SYSTEMS—A Review**
- **PLUS**—A wealth of current marine business and technical information first—weeks before the slower monthlies

SEPTEMBER 15, 1985

Advertising * • **CORE '85**
Closing Date—
August 23, 1985
(Canadian Offshore Resources
Exposition)
Halifax, Nova Scotia—October 1-3

- **CANADIAN SHIPBUILDING & REPAIR YARDS—A Review**
- **PLUS**—A wealth of current marine business and technical information first—weeks before the slower monthlies

OCTOBER 1, 1985

Advertising * • **FISH EXPO '85**
Closing Date—
September 9, 1985
Seattle, Washington—October 16-19
Over 500 leading manufacturing companies exhibiting—and numerous seminars in all phases of deep sea fishing, including support machinery and equipment.

- **DECK MACHINERY AND CARGO HANDLING EQUIPMENT**
The latest technology and innovations in all types of deck machinery and systems from leading manufacturers worldwide.
- **PLUS**—A wealth of current business and technical information first—weeks before the slower monthlies.

OCTOBER 15, 1985

Advertising * • **EUROPORT '85 EXPOSITION**
Closing Date—
September 23, 1985
Amsterdam, Holland—November 12-16
One of the most prominent worldwide marine expositions and conferences.

- **PLUS**—A wealth of current marine business and technical information first—weeks before the slower monthlies.

NOVEMBER 1985

* BONUS
SHOW
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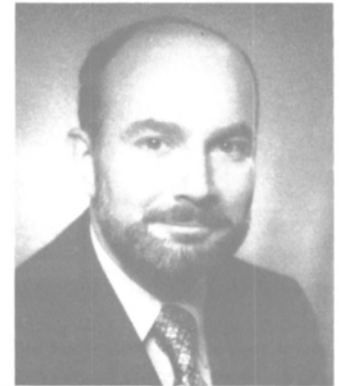
- * • **SNAME ANNUAL MEETING**
Society of Naval Architects and Marine Engineers
New York, New York—November 13-16
- **PLUS—FOUR ANNUAL SNAME INTERNATIONAL MARITIME EXPOSITION.**
The most important U.S. marine industry show. For the fourth year, the prestigious Society of Naval Architects and Marine Engineers is sponsoring a trade show in conjunction with its internationally renown annual meeting and technical symposium in New York City.

The November issue of MARITIME REPORTER will contain full details covering the entire technical program as well as the exhibition.

The November issue will receive extra bonus distribution at SNAME.

- **FAR EAST SHIPYARDS—A REVIEW**
- **PLUS**—A wealth of current marine business and technical information first—weeks before the slower monthlies.

Joseph Cuneo Elected
Board Chairman & CEO
Of J.J. Henry Co., Inc.



Joseph J. Cuneo

James J. Henry, founder and chairman of the executive committee of J.J. Henry Co., naval architects, recently announced the election of **Joseph J. Cuneo** as chairman of the board and chief executive officer of J.J. Henry Co., Inc.

Mr. Cuneo has more than 25 years of experience in the shipping field, and prior to joining J.J. Henry Co. he held the position as co-founder and president of Energy Transportation Corporation, operators of the world's largest liquefied natural gas carrier fleet. Mr. Cuneo is a graduate of Webb Institute of Naval Architecture and received his MBA degree at the Harvard Business School. He is a member of the board of trustees of Webb, a member of the board of managers and the technical Committee of the American Bureau of Shipping, and The Society of Naval Architects and Marine Engineers.

SNAME Ship Production Symposium Scheduled For September 11-13

The 1985 Ship Production Symposium sponsored by the Ship Production Committee of The Society of Naval Architects and Marine Engineers will be held at the Hyatt Regency Hotel in Long Beach, Calif., September 11-13. The symposium is part of SNAME's National Shipbuilding Research Program, which has the theme, "Moving Ahead with Implementation of Advanced Technology."

Session topics will include facilities and environmental effects, surface preparation and painting, education and training, design/production integration, standards and specifications, outfitting and production aids, navy ship production, and others.

For further information or to register contact **Wendy Barhydt**, NSRP Symposium manager, University of Michigan Transportation Research Institute, 2901 Baxter Road, Ann Arbor, MI 48109. Registration fee includes a copy of the proceedings and luncheon tickets for September 11 and 12.

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- **World's Largest Requested Total Circulation—100%**
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- **Largest U.S. Circulation to Buyers**
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- **Produces Largest Number of Sales Leads**

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Maritime Reporter/Engineering News

Pfeiffer And Military Sealift Command To Receive AOTOS Awards

The 1985 Admiral of the Ocean Sea Award (AOTOS), which is to be presented during the AOTOS dinner at the New York Hilton in New York City on September 27, 1985, will be presented to **Robert J. Pfeiffer**, chairman and chief executive officer of Matson Navigation Company, Inc., and to the U.S. Navy's Military Sealift Command. The award marks the first time in its 15-year history that the AOTOS, the most prestigious award in the American shipping industry, has been presented to two honorees. The AOTOS is presented by United Seamen's Service on behalf of maritime labor, management and government.

Mr. Pfeiffer, who is also chairman and chief executive officer of Alexander and Baldwin, Inc., parent company of Matson Navigation, is being honored for his leadership of the ocean carrier, a prime innovator in the Pacific trades, which is celebrating more than 100 years in the American shipping business.

The Military Sealift Command (MSC), which provides the strategic sealift to sustain U.S. military forces overseas, was selected because of its role in supporting U.S. shipping and in recognition of the importance of



Robert J. Pfeiffer

sealift for our national defense. MSC has been an important source of support for USS as well.

Proceeds from the AOTOS dinner support USS's service abroad for merchant seamen. Previous AOTOS winners have come from government, labor and management sectors. Some 800 members of the maritime community are expected to attend.

Information on the AOTOS dinner is available from USS headquarters at Suite 1365, One World Trade Center, New York, N.Y. 10048, (212) 775-1033, or from **Barbara Spector Yeninas**, AOTOS Coordinator, at (201) 226-8580.

Great Lakes International To Spend Over \$30 Million On Dredge —Bids To Be Taken On Another

The board of directors of Great Lakes International, Inc. recently approved expenditures of approximately \$30 million for construction of the world's largest combination dipper/clamshell dredge and attendant dump barges.

W.L. Colnon, president and chief executive officer of Great Lakes, also announced that North American Trailing Company (NATCO), a 75-percent-owned joint venture, has completed feasibility studies and engineering design, and will soon be taking bids on a 7,200-cubic-yard self-propelled hopper dredge. This vessel will prove very effective in construction and maintenance of the increased entrance channels resulting from deepening of the country's ports.

The commitments to the future are the culmination of a seven-year development program in anticipation of enactment of deep port construction by the U.S. Congress.

The new combination dipper/clamshell dredge will replace the company's present dipper dredge capability that has an average age of 50 years.

Contracts have been signed with Harnischfeger Corporation, Milwaukee, Wis., and Bay Shipbuilding Corporation, Sturgeon Bay, Wis., for construction of the combination dipper/clamshell dredge and the dump barges.

The dredge will operate with either a 50-cubic-yard clamshell bucket or a 27-cubic-yard dipper bucket. Both figures are about twice the size of those currently in existence. The dump barges will have a 6,000-cubic-yard capacity.

New Hatch Introduced By West Coast Manly Yard —Literature Available

West Coast Manly Shipyard, Division of RivTow Industries Ltd., recently announced the latest in their line of marine hatches. Long known for producing fine marine closures, this latest of escape hatches has been approved by ABS, Lloyd's and CSI.

Designed specifically for those heavy wear areas where both strength and watertight integrity are critical (car decks, freight areas, etc.), this all-steel hatch offers a flush watertight surface.

Model H-10-FS features stainless steel springs and a bronze hand wheel and dogging mechanism.

For further information and free literature from West Coast Manly Shipyard,

Circle 61 on Reader Service Card

Chesterton Offers Free Fluid Leakage Calculator To Maintenance Engineers

A fluid leakage calculator dial is being offered to maintenance engineers by the A.W. Chesterton Co., Stoneham, Mass. The calculator helps figure annual loss from leaks in pumps and other liquid handling equipment.

To use the calculator, just count the number of drops per minute and set the calculator to find the number of gallons per year. Also read the comparative efficiency of different sealing methods to find ways of reducing product loss and needless adding of diluents through flushing. Plant maintenance engineers wishing to obtain a free fluid leakage calculator should,

Circle 56 on Reader Service Card

The Experts In Protecting Your Investment

Contact Engelhard Systems today to find out how we can save you money.

For years Engelhard has been meeting the challenges of the sea head on. Our Capac[®] system provides reliable impressed current corrosion protection for thousands of vessels from tugs to VLCC's as well as for offshore rigs.

The Chloropac[®] system, with its efficient modular design, provides continuous-fouling control through electrolytic hypochlorite generation from sea water.

CAPAC[®]

(Cathodic Protection Automatically Controlled)

Extends period between dry dockings Lowest installed cost Reduces fuel costs Less painting and hull maintenance Simple operation controls corrosion even under varying hull coatings, speeds and water conditions Maritime Regulatory Agency and Classification Society approval Suitable for any type vessel or offshore rig Backed by Engelhard . . .

the only company in the world to design and manufacture components, and refine its own precious metals for anodes The permanent answer to short term sacrificial anodes and special coatings.

CHLOROPAC[®]

Controls marine fouling with treatment of less than 1/2 part per million hypochlorite Eliminates eroding heat exchangers Water boxes and sea chests stay clean Surface condensers maintain heat transfer rate and reduce fuel consumption Keeps piping clean reducing fouling induced erosion corrosion 5-year express warranted cell life.

For more information on how Engelhard can save you money, write or call Engelhard Corporation, Capac/Chloropac Products, 2655 U.S. Route 22, UNION, NJ 07083, (201) 964-2766 Telex: 13-83246 Telefax: (201) 686-8613. SINGAPORE: Telex: 23361 Tel.: 336-8059, HONG KONG: Telex: 44787, Tel.: 3-650301/6, SAN LEANDRO, CA: Telex: 172-086, Tel.: (415) 638-6663, NEWPORT GWENT, UK: Telex: 497870, Tel.: 0291 423833, Telefax: 291-423836.

ENGELHARD

Circle 214 on Reader Service Card

COAST GUARD USER TAXES: UNTIMELY AND UNWISE



James H. Sanborn

*The following is an excerpt from the June 27, 1985 testimony of **James H. Sanborn**, chairman of the board of the American Waterways Operators, Inc. and vice president-Operations, Sonat Marine, Inc., before the House Subcommittee on Coast Guard and Navigation on the subject of H.R. 1936, Coast Guard User Tax legislation.*

I appreciate this opportunity to appear before you on behalf of AWO to testify on H.R. 1936, legislation to impose annual Coast Guard user fees of \$476 million. The Coast Guard continues to feel the effects of budget constraints and the addition of new statutory responsibilities. However, it appears that the driving force behind this hearing is the desire to reduce federal expenditures, rather than on the merits of this issue. As every member is well aware, this committee has on several occasions rejected imposition of Coast Guard user fees. We hope that, despite the pressure to act quickly to raise revenues, you will take a comprehensive look at the consequences of Coast Guard user fees and the alternative course of cutting costs.

As members of the maritime com-

munity, we are appreciative of the committee's continued efforts to help and support American-flag operators. This is particularly important given the desperate economic plight that exists in all segments of the industry. We submit that the best way to help this industry is not to burden it with more taxes. Whatever the term—user fee, charge or toll—these costs are in reality added taxes on our industry.

I hope the subcommittee will keep in mind that the Administration is seeking to greatly increase user taxes for inland waterway operators as well as impose significant new taxes for the use of our nation's ports and harbors. Recently, the Senate leadership and **David Stockman** shook hands over such an agreement. The cumulative impact is staggering. I will address the specific issue of Coast Guard user fees but it is, I believe, imperative to note that all these proposed new revenue sources are aimed at U.S.-flag operators and should be viewed as a whole.

In 1981 and 1982, AWO testified before this subcommittee on the issue of Coast Guard user fees. After reviewing their comments, I have several observations: AWO's recommendations are as valid today as they were in 1981-82; there is a general reluctance to implement these recommendations as a way to re-

duce costs; the entire U.S.-flag merchant marine, including shallow-draft coastal and inland operators, has continued to shrink in number, and the economic plight of our industry has steadily worsened over the past four years, with no relief in sight.

The Coast Guard is a military and humanitarian service, operating for the common good, whose charter also includes enforcement of marine safety and protection statutes and regulations.

It is clear that so-called "indirect services"—i.e., vessel traffic services and aids to navigation—do not solely benefit commercial vessels. These functions also provide significant benefit to our nation's ports, recreation areas, fish and wildlife enhancement, water quality—to the American public as a whole. The "public benefit" ripple effect of Coast Guard responsibilities is not confined exclusively to indirect services. For example, icebreaking—a "direct service" according to the Administration—provides benefit to a wider universe . . . just ask the residents of areas that my company supplies with home heating oil in the winter.

As to direct charges, which are contemplated in the House and Senate budget resolutions, commercial vessel operators are being asked to reimburse the Coast Guard for functions performed as a result of statutorily-mandated requirements. The responsibility for enforcement of these statutes has been given by Congress to the Coast Guard. In response to that Congressional mandate, the agency performs a governmental function and has promulgated rules and regulations with which we must comply.

Compliance with these requirements is already costly to our industry; it is inequitable to ask commercial vessel operators, deep in the midst of an economic depression, to bear the added financial burden of reimbursing the Coast Guard for performing its statutorily-mandated duties. These requirements were promulgated for the public good and are clearly not benefits conferred upon the industry; we oppose paying for these so-called services in the form of Coast Guard user taxes.

Furthermore, because of the Coast Guard's multi-mission function, there are numerous costs inherent in each Coast Guard "civilian" activity that would not be present if private industry was performing that activity, unencumbered by the military aspect of Coast Guard operations.

And, because the agency's budget is structured to respond to the Congressional authorization and appropriations process, it cannot accurately identify the direct costs associated with performing a specific function with respect to each segment of the maritime industry.

The industry is in the fourth year of a severe depression that shows no sign of diminishing. All executives of barge companies can readily identify with the need to respond to budget deficits. There are two avenues which can be taken: raise revenues or reduce costs. The Coast Guard is in the same "market" that we are. Our industry cannot raise revenues because the market will not accept higher rates. That simply means we are not in a position to pass on increased costs to our customers. The prudent operator has but one option: reduce his costs to try to preserve his operating margin.

Some of us have had success. We have reduced staff sharply and work smarter. We prioritize our time to work on only those things that are important. We reduce our expenditures wherever we can, without affecting the safety of our operations or the quality of our service.

We recommend that the Congress exercise the same prudent business approach that private industry has been forced to adopt by asking the Coast Guard to reduce their operating costs, and transfer additional functions to the private sector to allow a reduction in personnel. The Coast Guard already has delegated the responsibility for performing certain functions to the American Bureau of Shipping (ABS), a private classification society. ABS performs these duties efficiently and cost-effectively because they are able to maintain lower overhead costs. Further, it runs as a business, indepen-

(continued on page 14)

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AWO Perspective

(continued)

dent from the federal political process and budgetary morass. Such action would reduce the government's cost burden without the need to impose additional taxes on the industry for the inflated costs of Coast Guard functions.

Before proceeding to enact user taxes, Congress must first accurately

ly identify the range of beneficiaries to enable a distinction between government activities undertaken as a general public service and activities with more selective benefits.

In attempting to identify the beneficiaries of Coast Guard services, it is readily apparent that the vast majority of its functions have a broad range of beneficiaries. This is true of its regulatory functions as well, functions which are performed for the public good in response to statutory requirements.

Because of the complexity of the Coast Guard's budget and the difficulty of allocating costs to specific user groups, AWO believes it will prove impossible to equitably and accurately determine the true cost of performing that function for each user group. Nor, for reasons stated earlier, could that cost be competitive with the private sector. Congress should direct the Coast Guard to identify those areas where greater civilianization, including contracting out, is feasible.

We cannot reconcile logically or philosophically the Government charging a private industry for work performed by a branch of our armed forces. Our individual and corporate tax dollars are already being collected and appropriated for military expenditures. However, should the Coast Guard be permitted to charge for these functions, then the industry upon which the taxes would be imposed must be allowed to assess the value of each function. They must also be allowed to have a say in the degree of service and how it may best be performed in the most cost-effective manner.

Without exaggeration, H.R. 1936 would have a severe economic impact on the barge and towing industry. At a minimum, the inland segment of our industry would pay \$57 million in indirect fees, with an indeterminate additional amount for direct fees. This is on top of the inland waterway user tax already being paid and which will automatically escalate by 25 percent on October 1, 1985. The coastal barge and tug industry would pay dearly under H.R. 1936, although from the information provided by the Coast Guard we cannot accurately estimate the total cost. One coastal member, however, has determined his company would pay an added \$1,000,000 annually under H.R. 1936.

As I said earlier, the industry is in a deep economic depression. Arthur Andersen & Co. surveyed 15 of the largest inland barge companies from 1980 to the present. In 1980, these companies earned \$120 million before tax on just over \$1 billion of revenue. In 1982, the situation re-

bankrupt, with a similar number expected to shut down operations this year. In other words, one in five waterway companies or about 20 percent of the industry will have gone out of business in just two years!

Enactment of H.R. 1936 would, we believe, significantly reduce the Coast Guard's effectiveness in both its military and civilian roles. Additionally, the relationship between the maritime community and the Coast Guard would deteriorate, becoming increasingly adversarial. Would our industry have to pay a tax for the Coast Guard's involvement in the Towing Safety Advisory Committee?

Hanjin Orders Six Container Ships From Hitachi Zosen And Daewoo

South Korea's Hanjin Containers Line recently signed new building contracts for six container ships, three to be built at Hitachi Zosen and three at Daewoo's Okpo yard.

The boxships ordered from Hitachi Zosen are scheduled to be delivered in the first half of 1986 and those ordered from Daewoo will be delivered in the second half of the same year.

A Hanjin official said the contracts had been signed on credit terms, but he refused to reveal the contract value. He said that the boxships would be put into the Far East-USEC service after delivery.

With the contract, Hanjin Containers has become the first Korean shipowner to order vessels from a foreign yard since the Korean Government allowed import of new ships last November. Hitachi Zosen is said to have offered Hanjin comparatively favorable financing in order to secure the project.

General Electric To Supply Machinery Control System For Navy Destroyer Burke —Literature Available

General Electric Company has been chosen to provide the machinery control system for the first of the U.S. Navy's new Arleigh Burke Class guided missile destroyer (DDG-51).

Under this contract, GE's Simulation and Control Systems Department in Daytona Beach, Fla., will design and produce a control system for the first ship and a second set of controls to be installed in the engineering test facility for qualification testing. The systems will be delivered in 1987 to Bath Iron Works in

While the \$200+ billion budget deficit would theoretically be reduced by \$476 million annually, the losses to the Treasury in tax dollars contributed by the affected industries and their employees will surely exceed that amount.

The Coast Guard can reduce its costs as our industry has done and continues to do. We would be pleased to work with you and your colleagues and the Coast Guard to assist in this effort. We urge you to look toward cost savings, Mr. Chairman, and resist the pressure to hastily enact Coast Guard user taxes.

will be the first to employ Navy standard hardware and software, including the AN/UYK-44 computer and standard electronic modules. The control consoles will utilize both dedicated instruments and plasma displays, and will meet Navy requirements for shock, vibration, and electro-magnetic susceptibility.

For free literature on GE control systems,

Circle 82 on Reader Service Card

Rockwell Awarded \$8.7-Million Increment For Modification Kits

Rockwell International Corporation, Collins Communications Systems Division, Richardson, Texas, was recently awarded an \$8,725,391 increment to convert a letter into a fixed-price contract for 137 modification kits to improve Very Low Frequency (VLF) communications on EC-130 aircraft and selected submarines. The work, which will be performed in both Richardson (70 percent) and Santa Ana, Calif. (30 percent), is expected to be completed in February 1989. Contract funds would not have expired at the end of the current fiscal year. The Naval Air Sea Systems Command, Washington, D.C., is the contracting activity. (N00019-84-C-0072).

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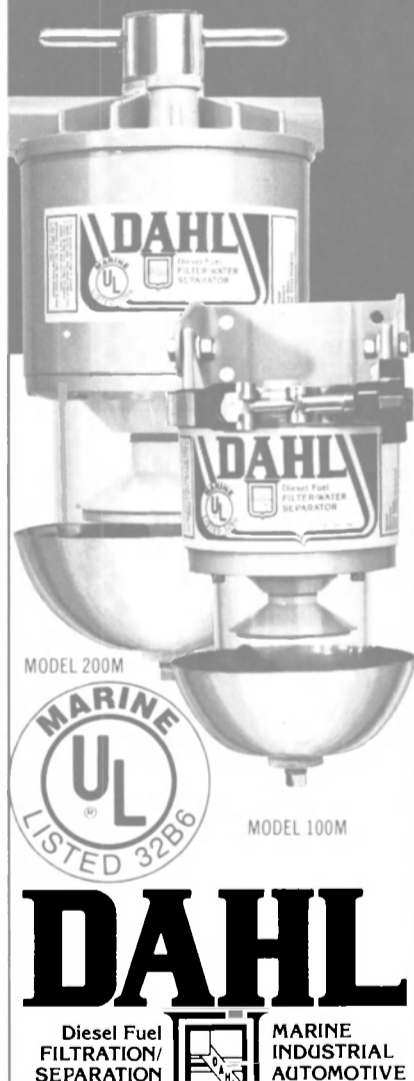
and SOLITECH electronic controls for the industrial, space and marine heating market in the U.S. and abroad.

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NASSCO Announces Three Key Executive Appointments



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bankrupt, with a similar number expected to shut down operations this year. In other words, one in five waterway companies or about 20 percent of the industry will have gone out of business in just two years!

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The Navy's plans now call for 29 ships of the Burke Class through 1992, with a potential for as many as 60 ships through the year 2000. Production is expected to reach five per year starting in 1988.

The GE control system design

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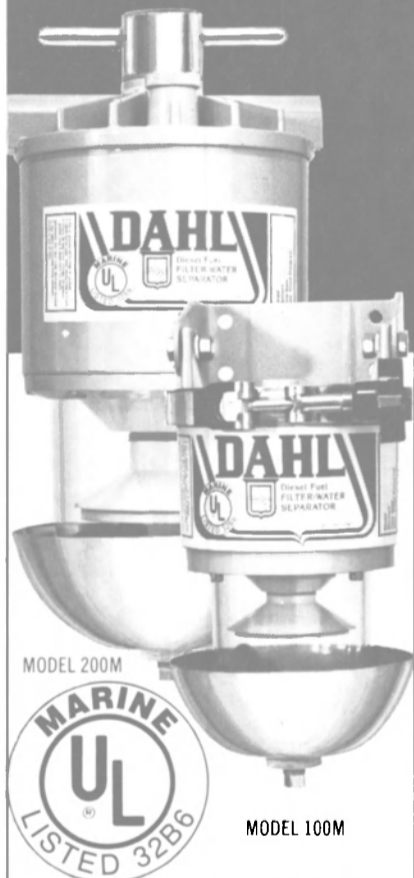
By integrating Tracor's Bridgestar SatNav and Omega Navigator, an enhanced navigation system results, which retains the advantages of Transit and Omega while minimizing the shortcomings of each. Special software allows both units to complement each other when used in the integrated mode. However, each unit can also function independently because there is no shared hardware.

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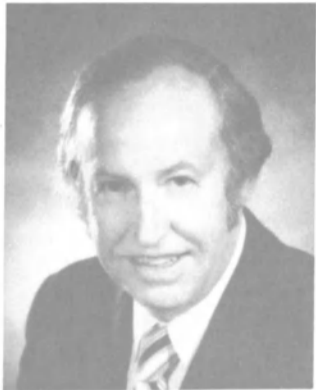
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Donald Neukranz Joins Transamerica Delaval As VP-Energy Products



Donald W. Neukranz

Donald W. Neukranz has joined Transamerica Delaval Inc., Lawrenceville, N.J., as vice president-Energy Products, it was announced recently by Truman W. Netherton, chief executive officer of the firm. He succeeds Frank N. McClure, executive vice president, who will assume responsibility for the company's General Products Group.

Transamerica Delaval's Energy Products Group includes the Turbine and Compressor Division of Trenton, N.J., Engine and Compressor Division of Oakland, Calif., and operations in Canada, Mexico, and the Netherlands.

\$5.9-Million Contract Awarded To Tracor Applied Sciences

A \$5,946,004 cost-plus-fixed-fee contract was awarded to Tracor Applied Sciences Incorporated of Rockville, Md., for engineering and technical services in support of the FFG-7 frigate class ships. The expected completion date is November 12, with the work to be performed in Rockville. The Naval Sea Systems Command, Washington, D.C. is the contracting activity.

Unitor Announces Two New Services For Marine Refrigeration

With shipboard refrigeration systems particularly vulnerable to malfunction and costly breakdowns, Unitor, an Actinor company, announced two new services for marine refrigeration: Preventative Technical Inspection (PTI) and Service And Repair (SAR).

To combat malfunctions and costly breakdowns of shipboard refrigeration systems, Unitor Group will offer Preventative Technical Inspection. The objective of PTI is the advance diagnosis of irregularities and weaknesses of onboard refrigeration services. As an "early warning" program, this service allows the necessary preventive action to be taken before major problems or even complete breakdowns occur. Unitor's extensive service network

is worldwide, covering all the major ports throughout the world, making this service widely available.

In addition, Unitor offers Service And Repair (SAR), a complete program whereby reported irregularities concerning the operation and function of any refrigeration system can be rectified by the direct engagement of a Unitor Service engineer. Unitor Service engineers are fully qualified to handle almost any repair or modification work, regard-

less of the system, size or complexity. Should it be necessary, the Service Engineer will travel with the vessel to avoid costly downtime.

Unitor has for some years been supplying refrigerants, tools and refrigeration equipment to the marine industry. The Unitor organization is featuring a network of depots in more than 450 ports worldwide. Unitor is now expanding their activities to include a new concept in Marine Refrigeration Services

which takes the development one step further toward customer care.

Unitor is said to be the only marine organization to offer these two new services on a worldwide basis, while ensuring service uniformity, central reporting and data build up.

For further information on the Unitor Group and their new services, Preventative Technical Inspection and Service And Repair,

Circle 37 on Reader Service Card



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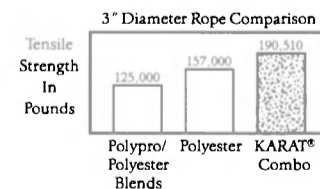
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Take a load off. With Tubbs' tough, economical KARAT COMBO - available in both 3-strand twisted and 8-strand plaited. For floating applications, Tubbs manufactures KARAT, a 100% EStalon fiber rope. Whatever you need, now there is a direct line to easier, faster, more productive work. And incomparable holding power. KARAT COMBO. To order, or for more information, call or write: TUBBS CORDAGE COMPANY, P.O. Box 7986, San Francisco, CA 94120-7986. 1-800-367-7673.



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Circle 13C on Reader Service Card

NASSCO Announces Three Key Executive Appointments



Donald A. Spanninga

Kristian K. Christensen

James C. Scott

National Steel and Shipbuilding Company (NASSCO), San Diego, Calif., has recently announced three key executive appointments.

Donald A. Spanninga has been named to the newly created position of senior vice president-Operations. Mr. **Spanninga**, who previously served as vice president-Materials & Information Systems, holds both BA and MBA degrees from Michigan State University. Prior to joining NASSCO in 1977, he was direc-

tor, management information systems for The Gap Stores, Inc.

Kristian K. Christensen, who previously held the title of vice president-Repair (acting) in addition to his former duties as vice president-Program Development & Control, is confirmed as vice president-Repair. A graduate of Denmark's Burmeister & Wain's College of Naval Architecture, Mr. **Christensen** has held various management positions during his 18 years at NASSCO.

James C. Scott was appointed to the position of director-Materials, advancing from manager-Materials. Mr. **Scott**, a certified public accountant, who joined NASSCO in 1977, is a graduate of the University of Washington. He previously was employed by the accounting firm Haskins & Sells.

NASSCO is a wholly owned subsidiary of Morrison-Knudsen Company, Inc.

Hudson Joins INDEECO As Sales Engineer

Industrial Engineering and Equipment Company (INDEECO) recently announced that **James E. Hudson** has joined the corporate staff as sales engineer.

Mr. **Hudson**, a recent graduate from the University of Missouri, Rolla, and a member of the American Institute of Industrial Engineers, will be directly responsible for INDEECO's circulation and cartridge heater lines along with industrial hot plate products.

INDEECO is a leading manufacturer of electric heating equipment

and SOLITECH electronic controls for the industrial, space and marine heating market in the U.S. and abroad.

Fairbanks Morse Receives \$18-Million Order For 16 Engines For LSDs

Colt Industries has announced receipt by its Fairbanks Morse Engine Division of an \$18-million order for 16 Fairbanks Morse opposed-piston diesel engine generator sets from Avondale Shipyards, a subsidiary of Ogden Corporation.

These engines will be used for shipboard electric power generation for each of the next four ships in the U.S. Navy's Landing Ship Dock (LSD) Program, LSD-45 through 48. The generator sets are scheduled for shipment during the third quarter of 1986.

The generator sets are in addition to a recent \$44.8-million order received by the division for 16 Colt/Pielstick PC2.5 propulsion engines for these four LSDs.

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50' x 80'
40' Between
Wing Walls

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BAY SHIPBUILDING

Circle 10 on Reader Service Card

Bay Shipbuilding Corporation in Sturgeon Bay, Wisc., is a wholly owned subsidiary of The Manitowoc Company, Inc. Bay was established in 1968 when Manitowoc relocated

its shipbuilding and repair operations to Sturgeon Bay. Since that time, an aggressive expansion program that included renovation, new facilities and equipment, land acquisition, and dredging has greatly increased the yard's capabilities, making it one of the most modern shipyards on the Great Lakes.

Drawing workers from a three-county area, Bay is Sturgeon Bay's largest employer. It is a full-service yard with complete in-house capabilities to design, engineer, build, repair, convert, repower, retrofit, or jumboize salt-water ships and tug/barges up to 730 feet in length, and Great Lakes ships up to 1,100 feet long. Since its founding, Bay has built 34 vessels including 17 self-

unloading bulk carriers ranging from 550 to 1,000 feet in length.

The yard's current orderbook includes three 700-FEU container-ships for Sea-Land Corporation that are being built to the most optimistic construction schedule attempted in the U.S. since World War II. In addition to new ship construction and vessel repair, non-marine industrial products are ideally suited to Bay's extensive fabricating and machining facilities.

Capital improvements made over the years included a 1,158-foot-long, 140-foot-wide graving dock completed in 1976. This dock can be divided by portable gates to allow the flooding of one end while work continues in the dry end. A 200-ton-

capacity gantry crane added in 1978 spans both the graving dock and the adjacent block assembly area that is used to construct individual hull and deck sections.

Bay also has a 7,000-ton floating drydock, 604 feet long and 70 feet wide, used primarily for survey, repair, and conversion.

A computerized lofting system has been installed to expedite the process. This system numerically controls both a dual-head plasma arc burning machine, with a 22- by 41-foot water table, and an oxygen fuel burning machine.

A 30,000-square-foot expansion to the existing heavy fabrication shop was completed in 1981. A higher

(continued on page 20)

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HOW WETSALL WORKS

WETSALL penetrates rust and moisture and chemically bonds tight rust and firmly adhering paint to steel surfaces. It forces moisture out through the paint and forms a tough coating that stops further rusting. WETSALL's penetration is so effective that existing rust becomes an integral part of the coating.

WETSALL OFFERS OTHER COST-SAVING ADVANTAGES

WETSALL is a fast drying coating that also performs well as a finish for up to 30 months. It resists exposure to salt spray, ultraviolet rays, chemical and oil fumes and spillage, humidity and moisture.

WETSALL®

WETSALL is compatible with conventional, alkyd, phenolic and oleoresinous paints, and acts as an excellent primer for these coatings. It is available in red (#3240), grey (#3241), black (#3242) and white (#3244).

WETSALL REQUIRES LESS PREPARATION

WETSALL eliminates the need for dry surfaces. It also eliminates the need for costly sand or shot blasting to remove rust. Hand or power tools are all you need, WETSALL does the rest by penetrating the remaining surface rust and adhering to the steel below.

It is not necessary to eliminate all evidence of rust but loose rust, mill scale, paint and blisters should be removed. Remove grease and oil with Farboil T-242, turpentine or mineral spirits.



WETSALL has excellent coverage. One gallon of WETSALL will cover up to 400 sq. ft., depending on the condition of the surface.

Thanks to coverage, durability and reduced preparation, this unique formulation offers great savings in time and money.

HOW TO USE WETSALL

Since rust deposits have at least twice the mil thickness of an average coat of paint, a sufficient number of coats is required of WETSALL to seal the surface and stop further rusting. If initial rusting is heavy, some superficial surface rust may exist after the first coat has dried. If this happens a light wire brushing and additional coats of WETSALL will correct the condition thoroughly saturating and properly sealing the rust.

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Inland Waterways/ Great Lakes Yards

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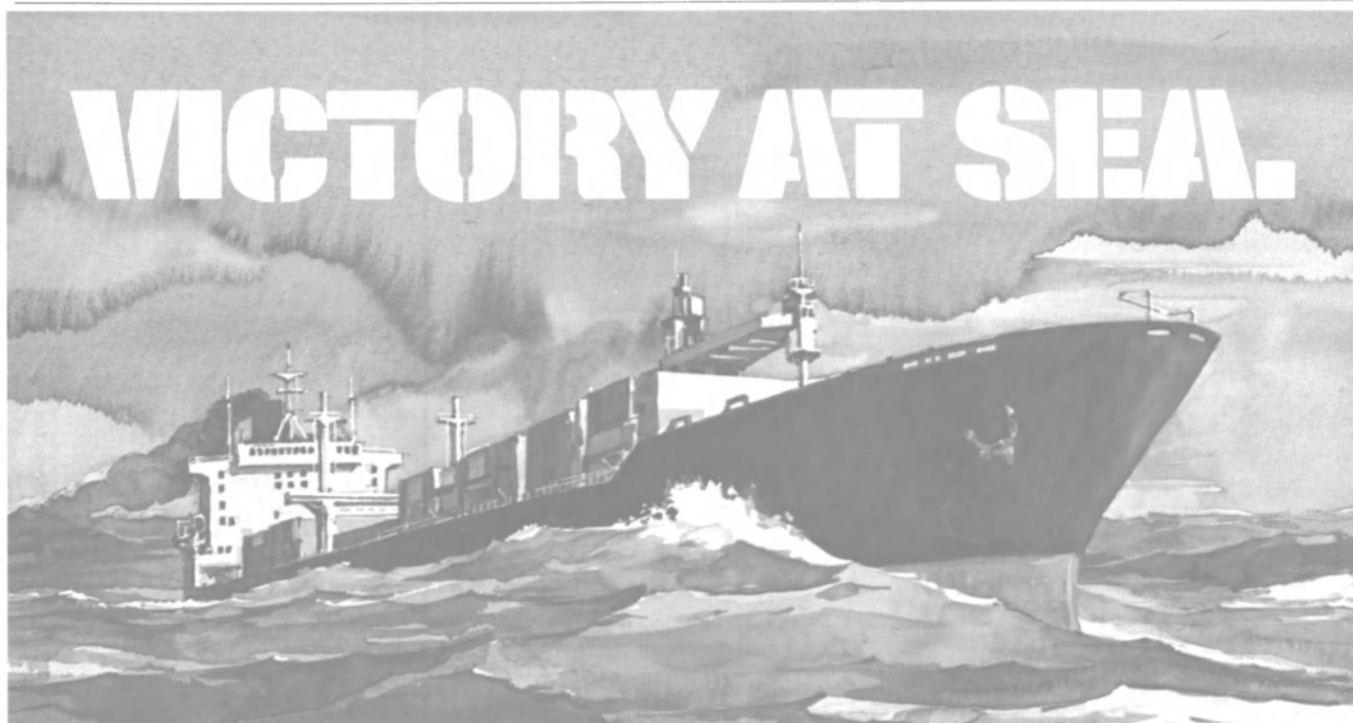
working bay and increased crane capacity enable this shop to fabricate and pre-outfit large ship modules, reducing overall production costs. A one-sided welder designed and built through the cooperative efforts of Bay Shipbuilding, Mani-

towoc Engineering, and Manitowoc Shipbuilding has been installed in the fabrication shop. This unit has the capability of welding 50-foot stiffened plates together to form module panels with a single welding pass.

Additional improvements include: a steel shot blast and prime line adjacent to the fabrication shop; renovation and enlargement of the pipe shop, with automatic



The Bay Shipbuilding yard in Sturgeon Bay, Wisconsin.



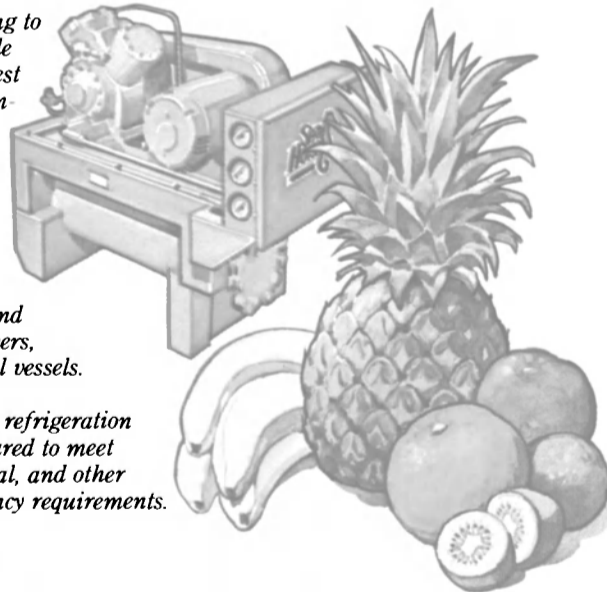
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pipe welding and burning machinery; and modernization and enlargement of the electrical shop to increase its capacity to design, engineer, and build electrical panels and switchboards.

FRASER

Circle 11 on Reader Service Card

Fraser Shipyards, Inc., located in the Port of Duluth/Superior at the west end of Lake Superior, recently completed a busy winter. The yard converted the USS Great Lakes Fleet, Inc.'s George A. Sloan to diesel power. Sea trials were held in June this year. In addition, the shipyard performed major as well as routine repair and maintenance work on several other Great Lakes vessels.

The current backlog of work scheduled for the drydocks includes six vessels for five-year inspection and routine repairs. In addition, Fraser maintains a fleet of workboats that service vessels in the port on an around-the-clock basis.

The decline in tonnage on the Great Lakes as a result of the downturn in the economically depressed steel industry has adversely affected the yard, which had been a leader in vessel lengthenings and self-unloader conversions. Fraser management is confident that their efforts to survive the recession in the shipbuilding and repair industry have strengthened the yard. They plan to aggressively pursue their market share of conversion and repair work in the future.

HUMBOLDT BOAT

Circle 12 on Reader Service Card

The past year has been a very active one for Humboldt Boat Service Company in St. Louis. Some of the major projects completed by the yard's craftsmen were new decking on five 200-foot barges and extensive hull repair on five other deck barges. Five boat hulls received complete new plating or bows and townees, and 14 boats had extensive rudder, shaft, and propeller repairs. One 1,000-hp boat received an additional third engine.

Two 300-passenger excursion vessels received extensive hull and deck plating, along with shaft and rudder repair, and a 265-foot barge was modified to accommodate the 2,500-passenger excursion vessel President as a dock barge. Two boats had new hydraulic steering systems installed, and one dredge was dry-

G O C A R R I E R T R A N S I C O L D

Circle 165 on Reader Service Card



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docked for engine cooler repairs. One new 600-bhp boat was completed at the end of 1984.

The yard's electrical department installed several sets of barge connector winches and new xenon searchlights, and completely rewired a boat for generators.

Activity in the machine shop was brisk. The shaft welding and metalizing equipment was kept busy full time, while machining work was performed for other boat repairs.

Some new equipment was purchased to increase production and efficiency. A major installation was two new winches for the yard's 400-ton haulout ways.

Humboldt is looking forward to another good year, and has tentative plans to begin building a new stock boat late this summer.

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August 1, 1985

vessel; lock bulkheads for the U.S. Army Corps of Engineers; and warping tugs for the U.S. Navy.

The shipyard consists of 90 acres along the Ohio River. Production buildings include 21,700 square feet of machining, 50,000 square feet of storage, and 43,500 square feet of assembly. Four major building ways and one 500-foot launch way comprise the major component assembly area. Yard capabilities include Wheelabrator, optical burners, 38 material-handling cranes (up to 50 tons), and computer-aided material and production control.

The Marine Repair division maintains four drydocks, the largest being 3,000 tons, and a 50-ton-capacity floating crane. Repair capabilities include machining, propeller work, and repowering.

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

Jeffboat's engineering and naval architecture staff is continually updating and expanding its studies into fuel economy and towing efficiencies. The engineering department is currently utilizing IBM computers to assist in developing designs and systems for all types of vessels constructed at the yard.

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Future plans have Jeffboat expanding its heavy industrial fabrication capabilities, while upgrading production facilities to meet changes in market demands. The company's diversity of products and the flexibility of its manufacturing facilities has enabled the yard to take advantage of market opportunities and remain a strong leader in the shipbuilding industry.

MARINETTE MARINE

Circle 15 on Reader Service Card

1984 was a good year for Ma-

rinette Marine Corporation, and 1985 looks even better, according to **Larry N. Hairston**, vice president-marketing for the medium-sized shipbuilder located at Marinette in Northeastern Wisconsin.

Last year MMC began construction of two wooden Mine Countermeasure (MCM) vessels and won Navy contracts for 13 wooden Yard Patrol (YP) boats and 52 workboats. In addition, a number of Torpedo

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(continued on page 22)

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Circle 14 on Reader Service Card

Inland Waterways/ Great Lakes Yards

(continued)

option for six to eight additional vessels later this fall.

To handle this increased workload, MMC has established one of the most sophisticated engineering capabilities in U.S. shipbuilding today, including a comprehensive computer graphics augmented design and manufacturing system (CADAM). The Marinette yard covers 57 acres stretching two-thirds of a mile along the Menominee River, with 440,000 square feet of enclosed work space permitting year-round uninterrupted construction.

As part of a continued upgrading of facilities and emphasis on state-of-the-art technology, MMC has installed a dual walking beam ship transfer system. This 160,000-ton-capacity system will be used to move the MCMs from the yard's new 70,000-square-foot ship erection building to the outside launch area beginning in early 1986.

In October of 1984, MMC completed its new 200-ton shiplift, a movable docking platform that enables the yard to launch or retrieve vessels up to 120 feet long and 200 tons displacement. This both simplifies launching techniques and allows for an increase in production with faster launches. The shiplift is used for launching the 50-foot workboats, Torpedo Weapons Retrievers, and YP craft. The entire shiplift system was built and installed by Marinette's own people.

MONARK

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MonArk Boat Company in Mon-

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In addition, NABRICO is a major supplier of marine deck hardware to the entire marine industry. The company pioneered in the design and construction of much of the modern equipment used on the rivers today.

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National Marine Service' facility in Hartford, Illinois.

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Current construction contracts under way for the U.S. Navy include three 224-foot wooden Mine Countermeasure Ships (MCM), four 255-foot steel Rescue Salvage Ships (ARS), and seven 108-foot wooden Yard Patrol Craft (YP).

Peterson's development and marketing plans have produced the PBI MK-1, a 66-foot aluminum multi-mission inshore patrol boat. The yard also has a long history for excellent commercial vessels including tuna superseiners, research ships, and large passenger/car ferries.

PBI serves the government, commercial, and services sectors with its construction capabilities in wood, steel, fiberglass, and aluminum, as well as its design and production expertise. Its continuing backlog of ship construction, complemented by conversions, repairs, and special projects of unique assembly fabrications enables the yard to maintain an excellent labor force, and keep pace with the latest



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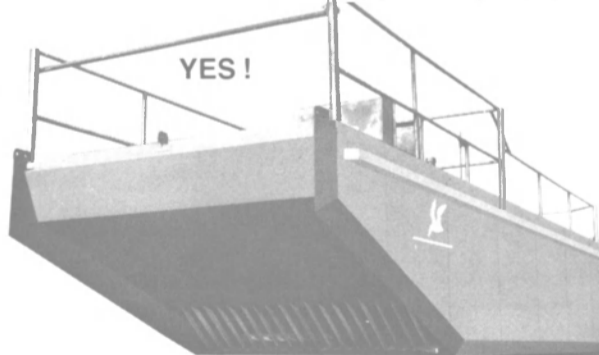
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Circle 267 on Reader Service Card



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PBI serves the government, commercial, and services sectors with its construction capabilities in wood, steel, fiberglass, and aluminum, as well as its design and production expertise. Its continuing backlog of ship construction, complemented by conversions, repairs, and special projects of unique assembly fabrications enables the yard to maintain an excellent labor force, and keep pace with the latest



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Peak Pressure Indicator/Recorder for Precision-Monitoring Diesel Engine Power Cylinder Load Distribution

Microprocessor-based, EN-SPEC 1000 takes the guesswork out of monitoring power cylinder firing pressures for high engine performance and maximum fuel efficiency. Detects harmful detonation and helps pinpoint misfiring cylinders and worn piston rings.

Digital display shows running average of peak firing pressures. Built-in thermal printer supplies a paper tape record.

Rugged (no moving parts), portable (weighs 12 pounds), battery-powered. One-step hookup to power cylinder indicator cock.

Cooper Industries Energy Services Group
EN-TRONIC® CONTROLS
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Telephone: 614 393-8200.



ENERGY SERVICES GROUP

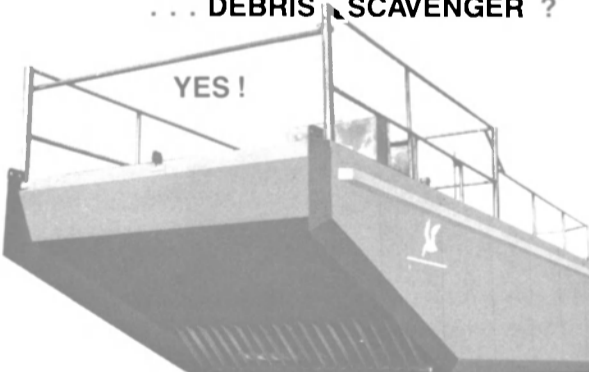
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technologies and developments in the industry.

PBI is a privately owned, full-service shipyard with 800-900 employees. Approximately seven acres of buildings provide inside construction and production facilities; total company area is 13 acres. Extensive waterfront facilities provide berthing and shipways for ships into the 300-foot range. The yard's floating drydock facilities are Navy-certified for 900 long tons, with current plans for re-certification to 1,300 tons. Overall length is 374 feet, with inside dimensions of 360 by 40 by 18 feet. Inside construction capabilities extend to ships 230 feet long, 60 feet wide, and 60 feet high.

In construction techniques and operational functions, PBI complies with numerous Mil-Q government standards, and has earned Certification Status from the U.S. Navy for other procedures and capabilities as well.

SERODINO

Circle 18 on Reader Service Card

Serodino, Inc., headquartered in Chattanooga, Tenn., is a privately held corporation that, with its related companies, covers all aspects of the inland marine field. Established in 1933, the corporation has served the marine and construction industries for more than half a century.

Serodino's towing vessels are expressly designed for heavy-duty work. Three crews produce six vessels per year, usually a 1,600-bhp towboat, a 1,040-bhp linehaul vessel, and four 1,000-bhp workboats. The company's entrance into the excursion boat field is a natural extension into a growing new industry.

In addition to its shipyard activities, Serodino operates towboats and barges handling more than 3 million tons of bulk goods annually.

The recently delivered, 550-

The Southern Belle constructed at Serodino, Inc., Chattanooga, Tennessee.



passenger excursion vessel Southern Belle was built at the company's Hales Bar, Tenn., shipyard for the Chattanooga Riverboat Company. Designed by Alan Bates of Louisville, she is a unique departure from the standard sternwheel replicas.

The Belle's steel hull is 105 feet long, with a beam of 34 feet and depth of 7 feet. The main deck will seat 180 for dinner, and the second

deck, which has a bandstand and dance floor, will seat 168 diners.

The 500-bhp, twin-screw vessel is powered by Cummins 855M diesel engines driving 3-inch shafting via 3:1 reverse/reduction gears to 40-inch propellers turning at 600 rpm. Special copper Fernstrum coolers mounted on the outside of the hull provide engine cooling. Top speed is 12 mph.

Full vessel control is in the pilot-house, with all steering, engine, and electrical controls at the pilot's fingertips. Advanced electronics equipment includes radar, a digital depth sounder, and two VHF 70-channel radios. Two Carlisle & Finch searchlights cast two-mile beams. The pilot's eye level, 37 feet above the

(continued on page 24)

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Cat 3500 Series Engines will operate your boats more efficiently. And at a purchase cost hard to pass up. They're proven to:

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Material and specifications subject to change without notice

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Inland Waterways/ Great Lakes Yards

(continued)

water, gives him a commanding view of his surroundings.

The Southern Belle conforms to all applicable U.S. Coast Guard Regulations, and she is designed, approved, constructed, tested, and accepted to meet these rigid standards. Annual USCG inspections will insure that she will continue to retain her safe and shipshape standards.

TWIN CITY

Circle 19 on Reader Service Card

From a mass production barge yard to a full-service shipyard, Twin City Shipyard, Inc. within three years has transformed its facility in St. Paul, Minn., into a versatile operation from a 4,000-cubic-yard sophisticated hopper dredge to 56-foot aluminum launches. A management team with a wide range of design and construction experience in medium-sized vessels, and an aggressive bidding philosophy has enabled the yard to maintain a steady work load during a depressed period seldom witnessed in the commercial marine industry in recent times.

Launched from a newly completed, 3,000-ton, tilt beam side launching on June 1 this year, the 8,000-bhp trailing hopper dredge is nearing completion. This vessel is scheduled to begin her journey from the Upper Mississippi River to New Orleans in mid-October, and enter service for Gulf Coast Trailing shortly thereafter.

A 100-foot, 3,000-bhp offshore tug is under construction in the yard's large building hall, and is scheduled for delivery in early winter to the Panama Canal Zone. Following completion of five deck barges for the Army Corps of Engineers, a contract for five additional barges for the same owner was awarded to the shipyard. The backlog also includes three 3,000-cubic-yard offshore hopper barges and one 55-foot river towboat.

Twin City recently was awarded a U.S. Navy contract for construction of a series of landing craft (LCM), adding the Department of the Navy to its successful association over the years with government agencies such as the Army Engineers and the Panama Canal Commission.

Twin City has become a leading U.S. shipyard in the design and construction of dredging equipment such as hopper dredges and split hull dump barges. Portabarges®, a

unique design patented by TCS, enables barges to be transported over the road in modules and then assembled in the water into virtually any size or shape for land-locked lakes or other inaccessible bodies of water. Portabarges are available for either lease or sale.

Built in 1973, the Twin City yard features a modern enclosed plant layout. Within this facility, state-of-the-art technology is utilized for high productivity and quality assurance. Headlining this technology is a sophisticated computer-controlled plasma arc cutting machine with water table for precise, high-speed cutting of plates without distortion. Of special interest is a robotic panel welding machine that provides automatic, continuous high-strength welding of four stiffeners simultaneously.

WALKER BOAT

Circle 20 on Reader Service Card

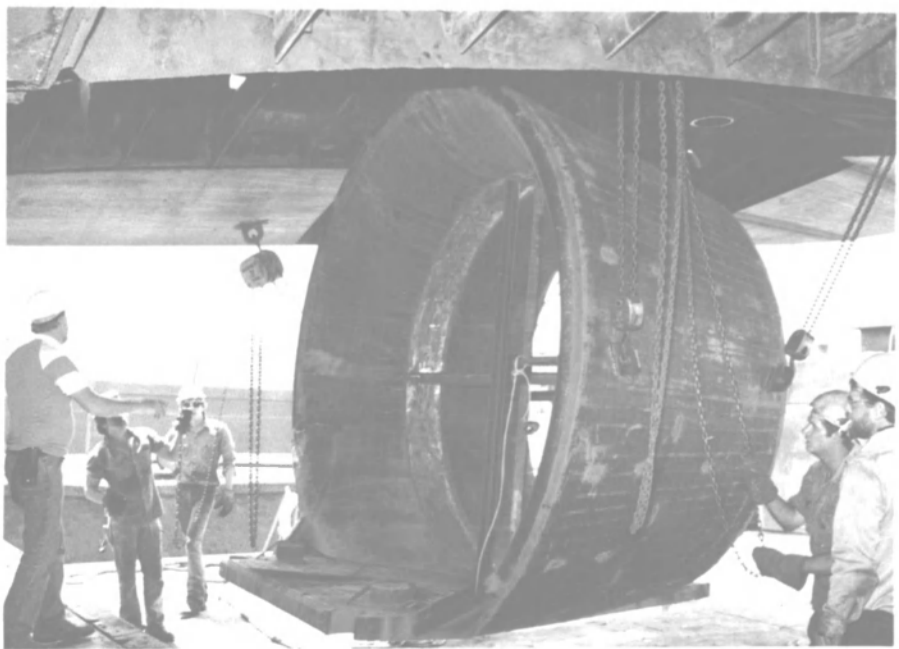
Walker Boat Yard, Inc. is located in Paducah, Ky., at Mile Three on the Tennessee River. The close proximity of the yard to the Ohio and Mississippi Rivers makes it a convenient location for repair on a large portion of the inland waterway system.

The yard offers a totally integrated repair facility for all inland waterway equipment, with six dry-docks ranging in size up to 2,500 tons. A complete machine shop, steel fabrication area, engine overhaul shop, and paint facility rounds out its capabilities. Walker maintains a work force of nearly 150 skilled employees, with the flexibility to handle both minor repairs and major alterations.

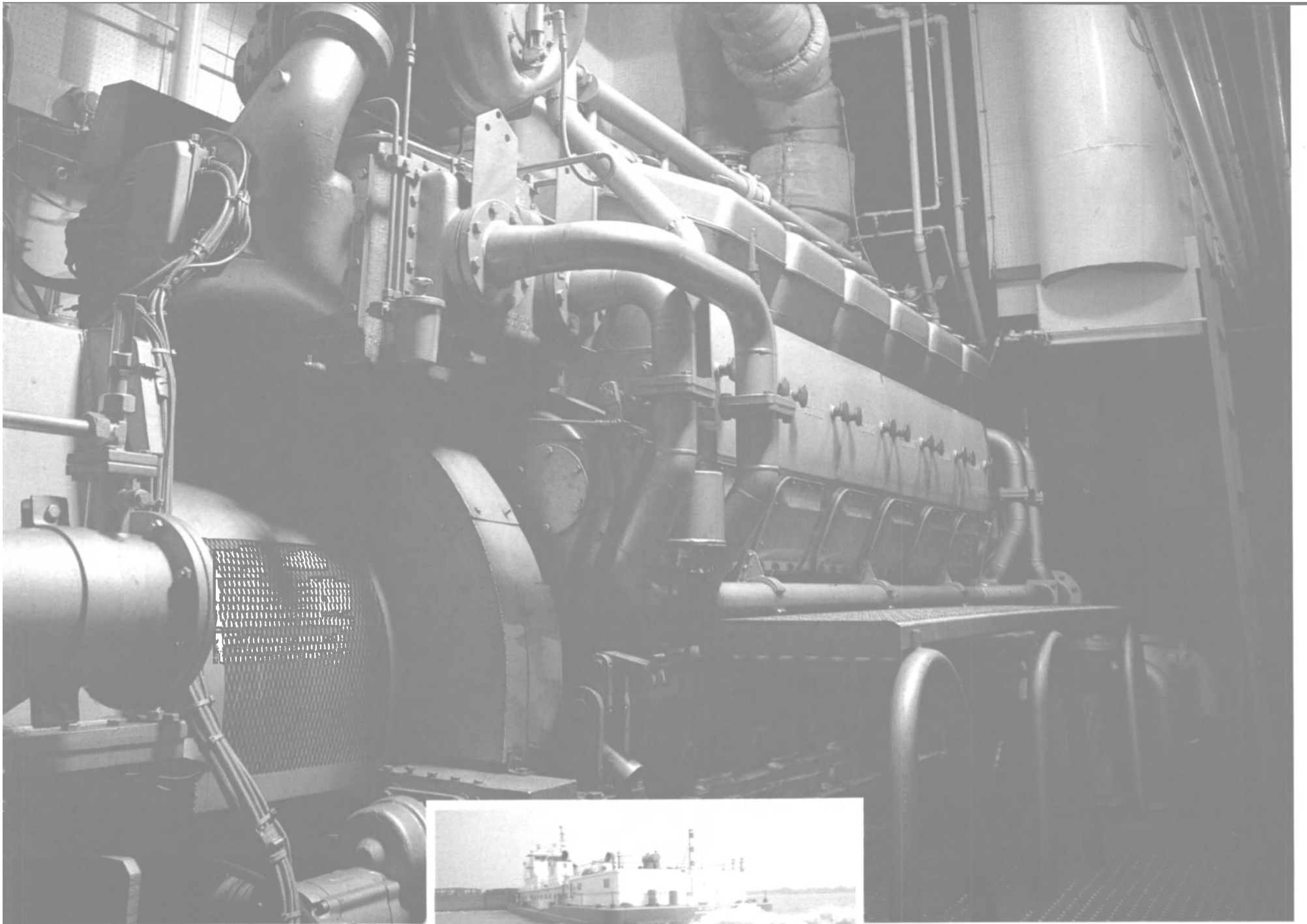
Some of the more unusual jobs completed during the past 12 months included complete replacement of towboat Kort nozzles, cement barge conversions, and installation of a 4,000-ton crane foundation on an offshore deck barge.

The yard's machine shop has a wide array of equipment, with lathe capacities up to 36 feet in length and 36 inches in diameter. Metalizing and heat-treating equipment provides the capabilities for major shaft rebuilding. Coupled with the adjacent fabrication shop, featuring a 750-ton press brake, these facilities allow Walker to perform all types of work efficiently.

The company's Diesel Division has grown rapidly in the past year. In-place overhaul of Electro-Motive, Fairbanks Morse, and Caterpillar engines is offered both at a convenient boat landing near the shipyard and at remote locations specified by the customer. Walker also offers factory-trained mechanics for servicing of Detroit Diesel and Cummins engines, as well as spare parts. The Division's recent assignment as a marine distributor for Caterpillar, M.A.N., and Volvo-Penta engines permits it to provide service on nearly any type of equipment.



Photos—Top to bottom:
- Marinette Marine's yard, Marinette, Wis.;
- Peterson Builders facilities in Sturgeon Bay, Wis.
- Launching of the hopper dredge, Ouachita, at Twin City, St. Paul, Mn.;
- Installation of a Kort nozzle at Walker Boat Yard, Paducah, Ky.;



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Tests conducted by Midland/Ohio River Company on its four big Alpha-powered towboats proved considerable fuel savings when using No. 2 Diesel compared to the latest versions of conventional two-stroke engines in its fleet. Beyond that, the Alpha engines are routinely used for heavy fuel **up to 3500 seconds Redwood No. 1.**

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Omnipure Opens New Headquarters And Plant In Sugar Land, Texas

The official opening of Omnipure's new headquarters and plant was recently announced by **Leonard Langeland**, president of Omnipure. Omnipure is a division of

Sigma-Chapman, Inc., and is now headquartered in Sugar Land, Texas. The new structure is located at 12850 Bournewood Drive on a one-acre land parcel in the Sugar Land Business Park.

"Our new two-story building and adjoining plant," says Mr. **Langeland**, "contain a total of 14,300 square feet. That's more than three times the size of our previous facility. This move has been in response

to such a large increase in our business worldwide. The steel frame building took only four months to build and has free standing, movable, tilt walls to accommodate our future expansion."

Omnipure was founded in 1979, and is a leading manufacturer of marine sanitation devices and raw water chlorination equipment for the offshore industry. Its products are certified by the U.S. Coast

Guard, the International Maritime Organization, DOT-UK, Sweden, Denmark and several other authorities.

Circle 32 on Reader Service Card

Todd Awarded \$11.4-Million Contract For USS Mt. Hood Overhaul

Todd Shipyards Corporation, San Francisco, Calif., was recently awarded an \$11,478,466 firm-fixed-price contract for the regular overhaul of the U.S.S. Mt. Hood (AE-29). The work will be performed in San Francisco, and is expected to be completed by March 3 of next year. The contract funds would not have expired at the end of the current fiscal year. Five bids were solicited and five offers were received. The Supervisor of Shipbuilding, Conversion and Repair, San Francisco, is the contracting activity (N00024-85-H-8236).

Siess Will Chair NOIA's Pro-Leasing Task Force



Charles P. Siess Jr.

Charles P. Siess Jr., president and chief executive officer of Marathon Manufacturing Company, Houston, has been named 1985-86 chairman of the National Ocean Industries Association (NOIA) Pro-Leasing Task Force. The announcement was made by NOIA president **Charles D. Matthews**. As chairman of this program, Mr. **Siess** succeeds **Paul L. Kelly**, vice president-industry & government relations, for the Rowan Companies, Inc.

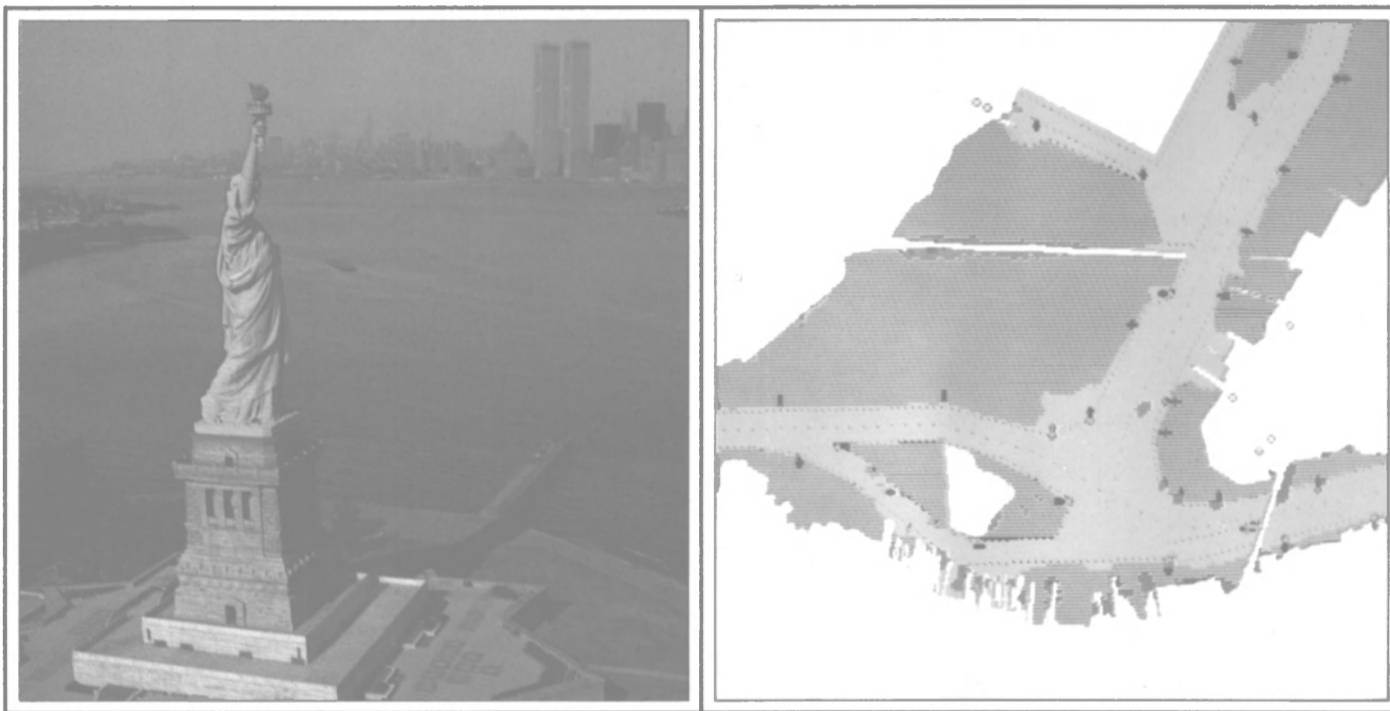
Pro-Leasing is an advocacy program to promote oil and gas development on America's Outer Continental Shelf (OCS). It seeks to enhance public understanding of the reasons to lease the OCS and unlock its needed natural resources. The program's goal is to inform members of the Congress, the media, and the American people of the importance of OCS leasing to the nation's well-being.

The Pro-Leasing Program has organized NOIA member companies on a state-by-state basis to provide an effective voice nationwide in support of the government's OCS leasing program, and to oppose Congressional restrictions on OCS development.

In addition to serving as chairman of the Task Force, Mr. **Siess** is a member of the Executive Committee and on the Board of Directors of the National Ocean Industries Association.

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VIEWNAV[®] HARBOR MONITORING SYSTEM



Color video display of Port Elizabeth, NJ shows everything you need to see at a glance.

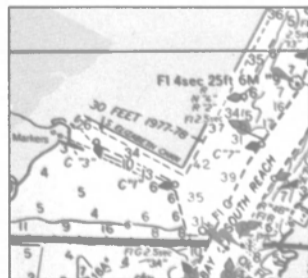
ELECTRONIC CHARTS THAT REVOLUTIONIZE VESSEL TRAFFIC MANAGEMENT. NOW HARBOR MANAGEMENT, CONTROL AND SECURITY ARE SAFER AND EASIER.

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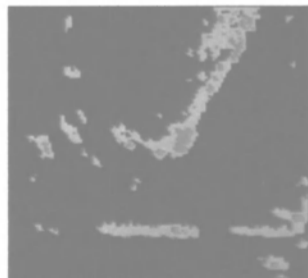
- Shows to-scale, accurately digitized, updated, NOS-quality Electronic Charts of harbors and waterways with all navigation aids, shore contours, bridges, channel and anchorage boundaries, shoals, piers, etc.
- Automatically superimposes true-motion radar images of vessels and hazards in exact locations and scale. Shows direction of movement, distance and approximate speed.
- Extensive interactive data base can store, revise, update and display ship

names and locations, arrival/ departure times, pilot names, etc. Anything you need to recall can be simultaneously displayed in alphanumeric.

- Displays anchorage grids with coordinates to facilitate vessel location and identification. Detects vessel movement.
- Much easier to understand than radar alone, the user-friendly, self-checking VIEWNAV Harbor Monitoring System is the most powerful, tactical and strategic decision-making aid available today!

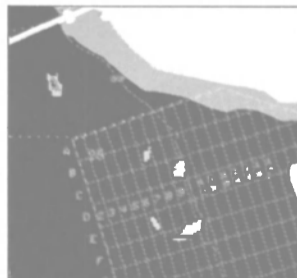


Compare this section of NOS chart #12327 to the same area shown on the VIEWNAV display, above. Note that the VIEWNAV Electronic Chart provides NOS chart accuracy and makes important data much easier to see.



Radar display, alone, of Port Elizabeth, makes identification of useful information more difficult.

Anchorage grids permit fast location and identification of vessels. Data base displays alphanumeric information such as arrival times, departure times, pilot names, etc.



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by fuel consumption and keeps deposit levels low.

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William M. Lechler Joins Sumitomo Machinery Corp.

William M. Lechler has joined Sumitomo Machinery Corp. of America, Teterboro, N.J. As a vice president and national sales manager, he has full marketing responsibility for the company's mechanical power transmission products in the United States and Canada.

Prior to joining Sumitomo Machinery, Mr. Lechler, who has 30 years of experience in the power transmission field, was national sales manager of Eurodrive, Inc., Troy, Ohio. Earlier, he held sales and marketing positions at Reliance Electric and U.S. Electric Motors.

Sumitomo Machinery Corp. of America is a subsidiary of Sumitomo Heavy Industries, Ltd., Japan. In addition to its main assembly

plant in Teterboro, the company operates satellite assembly plants in Hayward, Calif.; Atlanta, Ga.; Wood Dale, Ill.; and Etobicoke, Ontario, Canada.

Sumitomo Machinery's products include cycloidal, helical, planetary and worm speed reducers; mechanical and electrical adjustable-speed drives; gearmotors; electric motors; and soft-start couplings. These products cover a range from fractional



William M. Lechler

horsepower to over 7,000 horsepower.

For a complete brochure on all Sumitomo speed reducing machinery,

Circle 40 on Reader Service Card

Anderson Named President Of Raytheon Marine European Operations

Stanley L. Clark, president of Raytheon Marine Company, headquartered in Manchester, N.H., recently announced that Larry C. Anderson has been named president and managing director of Raytheon Marine Sales & Service Company, Copenhagen, Denmark, effective this month.



Larry Anderson

Mr. Anderson, formerly manager, domestic marine marketing at Raytheon Marine, will be responsible for sales and operations of Raytheon and Apelco products for the recreational, fishing, and high seas markets in Western Europe and the Middle East. Among these are radars, Automatic Radar Plotting Aids (ARPA), Satnav, SatCom, offshore platform monitoring systems, vessel traffic monitoring systems, Loran-C receivers, weather facsimile receiver/recorders, VHF & SSB radiotelephones, echo sounding depth indicators and recorders, color fishfinders, doppler speedlogs, and net sounders. Mr. Anderson will also be responsible for sales of additional JRC products.


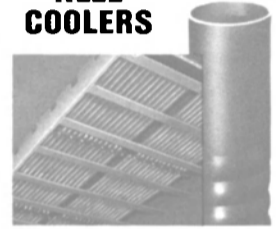
Mr. Anderson joined Raytheon Marine Company in 1976 and has held a number of sales and marketing positions with the company, including a previous position in Copenhagen. He has also owned and operated his own marine equipment business.

Raytheon Marine Company serves the marine community through over 200 U.S. sales and service dealers and over 100 international agents.



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<p>Send for latest Catalogs. Dependable Johnson-Duramax Marine Products are Sold and Serviced Worldwide.</p> <h2 style="margin: 0;">DURAMAX® MARINE</h2> <p style="margin: 0;">division of The Johnson Rubber Company A Subsidiary of Duramax Inc.</p> <p style="margin: 0; font-size: small;">Middlefield, OH 44062 Area Code: 216/632-1611 Telex: 21-2564JRCM UR / Cable: "DURAMAX" Dependable Products For Ships Throughout The World</p> <p style="margin: 0; font-size: x-small;">© T.M. Reg. 6-2022-485</p>			
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Great Lakes Firm Offers Extensive Inventory Of Marine Equipment Spare Parts

Jered Brown Brothers, formerly Jered Industries, has patterns, tooling, and over 300,000 original marine equipment and machinery drawings maintained at their Auburn Hills, Mich., facilities.

This invaluable inventory of both equipment and exact technical data places Jered Brown Brothers in a unique position to service the widest possible range of marine machinery and equipment on all types of vessels operating in the Western Hemisphere. Machinery manufactured as early as 1867 can be serviced and parts supplied. The firm's location makes it particularly ideal for servicing vessels plying the Great Lakes. In addition, the facilities are staffed with experienced engineering personnel thoroughly familiar with very probably the most comprehensive line of marine equipment and spare parts in the world.

Equipment designed and manufactured by such world-renowned engineering companies as American Engineering, C.H. Wheeler, Baldwin-Lima-Hamilton and Jered Industries can still be serviced, because Jered Brown Brothers acquired the exclusive rights from these companies over 20 years ago, and have been continuously supplying both parts and repair expertise to U.S. and foreign commercial vessels as well as the U.S. and Canadian Navies.

There are important international connections as well. Prompt pricing and delivery can be provided for steering gear manufactured by John Hastie of Greenock, Scotland. International communications and

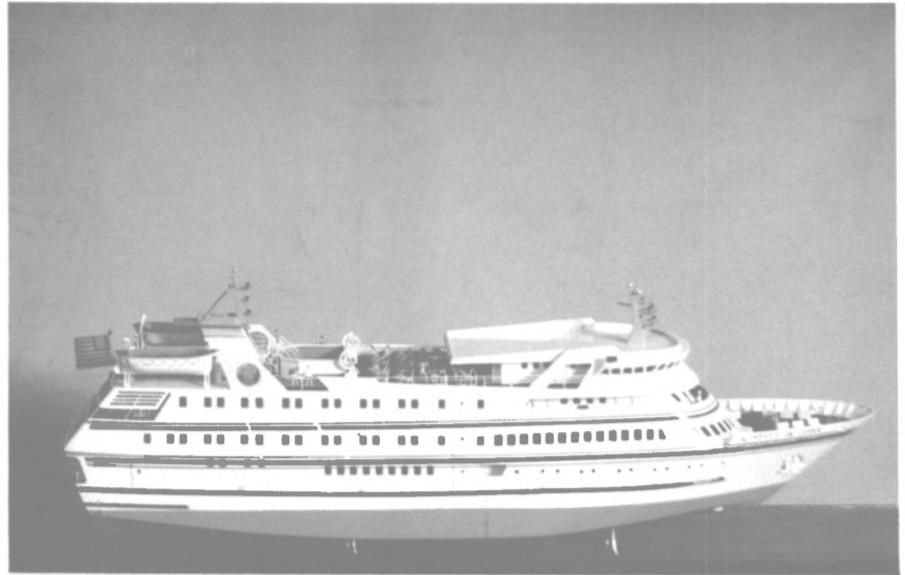
downtime can be minimized for all parts including the Hele-Shaw pump. Retrofit kits are available for outfitting vessels with a rudder arrestor/safety system. Prices and full information are available for both single and double ram units.

A member of the Vickers Marine Engineering Division, Jered Brown Brothers is one of eight companies. Together they are joined with the British firms of John Hastie of Greenock, Brown Brothers, Michell Bearings, Vickers Marine Controls and Stone Vickers. From deck machinery to elevators, steering gear to specialized propeller shaft bearings, stabilizers to ram tensioners, every aspect of motion control systems for the marine industry is thoroughly covered. Also included in the group is SOFEC of Houston, Texas, which manufactures and designs all forms of single point mooring systems such as SALMs (single anchor leg mooring) and CALMs (catenary anchor leg mooring) systems. Vickers Marine Engineering offers one of the most extensive product line of any marine equipment manufacturer.

At a vessel owner's request, field servicemen or engineers will be assigned to survey repairs and provide sound recommendations. Follow-up includes prompt delivery of parts made to original specifications to assure quality material, proper fit and efficient operation.

The Jered Brown Brothers brochure and literature is available to vessel owners. For your free copy,

Circle 23 on Reader Service Card



Model of the Ponce de Leon, the first ocean-class passenger vessel built in the United States in more than 30 years.

Cruise Yacht Ponce De Leon Now Being Built At Marine Fabricators For Florida Gulf Coast Corporation

The cruise yacht Ponce de Leon, the first ocean-class passenger vessel built in the United States in more than 30 years, is now under construction in the Marine Fabricators Inc. shipyard, approximately 30 miles south of Jacksonville, Fla., on the Saint John's River. The vessel is being built for the Florida Gulf Coast Corporation of Fort Meyers Beach, Fla., and is scheduled for completion in 1986.

The Ponce de Leon will have a length overall of 221 feet, beam of 44 feet, depth of 15 feet, and a design draft of 9 feet. She will be powered by two Caterpillar 3512 TA engines, each 1,165 bhp at 1,600 rpm. Other propulsion equipment includes two Caterpillar reverse gears, two main generators driven by a Caterpillar engine; one emergency generator driven by a Caterpillar engine; and Bird-Johnson bowthruster driven by a Caterpillar diesel, delivering 5,000 pounds of thrust. The anchor windlass will be McElroy Electric

Double Wildcat for 1½-inch chain and 3,000-pound anchors.

According to **Robert G. O'Connor**, president of Florida Gulf Coast Corporation, when the Ponce de Leon is completed in 1986 she will provide her 148 passengers with the amenities of a luxury liner and the ambience of a private yacht. The vessel's 4,200-mile range will allow the capability of crossing oceans, while her shallow draft will enable her to visit islands and ports that are inaccessible to larger cruise ships.

Guest accommodations will span five decks and include 42 suites, 10 staterooms, four deluxe suites and a Presidential suite.

According to Florida Gulf Coast Corporation, the Ponce de Leon will offer varied itineraries and will include cruise adventures in the Caribbean, the Mediterranean, Panama, Alaska, Hawaii, and the eastern United States and Canada.

Left to right: **Robert G. O'Connor**, president of Florida Gulf Coast Corporation; **Frederic Towell**, captain of the Ponce de Leon; and **Townsend E. Carman**, vice president of Florida Gulf Coast Corporation and supervisor of the vessel's construction.



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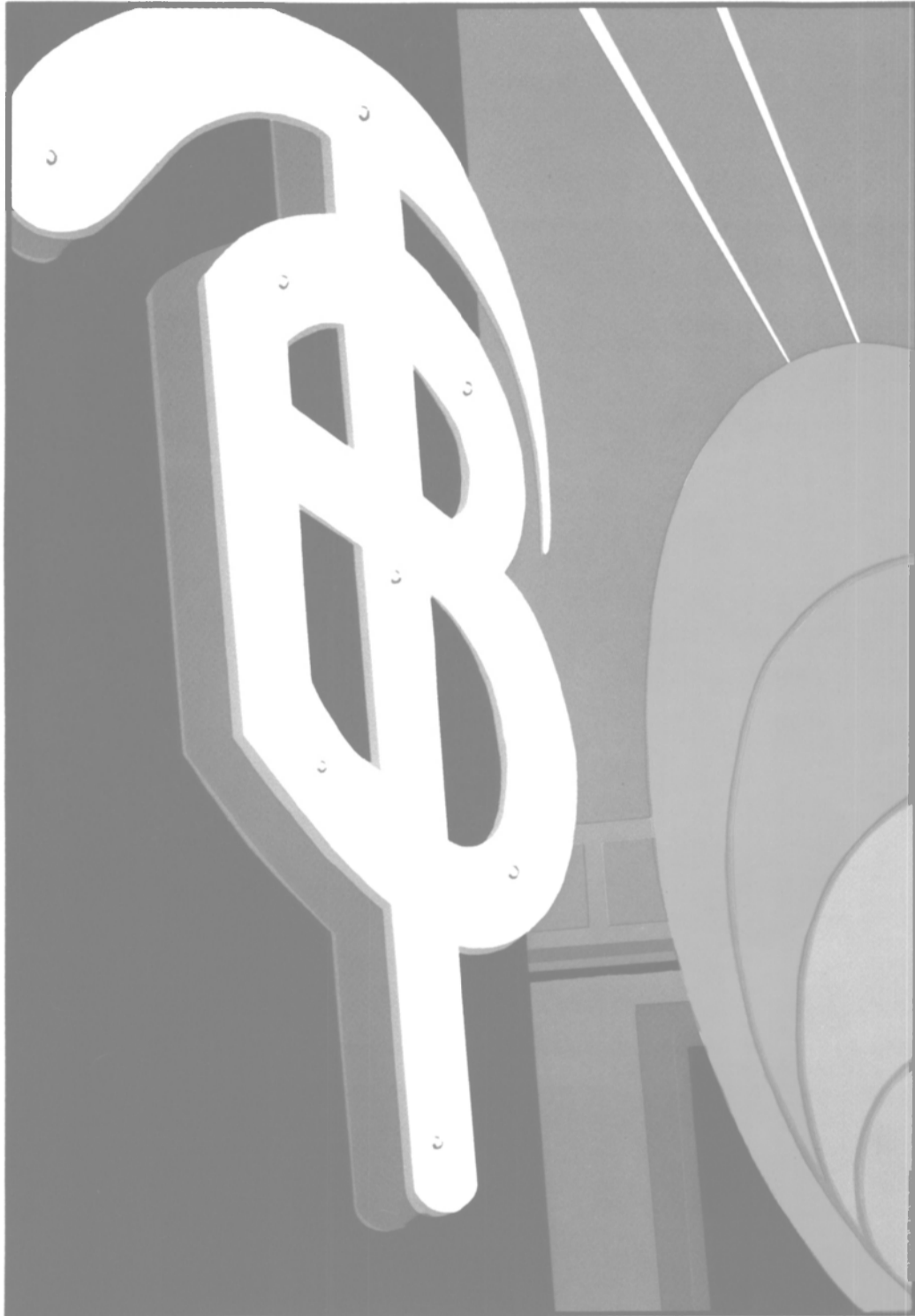
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NICOR And Sonat Subsea Form Gulf Joint Venture —Literature Available

NICOR Marine Inc. and Sonat Subsea Services Inc. recently announced that they have entered into a cooperative agreement to offer underwater services in the Gulf of Mexico. A NICOR Marine vessel has been modified to accommodate

Sonat Subsea saturation diving and remotely operated vehicle equipment and personnel.

NICOR Marine and S & H Diving Corporation, the U.S. operating division of Sonat Subsea Services, will provide these sophisticated diving services via the 216-foot diesel-electric-powered M/V Acadian Seafarer, renamed M/V NICOR Subsea.

The M/V NICOR Subsea will be available this month for work in the Gulf of Mexico following extensive

retrofitting, to include: addition of a moonpool; stern roller; four point mooring system capable of 1,000-foot water depths, 12-man saturation diving system; quarters for 39 crew members; and remotely operated vehicle (ROV) capability.

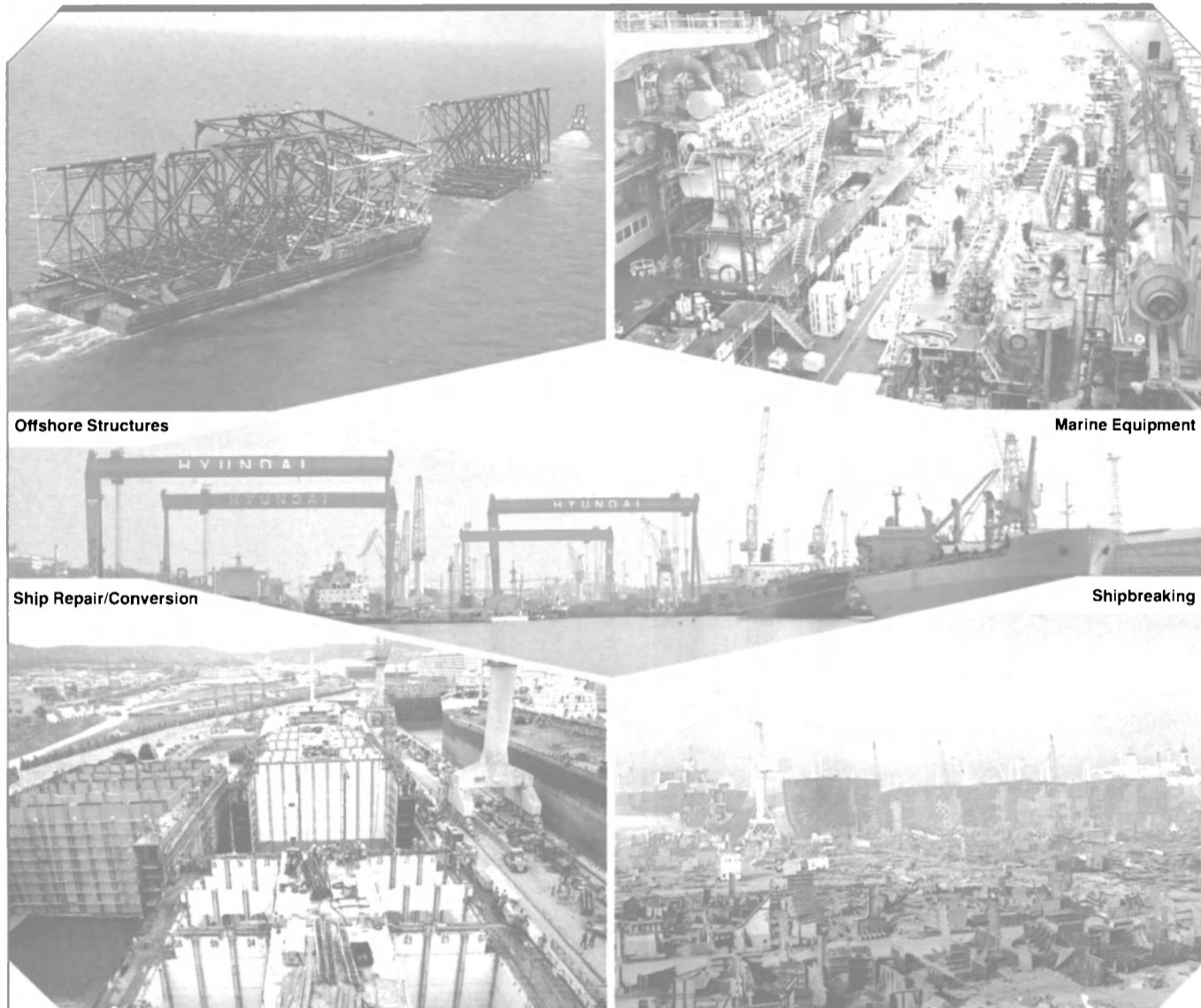
NICOR Marine, a subsidiary of NICOR Inc., is headquartered in New Orleans, La., and provides offshore rig support, vessel chartering, ocean towing, seismic research assistance and other offshore services.

It currently operates 37 vessels. NICOR Inc., based in Naperville, Ill., is a diversified energy company with assets over \$2.4 billion.

Sonat Subsea Services, a subsidiary of Sonat Inc., provides high technology underwater services to the offshore energy industry. Sonat Inc., headquartered in Birmingham, Ala., is a company engaged in finding and producing oil and natural gas; field services associated with oil and gas operations; and transportation of energy products.

For free literature containing full information on the underwater services offered by NICOR Marine and Sonat Subsea in the Gulf,

Circle 33 on Reader Service Card



Offshore Structures

Marine Equipment

Ship Repair/Conversion

Shipbreaking

We Do More Than Shipbuilding

At Hyundai's Ulsan yard, we do much more than just shipbuilding. No other yard is more extensively involved in marine industries than Hyundai's Ulsan yard where the full cycle of ship's life is cared for.

The incomparably extensive activities of Hyundai Heavy Industries and our affiliates in ship-related industries include

offshore structures, marine equipment, ship repair / conversion and shipbreaking.

Not surprisingly, we're also a favorite with suppliers from all over the world and we ensure that Hyundai remains an ideal environment for clients and suppliers alike.

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Circle 30 on Reader Service Card

Tech Development Appoints Freeman Sales Manager

Robert Graham, director of marketing and sales for Tech Development, Inc. of Dayton, Ohio, recently announced the appointment of **Tom Freeman** as sales manager.

Mr. Freeman was previously the sales manager for the StartMaster Division of Sycon Corporation and held a succession of related positions with Euclid Inc. He holds a mechanical engineering degree from the University of Minnesota.

Tech Development manufactures the Turbostart™, and is the world's only manufacturer of turbine air starters for reciprocating engines.

For more information and literature from Tech Development,

Circle 34 on Reader Service Card

Hydraulic Pump Offers Up To 21,300 PSI Pressure —New Literature Available

Goltens of Brooklyn, N.Y., is offering literature on their hydraulic G-Pump. The four-page brochure offers technical data, applications advice and accessories for this unique pump.

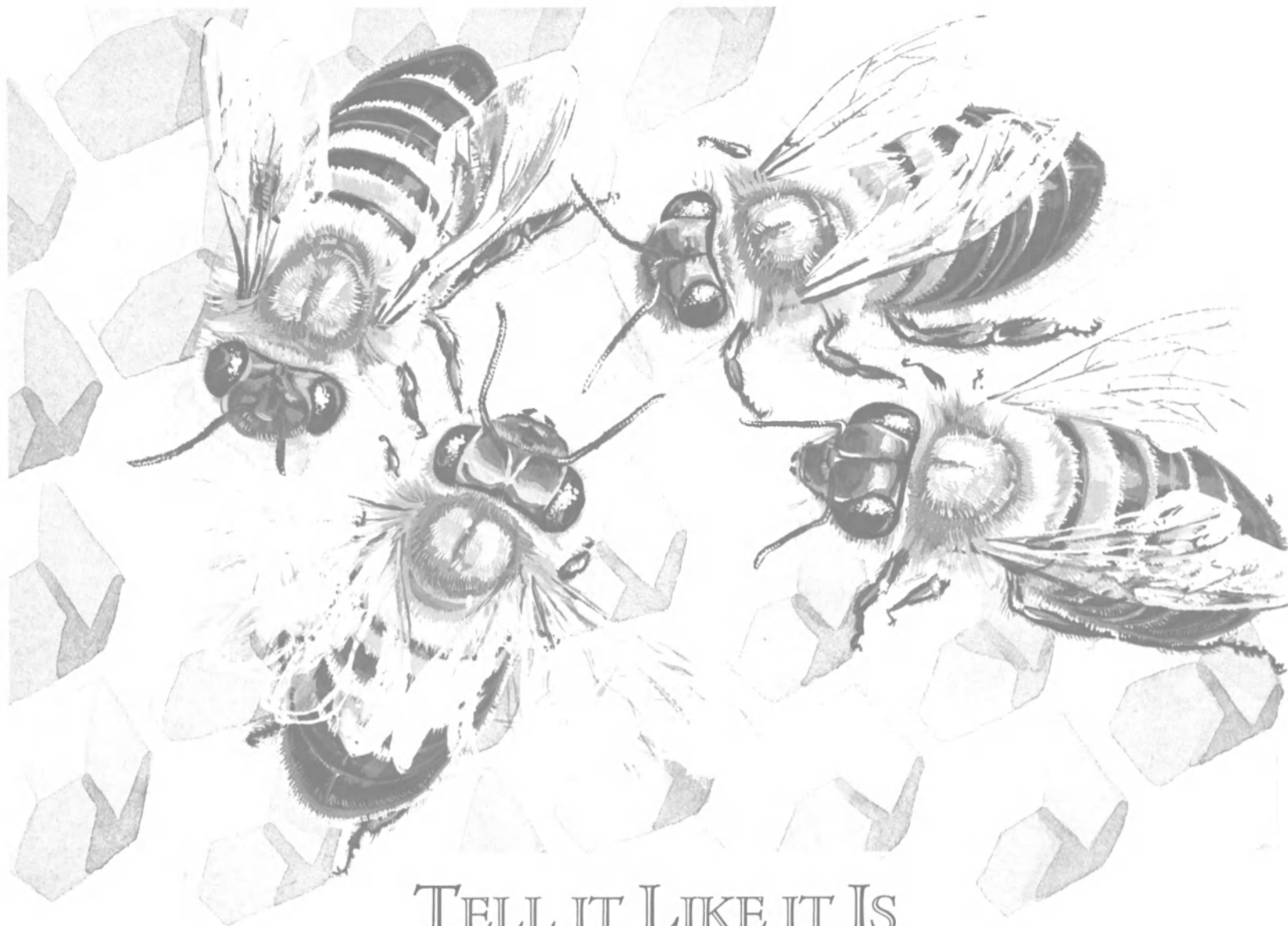
The G-Pump is a portable hydraulic pump. **Bill Duffy**, Goltens' marketing and sales manager, states: "This portable pump offers more power than any equivalent portable on the market. It will supply and maintain an impressive 21,300 psi (1,500 kg/cm²) of pressure. The G-Pump, even at 21,000 psi of pressure, is extremely accurate, reliable and versatile."

Although it is air operated it can be used manually with the hand pump incorporated in each unit. Special models are available for offshore drill rigs and other extreme environment conditions.

"But most impressive is the price," says Mr. Duffy. "This unique, high quality, reliable equipment is surprisingly inexpensive."

For further information and a free copy of the brochure from Goltens,

Circle 41 on Reader Service Card



TELL IT LIKE IT IS

Nature's all-around communications champ is the everyday honey bee. Workers, in an intricate dance, transmit the information needed by the hive to gather food for survival. Flower type, source, quality, direction, and distance are all clearly indicated. When ranges are short, for example, the bee simply alternates direction in a circular motion. For longer ranges, a more complicated figure 8 is used. In this case the straight portion of the movement between loops shows direction relative to the sun and the intensity of the dance indicates distances, which can be well over a mile.

In marine communications, Furuno also covers all ranges with a product line providing

the most desired features, plus traditional Furuno quality.

The FM-252 is a fully synthesized radio-telephone covering all available marine VHF-FM and weather channels, with frequency selection via touchpad keys. Dual-channel scanning and digital readout of selected frequency are standard.

For longer ranges, the Furuno/skanti TRP 8258 S offers 250-watt PEP output power and is fully synthesized from 1.6 to 30 MHz. An exceptionally fast automatic antenna coupler and microprocessor control of all functions permit ARQ compatibility.

Look to Furuno for your total communications needs. For complete information, visit one of our more than 200 authorized dealer outlets, and be sure to ask about our exclusive Life-Line warranty program.

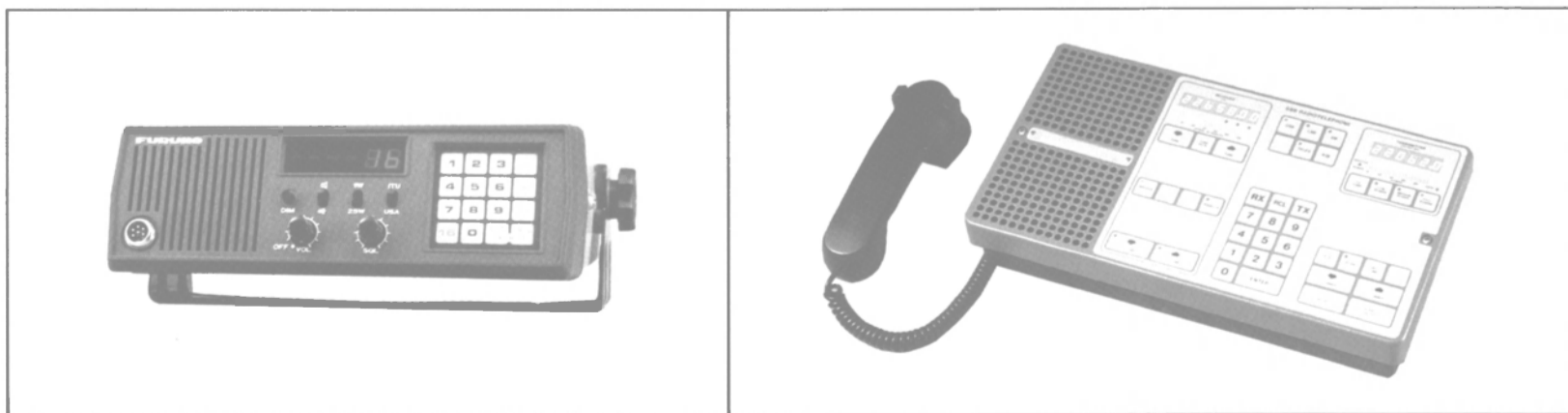
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Furuno. Choice of the professionals.



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**Hudson Joins
North American Towing
As Special Representative**

North American Towing Company president **Warren A. Jackman** announced the appointment of **Alfred R. Hudson** as special representative for marketing. Mr. **Hudson** is a former vice president of Ceres Terminals, Inc., one of the

largest stevedoring firms in the U.S. His responsibilities, effective immediately, include the marketing of North American's services to vessel owners and operators in both the U.S. and overseas.

North American provides tug services in the ports of Chicago, Burns Harbor, Duluth and Superior. Mr. **Hudson's** more than 20 years of experience in the international maritime industry suits him well for his new position. A U.S. Merchant Ma-

rine Academy graduate, he has served in management and executive positions ranging from general manager to vice president of grain and general cargo stevedoring, agency and terminal operations to his internationally oriented post at Ceres.

North American Towing Company maintains corporate offices in Chicago and Duluth.

**Marshall Appointed
General Manager At
Waterfront Corporation**



Willard J. Marshall

Willard J. Marshall has been named general manager for engineering, estimating, and construction at Waterfront Corporation of Philadelphia, it was announced by **Cynthia A. Hudson**, president.

Mr. **Marshall**, who has more than 38 years of experience in marine construction, will be directly responsible for all day-to-day operations of the commercial diving and marine construction company. Prior to joining Waterfront, he was employed by Raymond Concrete Pile Company of Houston, by Spencer, White and Prentis, Inc. of New York City, and by Lee Turzillo Contracting of Richfield, Ohio.

**Oil Monitor/Separator
Allows Operators To Meet
MARPOL 73/78 Ruling**

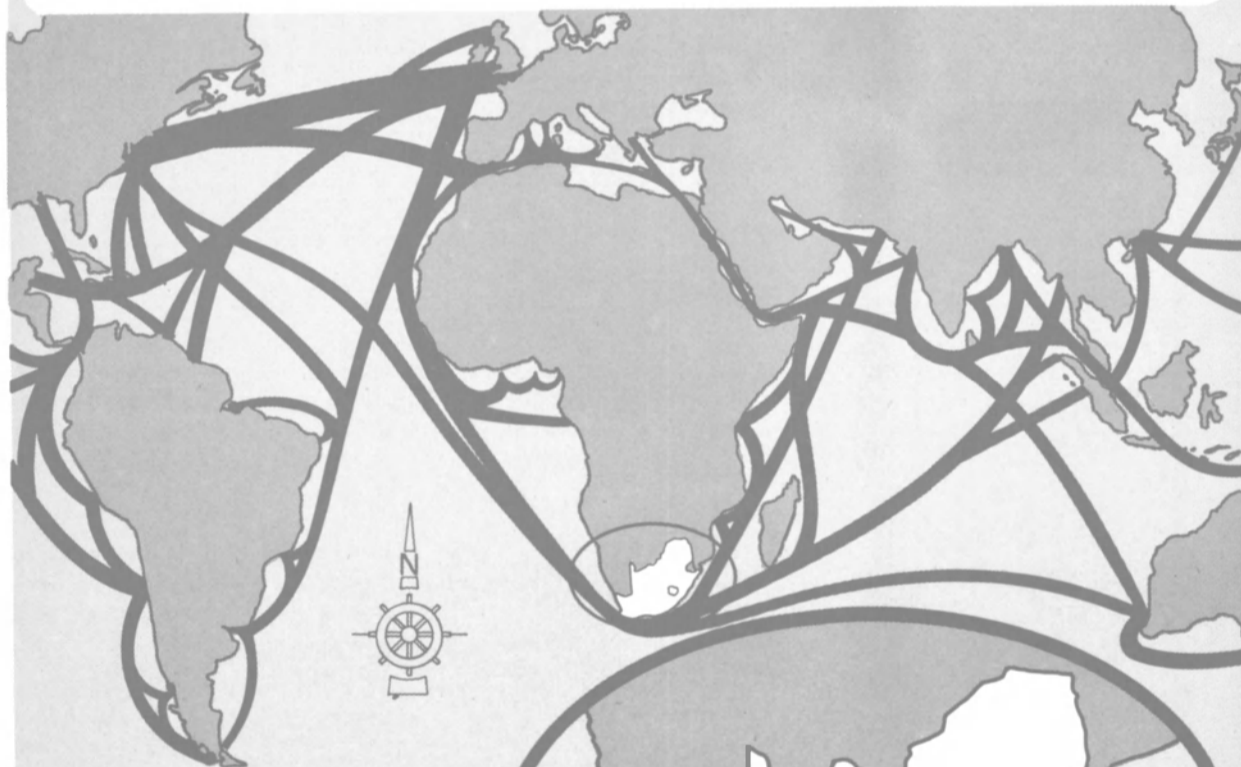
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Previously available in Europe, the JOWA Oil Content Meter & Alarm System monitors the oil content in bilge and ballast water and initiates an alarm when oil content exceeds a user set contamination level. The monitor is compact, easy to install and operate, and highly accurate and dependable.

The JOWA OIL-A Oily Water Separator, also distributed by McNab, prevents oil pollution in discharge water by reducing oil content to within acceptable levels. The separator is available in capacities ranging from 0.1-10.0m/h and is equipped with automatic start/stop from bilge tank. Over 400 of these units are currently in use, a tribute to the separator's durability and low installation and maintenance costs.

McNab also manufactures torque and shaft horsepower monitoring systems, propeller thrust meters, speed through water logs, computer-based fuel efficiency monitors, salinity and chemical dosing monitors, and marine window wipers.

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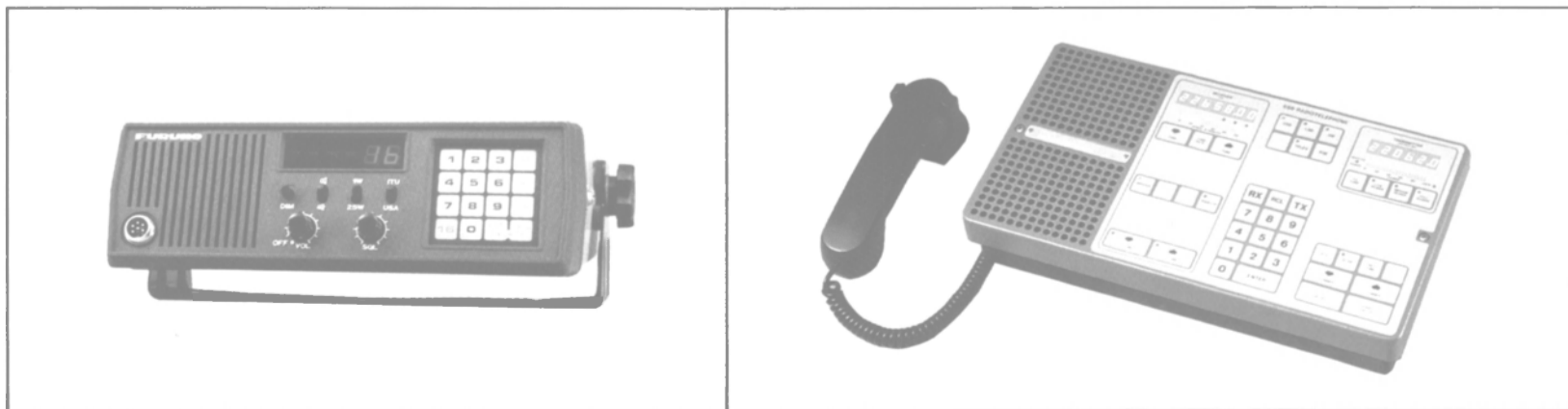
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Todd Awarded \$246,800 MarAd Contract To Repair Training Ship Golden Bear

The U.S. Transportation Department's Maritime Administration has awarded a \$246,800 contract to Todd Pacific Shipyards Corporation's San Francisco shipyard for drydocking and underwater repairs

to the training vessel Golden Bear.

The work includes repairs under regulations of the U.S. Coast Guard and the American Bureau of Shipping. It was scheduled to be completed in 10 working days at the end of last month.

MarAd provides the Golden Bear to the California Maritime Academy in Vallejo for use as a training ship for midshipmen.

McDermott Elects Barrow To Board Of Directors

James E. Cunningham, chairman of the board and chief executive officer of McDermott International, Inc., announced recently that **Thomas D. Barrow**, retired vice-chairman of the Standard Oil Company (Ohio) and former chairman and chief executive officer of the

Kennecott Corporation, has been elected to McDermott's board of directors.

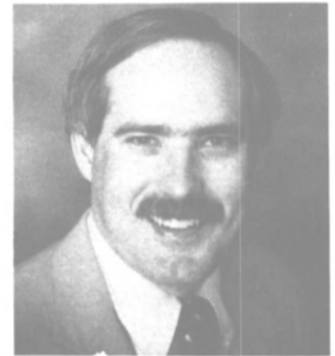
At Sohio, Mr. Barrow was responsible for oil and natural gas exploration and production activities, corporate planning, research and development, engineering and technology. He also managed the worldwide minerals business of Kennecott.

Prior to joining Kennecott in 1978, Mr. Barrow was senior vice president and director of the Exxon Corporation. He began his career as a field geologist for Humble Oil & Refining Co. in 1951 and held positions with Humble, Esso Exploration and Exxon before joining Kennecott.

Mr. Barrow graduated from the University of Texas in 1945. He earned an MA in geology from the University of Texas in 1948, and a PhD in geology from Stanford University in 1953.

McDermott International, Inc., is a leading energy services company. The company and its subsidiaries provide worldwide engineering and construction services for industrial and commercial facilities onshore and to oil and gas industry offshore.

Dillingham Maritime Forms New Unit—Van Dawark Named Executive VP



Tom Van Dawark

David Ballash, president and chief executive officer of Dillingham Maritime, recently announced a restructuring of several companies into a new operating unit, and the appointment of **Tom Van Dawark** as its executive vice president and chief operating officer.

According to Mr. Ballash, the new operating unit, known as Dillingham Maritime Transportation, consists of Foss Launch & Tug Co., Foss Alaska Line, Dillingham Maritime Services all headquartered in Seattle, Wash.; Pacific Towboat, Long Beach, Calif.; and Dillingham Tug and Barge, and Young Brothers, Ltd., Honolulu, Hawaii.

In making the announcement, Mr. Ballash said: "The unit and position were created to increase management focus on Dillingham Maritime's transportation line of business. Major services provided within the Pacific Basin include ship assist, vessel bunkering, ocean towing, and common carrier operations. Emphasis will be placed on coordinating marketing, sales and operations efforts aimed at maximizing the utilization of vessels, resources and service to our customers."

Only Westfalia's On-Demand Purifying System Removes All the Dirt and Water from your 1010 fuel.

Whether your fuel oil is heavier or lighter than water, only Westfalia's two-stage Unitrol/Secutrol system assures maximum purity even under widely varying feed conditions. Here's why.

On-demand vs timer-controlled de-sludging.

Other oil purification systems are timer-controlled, which means they de-sludge only at pre-set intervals. If heavy seas stir-up the "muck" in your fuel tanks, the intervals may be too far apart. Result: dirt gets into your day tank and fuel lines, causing disastrous engine wear... In the Westfalia system, a unique sensor continuously monitors de-sludging intervals, discharging dirt and water only when the sediment-holding compartment is full. So there's no chance for dirt to get into your fuel because of too few de-sludgings — or fuel wastage from too-frequent de-sludgings.

And Unitrol and Secutrol can each be operated independently, thus adding even more flexibility.

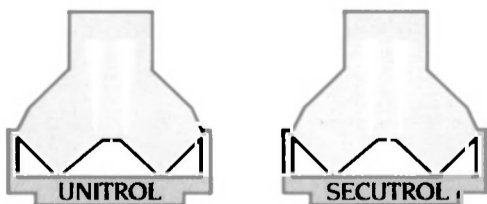
No water in fuel lines:

With Westfalia's unique design, there's no way water can enter the clean fuel line. With other systems, this is a distinct possibility.

Reliable purification.

No matter how wide the variations in density or feed characteristics, you get the most efficient, reliable purification. Automatically, with no need for gravity disc changes.

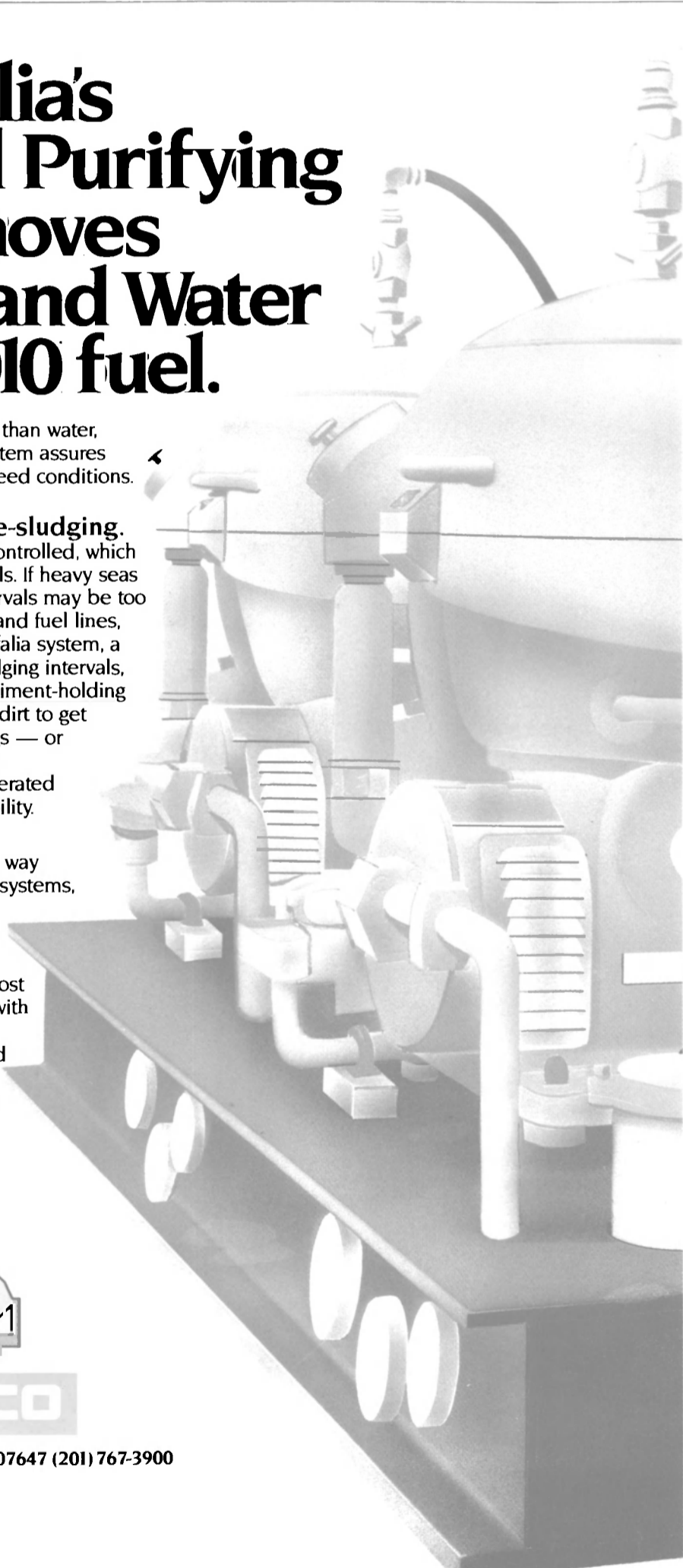
For maximum reliability we've substituted simplicity for complex electronics and intricate circuitry. Thus Westfalia purifiers are more dependable and much less likely to break down than other separators. Contact Centrico for the Westfalia system you need.



WESTFALIA
SEPARATOR

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Centrico, Inc., 100 Fairway Court, Northvale, NJ 07647 (201) 767-3900



Continental Maritime Wins \$7.4-Million Contract For Overhaul Of USS Roark

Continental Maritime of San Diego Incorporated, San Diego, Calif., was recently awarded a \$7,467,495 firm-fixed-price contract for the regular overhaul of the U.S.S. Roark (FF-1053). The work will be performed in San Diego, and is expected to be completed in March of next year. Contract funds would have expired at the end of the current fiscal year. Nine bids were solicited and six offers were received. The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-85-H-8212).

Heale Named President Of Oceanroutes To Succeed Snideman

Simon J.N. Heale has recently been appointed president of Oceanroutes, Inc., succeeding R.L. Snideman, who has left the company. Mr. Heale joined Oceanroutes in February this year as executive vice president, after spending several years in the Far East with John Swire & Sons, the parent company of Oceanroutes.

After graduating from Oxford in 1975, he qualified as a chartered accountant for Price Waterhouse before joining the Swire Group in 1979. After a period in Hong Kong, he was transferred to the finance department of Swire Japan, with promotion to finance director within three years. His duties in Japan included management of a Korean joint venture shipping company and complete financial responsibility for shipping agencies, container terminals, liner shipping operations, and property.

Oceanroutes has been delivering worldwide ship routing, weather data, and forecasting services since 1952. It became a Swire Group company in 1979.

For further information and free literature on the company's services,

Circle 44 on Reader Service Card

New Positions For Three Managers Announced By Zapata Gulf Marine

Three managers have been named to new positions with Zapata Gulf Marine Corporation's domestic operations, **Larry T. Rigdon**, vice president-North American operations, has announced.

Based in the Harvey, La., office, **B.B. Breland** has been named manager-tugs and barges. Reporting to him are **John Kuchta Jr.**, who has been appointed manager-construction tugs and barges, and **Wayne Martin**, who has been named manager-ocean towing.

Mr. Breland formerly served as manager-India Division with Gulf Fleet Marine Corporation, which

merged with Zapata Marine Service and Jackson Marine Corporation to form Zapata Gulf late in 1984. He joined Gulf Fleet in 1977 as a marketing representative before being promoted to manager-domestic supply boat division, and then manager-towing division in 1980. His previous experience includes 28 years with Exxon, where he served in various administrative and operations positions.

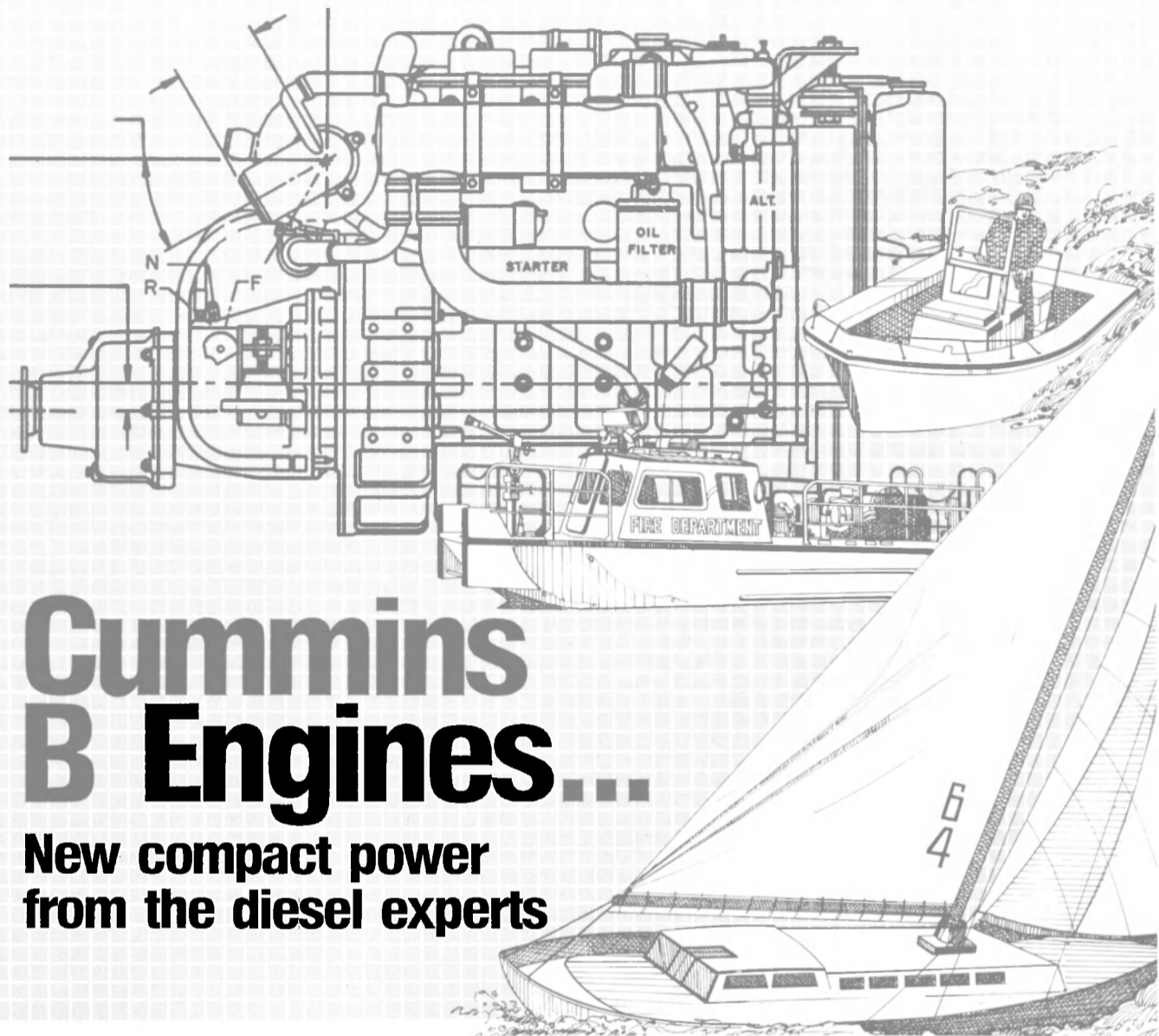
Mr. Kuchta was previously mar-

keting director-construction tugs, for Zapata Gulf. He joined Gulf Fleet in 1978 as European sales director, and was promoted to manager-North Sea in 1979. In 1981 he was transferred to the New Orleans office where he served as sales representative responsible for New Orleans sales.

Prior to assuming his new position, Mr. Martin served first with Gulf Fleet and then with Zapata Gulf as operations manager-domes-

tic towing. He worked for Jackson Marine as port captain-Houston from 1970 to 1973. He then joined Gulf Fleet as port captain-North Sea and was transferred to Amsterdam as port captain in 1975. In 1978 he joined Newpark Marine as division manager-Mexico.

With a fleet of 307 vessels, Houston-based Zapata Gulf Marine Corporation is the largest operator of oilfield service and supply vessels in the world.



Cummins B Engines...

New compact power from the diesel experts

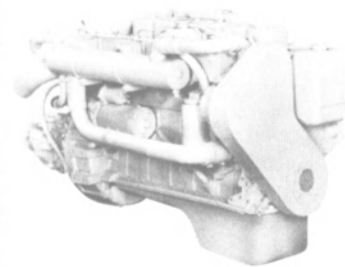
Cummins new in-line 4 and 6 cylinder B Series diesel engines are just what the marine industry has been waiting for. Available for a wide range of marine applications, the B Series was designed with the same tough criteria for fuel efficiency, reliability and quality that has made Cummins the leader in diesel technology.

Five years of development and refinement have gone into making the B Series a durable, light-weight, fuel efficient, cost effective package. Turbocharging and four cycle design provides longer valve, piston and ring life along with improved fuel economy, reduced

emissions and quieter operation. And because they contain up to 40% fewer parts than other engines their size, they offer ease of service with no special tools required for servicing, lower maintenance costs and high reliability.

Cummins extensive parts and service network is one of the largest in the world and is always ready to provide complete technical assistance along with every service need from routine dockside maintenance to complete engine overhauls.

Contact your Cummins representative today. Nobody knows Diesels better.



Model	Intermittent Duty BHP @ RPM	Displacement Cu. In.	Dimensions LxWxH (Inches)	*Weight (Lbs.)
4B3.9-M	76 @ 2500	239.3	*30.8 x 26.2 x 31.6	730
4BT3.9-M	100 @ 2500	239.3	49.1 x 26.2 x 31.6 Rear Mt. Turbo with HBW 360 A Marine Gear	765
6BT5.9-M	152 @ 2500	359	62.9 x 26.2 x 33.7 Rear Mt. Turbo with 72CR2 Marine Gear	975

*Does not include Marine Gear



Circle 10 on Reader Service Card

Hudson Joins North American Towing As Special Representative

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Marshall Appointed General Manager At Waterfront Corporation



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Oil Monitor/Separator Allows Operators To Meet MARPOL 73/78 Ruling

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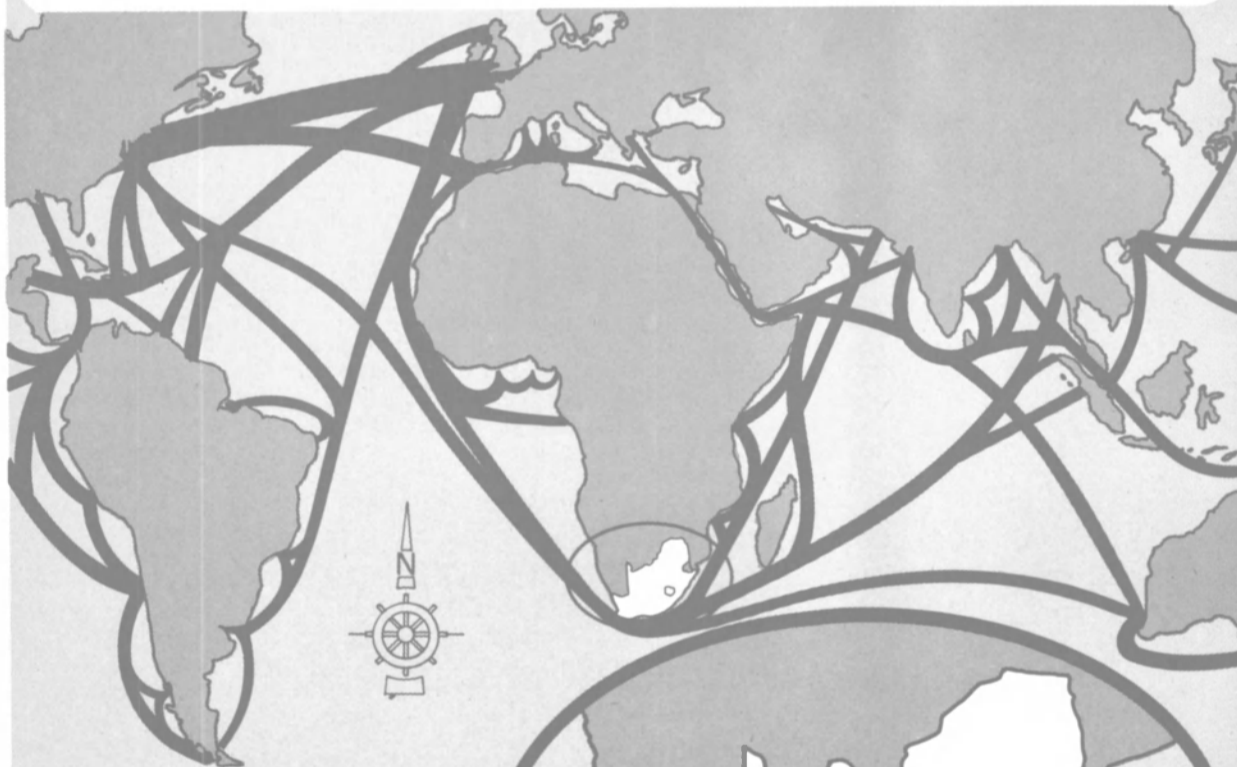
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For more information on the JOWA oil monitor and oil separator, or other products available from McNab,

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Circle 152 on Reader Service Card

**Tracor Applied Sciences
Awarded \$5.9 Million For
FFG-7 Frigate Services**

Tracor Applied Sciences Incorporated, Rockville, Md., was awarded a \$5,946,004 cost-plus-fixed-fee contract for engineering and technical services in support of the FFG-7 frigate class ships. The work, which is expected to be completed November 12, will be performed in Rockville. Contract funds would not have expired at the end of the current fiscal year. The Naval Sea Systems Command, Washington, D.C. is the contracting activity (N00024-85-C-2178).

**AT&T Awarded
\$5.4-Million Contract For
Oceanographic Services**

AT&T Technologies Incorporated, Greensboro, N.C., was recently awarded a \$5,468,500 modification to a previously awarded cost-plus-fixed-fee contract for oceanographic services. The work will be performed in Greensboro, and is expected to be completed on September 30. Contract funds would have expired at the end of the current fiscal year. The Space and Naval Warfare Systems Command, Washington, D.C., is the contracting activity (N00039-85-C-0093).

**Free Brochure On
Newco Marine Valves
Offered By Newman's**

Newman's Inc. is offering a free brochure on the company's line of Newco marine valves.

The publication features text on gate, globe, check and angle valves. Cross-section diagrams, as well as black and white photographs accompany the text.

According to the brochure, Newco marine valves have been specifically designed for high reliability operation in the confined, corrosive atmosphere prevalent in the marine industry. The valves meet the standards demanded by such agencies as the American Bureau of Shipping, U.S. Coast Guard and the U.S. Navy. The brochure states that each valve is backed by Newman's warranty and by the full resources of Newman's Inc.

Besides their standard marine valves, Newman's also offers the following optional features: soft seating in all bolted bonnet valves; complete installment and full testing gear, electric or pneumatic operators; and globe and angle stop-check valve versions.

Newman's manufactures the body/bonnet of the marine valves in cast iron, ductile iron, cast carbon steel and forged carbon steel. The construction materials used for the

trim of the valves are bronze, nickel copper, 13CR stainless, 316 stainless, iron, and hardfaced.

Newman's Inc. has divisions in Oklahoma, Texas, New Jersey and Oregon, as well as Canada, Europe and the Far East.

For a free copy of the Newman's Inc. brochure on Newco Marine Valves,

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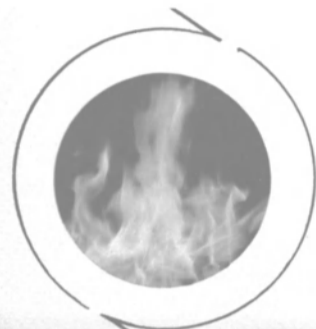
**GE Elects Joel Tenzer
A Corporate Vice President**

Joel Tenzer was recently elected a corporate vice president by General Electric Company's board of directors.

The appointment further highlights the company's commitment to the marine automation industry.

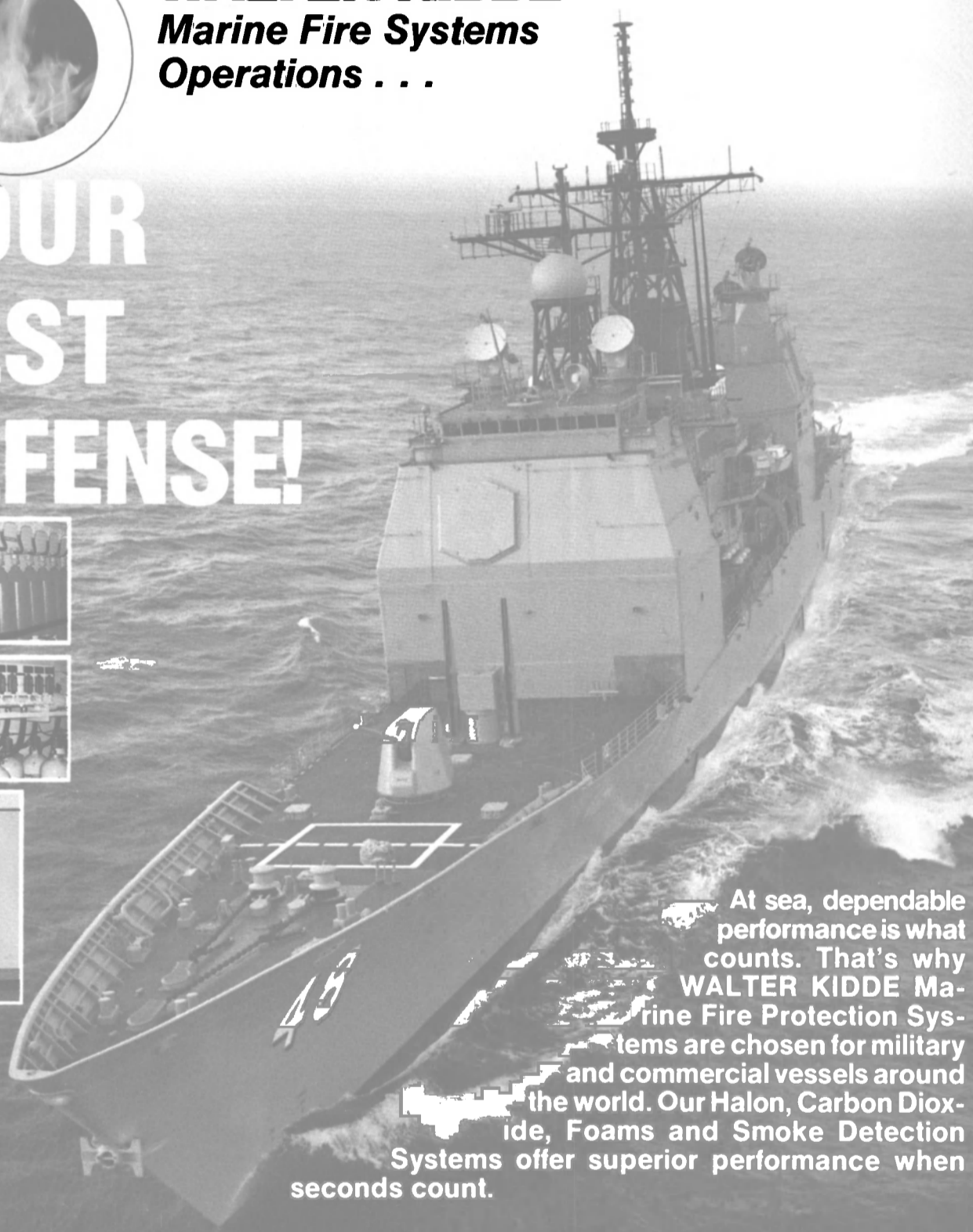
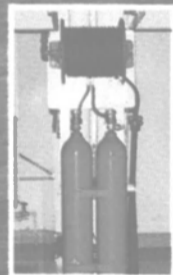
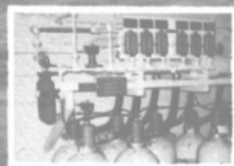
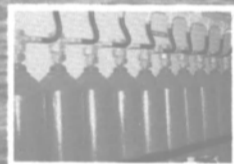
Mr. Tenzer is currently general manager of GE's Drive Systems Operations, in Salem, Va., which includes the D.C. Motor & Generator Department in Erie, Pa., and General Electric's Canadian drive system business.

Drive Systems Operations provide sophisticated drives, controls and motors for a variety of automated industries, including marine.



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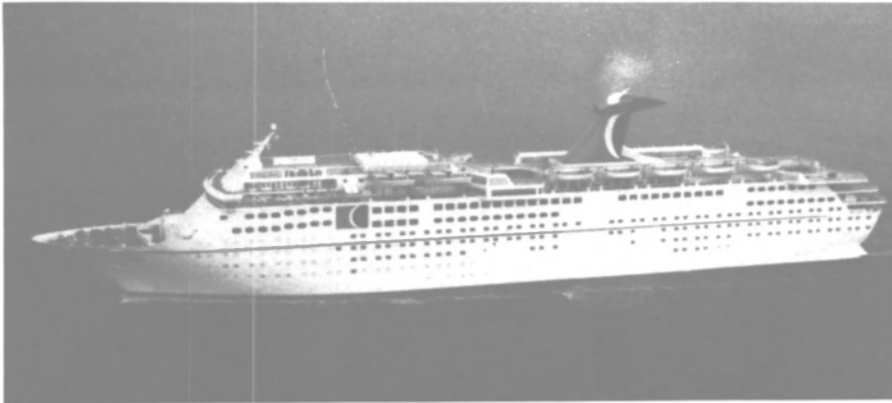
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Luxury Cruise Liner 'Holiday' Delivered By Aalborg Shipyard

The 46,052-grt luxury cruise liner Holiday (shown above on sea trials) has been delivered by Aalborg Vaerft in Denmark to Carnival Cruise Lines Inc. of Panama. She is designed and built as a steel-hulled, twin-screw/rudder, passenger cruise ship with raked stem, transom stern, bulbous bow, bow and stern thrusters, and fin stabilizers.

The liner has an overall length of about 727 feet, beam of 91.86 feet, depth to upper deck of 69 feet, and

design draft of 24.6 feet. A total of 716 standard cabins are arranged on decks 4, 5, 6, and 7, and 10 deluxe verandah suites are located on deck 11 forward. Total passenger capacity is 1,794; the ship carries a crew of 646 persons.

The main propulsion plant comprises two Sulzer low-speed diesel engines, type 7 RLB 66, with integral thrust bearing, each coupled directly to a KaMeWa controllable-pitch propeller with highly skewed

blade design. The main engines each have a maximum continuous rating of 15,770 bhp at 140 rpm.

The Siemens propulsion control system, which includes automatic main engine overload control as well as an engine load increase feature, incorporates different operating modes, including: constant-speed operating mode at 136 rpm for shaft alternator operation; and two combination operating modes—one thrust mode and one pitch mode—where the engine speed, propeller thrust, and propeller pitch are controlled according to a pre-established curve.

Normally at sea, the ship will be operated in the constant-speed mode at 136 rpm, and the shaft-driven alternators will feed the main switchboard. As it is not the intention to run the two shaft alternators in parallel, the main switchboard is capable of being operated in a "split" mode by means of a section breaker on the bus bar. In this mode each alternator will feed half of the main switchboard.

The vessel's hull form has been developed to give good propulsion and seakeeping performance with due regard to large propeller tip clearance requirements at the various design conditions. The lines have been designed to give the smallest possible resistance, with the bulbous bow designed for a draft of 24.6 feet and optimized for a service speed of 19.5 knots.

Comprehensive model tank experiments were carried out at the Danish Ship Research Laboratory, including maneuvering, steering, seakeeping, and berthing tests. The vessel is provided with stern fins designed to optimize the water flow to the propellers for further reduction of vibration and noise levels.

The basic hull, the hull superstructure, the funnel, and the masts are made completely of mild steel as a fully welded structure corresponding to the requirements of Lloyd's Register of Shipping +100A1. The entire steel structure of the vessel, in particular the aft body section, has been carefully designed to be free from vibration that might disturb the comfort of the passengers and the crew. Exciter tests were carried out at an early stage of outfitting to confirm the calculated natural frequencies of the primary structure and panels.

The accommodation areas of approximately 40,000 square meters have been designed in accordance with Aalborg Vaerft's modular system, insuring high quality in the assembling of the components on board during construction as well as easy maintenance during the lifetime of the ship. To insure optimal design of the passenger cabins, a full-size mockup of an inside and an outside cabin, including shower and toilet units and a section of the adjacent corridor, were made at an early stage.

Generally, all linings and divisional bulkheads in the passenger and crew cabins, living quarters, and service rooms are 50-mm thick. The core material is non-toxic rock-wool composition faced with 0.7-mm, PVC-covered galvanized steel

Holiday Major Suppliers	
Main engines (2)	Sulzer
Engine controls	Siemens
Propellers (2) & thrusters (4)	KaMeWa
Steering gear	Frydenbo
Stabilizers	HDW
Alternators (5)	Siemens
Alternator diesels (3)	Wartsila Vasa
Power takeoffs (2)	Lohmann & Stolterfoth
Switchboards	Merlin Gerin
Oil-fired boilers (2)	Aalborg
Distilling plant	Atlas
Air conditioning plant	Semco
Compressors	McQuay
Sprinkler & alarm system	Semco
Halon system	Wormald
Deck machinery	Norwinch
Anchor	SPEK
Side doors	Aalborg
Watertight doors	Schroder
Windows	Harndrup
Elevators	Dan
Lifeboats	Harding
Life rafts	Nordisk
Radars (3), Loran C, facsimile recorder, speed log	Raytheon
SatNav system	Magnavox
Radio direction finder	Furuno
Gyrocompass, autopilot, & magnetic compass	Plath
Steering controls, rudder indicator	EMRI
Communications equipment	Sailor
TV & PA systems	Phillips
Coatings	International

plate. In other public spaces, linings and divisional bulkheads are of the same nature, with special attention to the decorative aspects.

Except for certain parts of the public spaces, where special features are introduced, Dampa continuous ceiling systems, consisting of prestressed, baked enamel steel/aluminum panels, are used throughout the accommodations. Sound-absorbing decks consisting of mineral wool slabs with steel top are installed in the crew accommodations above the engine rooms as well as below the bandstand and dance floors to provide maximum insulation against noise.

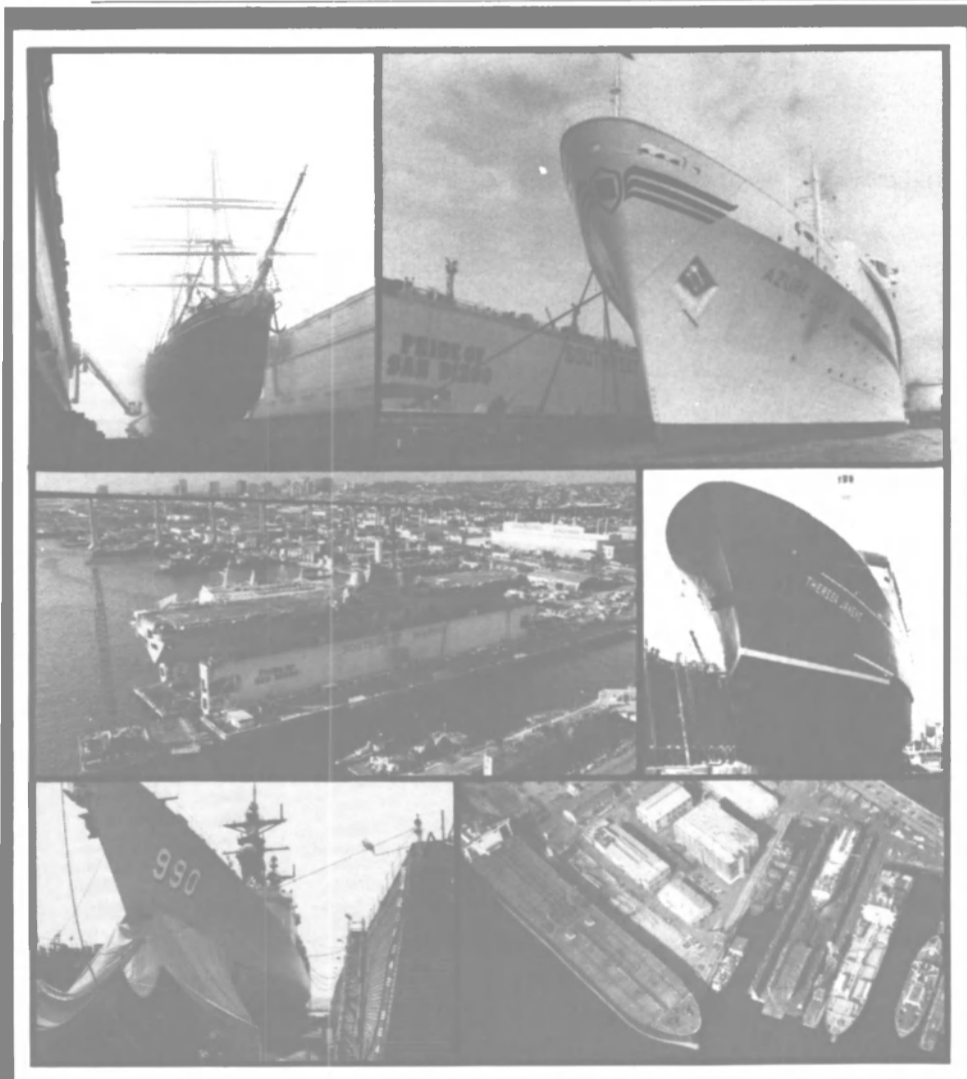
The special funnel design developed for the cruise ship *Tropicale*, delivered to Carnival Cruise Lines by Aalborg Vaerft in 1981, is also used on the *Holiday*. Also, the totally enclosed wheelhouse design extending from side to side with panoramic windows all around is another feature transferred from the *Tropicale*.

The *Holiday* is a typical example of the products from the Ship Division of Aalborg Vaerft—a highly complex passenger vessel of the most advanced design and comprising the latest technology, purpose-built to insure full compatibility with the requirements of the owner.

Free Guide Lists Major Pacific Ocean Radiofacsimile Schedules

Alden Electronics, Inc. is offering a free guide that lists the broadcast schedules for all major marine weather radiofacsimile transmitters covering the Pacific Ocean.

The guide was prepared by the NOAA/Northwest Ocean Service Center in Seattle, Wash., and reprinted, with permission, by Alden.



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It lists all broadcast frequencies, times and charts for each transmitter from the U.S. West Coast to Australia. It also lists National Weather Service marine warnings, broadcasts of AM-FM stations, Canadian voice marine weather broadcasts, warnings by marine radiotelephone stations and high seas radiotelephone weather broadcasts for the North Pacific.

Also obtainable free of charge from Alden is literature describing radiofacsimile transmission schedules available throughout the world, including the U.S. East Coast and the Gulf of Mexico.

Alden Electronics, Inc. is one of the world's leading manufacturers of quality Marinefax weather chart recorders.

For further information and a free copy of the guide from Alden Electronics,

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Kruziki Is Appointed Manager-Parts Marketing For Waukesha Engine



Thomas J. Kruziki

Thomas J. Kruziki has been promoted to the position of manager-parts marketing for Waukesha Engine Division, Dresser Industries, Inc. He will be responsible for all parts products, pricing, merchandising activities, and parts order entry.

Mr. **Kruziki** joined Waukesha in 1975. His most recent assignment was that of manager-service parts products.

Waukesha Engine Division manufactures heavy-duty diesel and gas engines for the marine, petroleum, off-highway equipment, and power generation markets.

Management Promotions For Rigdon, Dowie & Cox Announced By Zapata

Three managers have been named to new positions with Zapata Gulf Marine Corporation's domestic operations, **Kenneth W. Waldorf**, Zapata Gulf chairman and chief executive officer, has announced.

Larry T. Rigdon has been named vice president-domestic operations with responsibility for the Gulf of Mexico and North America, including Alaska. **Tom Dowie** has been appointed manager-traffic and marketing, and **Wally Cox** has been named sales manager-domestic operations/Gulf of Mexico. Mr. **Cox** is based in Houston headquarters, the others are located in the

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Harvey, La., office.

Prior to his appointment, Mr. **Rigdon** served two years as vice president-domestic operations for the Gulf Fleet Marine Corporation. Gulf Fleet merged with Zapata Marine Service and Jackson Marine to form Zapata Gulf in late 1984. Mr. **Rigdon** joined Gulf Fleet in 1976 as administration manager-Egypt. He transferred to New Orleans in 1978 as controller, and was named supply

vessel manager in 1979. He was appointed division manager-Mexico in 1981.

Mr. **Dowie** formerly served with Gulf Fleet for two years as manager-traffic with responsibility for all the company's vessels. From 1976 to 1983 he was traffic manager for offshore tugs based in New Orleans.

Mr. **Cox** joined Gulf Fleet in 1977 as a sales representative based in Lafayette, La. In 1981 he was pro-

moted to domestic sales manager with responsibility for marketing and sales of all Gulf Fleet vessels in domestic waters, including Alaska. Prior to joining Gulf Fleet, he served as area manager for W-K-M Valves in Lafayette, La.

With a fleet of 317 vessels, Houston-based Zapata Gulf Marine Corporation is the largest operator of oilfield service and supply boats in the world.

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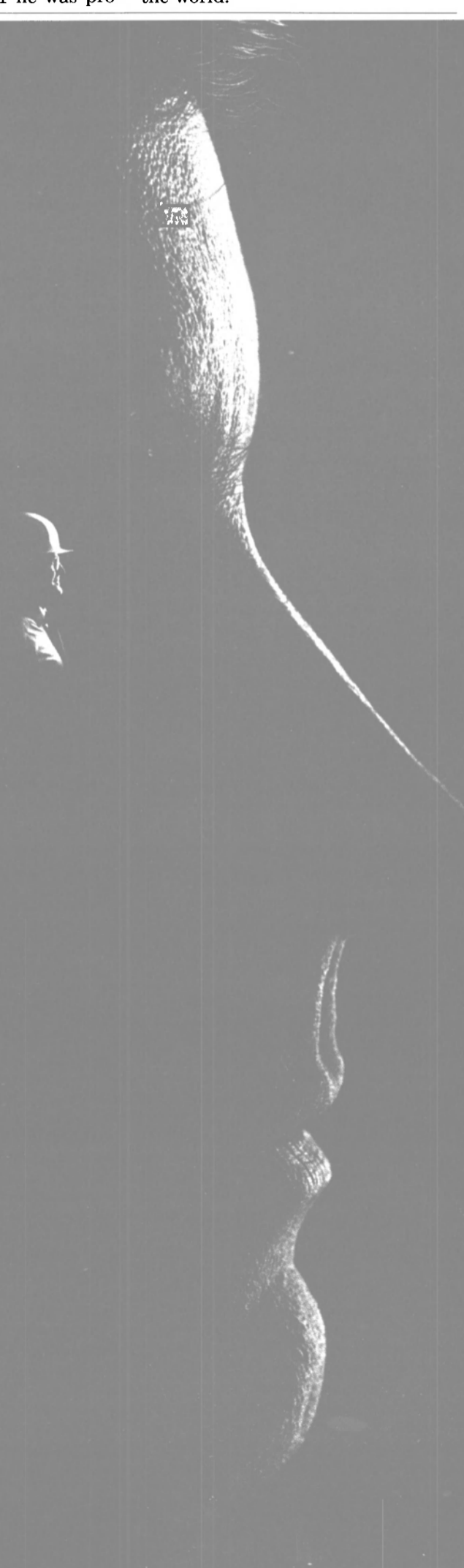
A computer program developed specifically for analyzing the claims of marine and oil & gas operators helps us pinpoint problem areas in their operations, show them how much they're spending on deductibles and reduce overall costs.

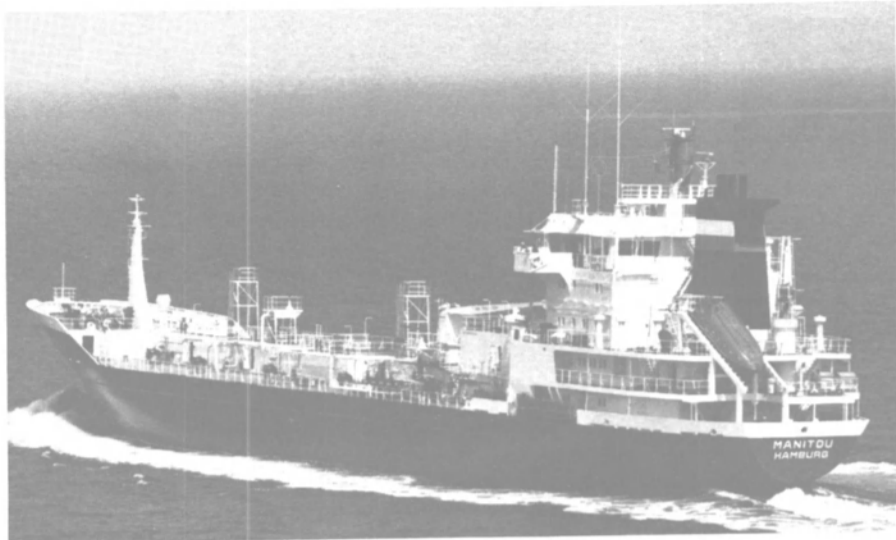
We have marine and oil & gas safety engineers on staff—a unique service among insurance brokers. Our safety and loss control studies have helped numerous clients reduce personal injuries and equipment downtime—in addition to lowering the cost of their coverage.

Most important of all, we'll be there when you need us—because we're committed to providing our clients with highly personalized service. If you'd like us to review your marine or oil & gas coverage, please contact Wm. Keith Hargrove.



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Energy-Saving Tanker 'Manitou' Delivered By Lindenau Shipyard

The Paul Lindenau Shipyard in Kiel, West Germany, recently delivered the energy-saving, IMO Type II oil/chemical tanker Manitou (photo) to Atlantic-Rhederei F. & W. Joch of Hamburg. This specialized tanker is the fourth of a series that the Lindenau yard developed together with the shipping company.

Built for worldwide trading and classed by Germanischer Lloyd, the Manitou has an overall length of 380 feet, beam of 51.8 feet, depth to main deck of 30.5 feet, and draft on summer freeboard of 23.5 feet.

Main propulsion is provided by an MaK 6M551AK diesel engine with a maximum output of 3,500 bhp at 375 rpm. Service speed is 14 knots. A schottel bow thruster is installed for enhanced maneuverability. Electrical power is produced

by three diesel-driven generators and a shaft generator.

Due to the optimal lines of the hull and the internationally patented Lindenau bulbous bow, 20 percent less propulsion power is required for this vessel compared with other oil/chemical tankers with the same draft and deadweight.

The double hull construction enclosing the cargo tanks reduces the amount of energy needed to heat the cargo due to the isolated air layer. Cargo piping and heating coils are of stainless steel. All cargo tanks are coated with Camrex Camcote epoxy. Further advantages include the easy cleaning of the tanks and quicker unloading due to the slanted form of the tank bottoms.

Electronic equipment includes two Decca radars, Decca Navigator, Anschutz gyrocompass and gyropi-

lot, Atlas echo sounder, Plath radio direction finder, and Debeg radio station.

The vessel has two oil-fired boilers, and an exhaust-heat boiler that is used for preheating the heavy fuel oil, and heating water and accommodations. Under favorable conditions (high outside temperature), part of the exhaust-heat energy can also be used to heat the cargo.

The vessel meets the MARPOL Convention Annex I for oil emissions and Annex II for chemical emissions, and IMO resolutions for the control of discharge of tank-washing water and ballast water from the cargo hold area.

The Manitou is equipped with a free-fall lifeboat for 26 persons. She is said to be the first oil/chemical tanker authorized to have such a lifeboat. Two inflatable liferafts are also provided, each with a capacity for 20 persons.

Ingalls Awarded Over \$145 Million In Navy Contracts

Ingalls Shipbuilding Division, Litton Industries, Inc. (Ingalls), Pascagoula, Miss., was recently awarded a \$129.5-million Navy contract for acquisition of standard equipment and services for the 14th, 15th and 16th Ticonderoga (CG-47) guided missile cruisers.

In addition, Ingalls also has been awarded a \$15.9-million Navy contract for the regular overhaul of the submarine tender USS Simon Lake (AS-33). The ship was built in the Puget Sound Naval Shipyard, Washington, and was commissioned in November 1964. Her sister ship, USS Canopus (AS-34), was constructed by the Mississippi-based shipyard and delivered to the Navy in November 1965.

Alfa-Laval Introduces Nirex Distiller For Smaller Vessels

Alfa-Laval, Inc., Fort Lee, N.J., has introduced a new Nirex freshwater distiller designed to meet the needs of smaller vessels. Designated the JWP-26-C, the unit is a smaller version of the JWP-36-C series. The unit can be used on fishing vessels, work boats, supply boats and offshore rigs with small engines as well as vessels in excess of 2,000 dwt.

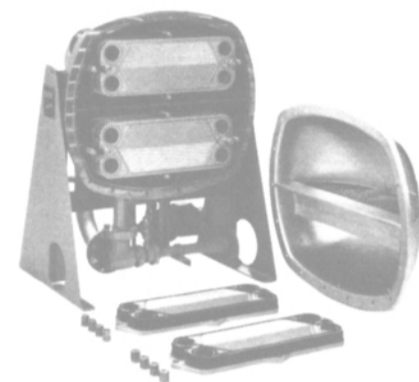
The JWP-26-C has a capacity range from 300 to 5,500 gpd, depending on the heating medium and cooling water temperatures. Distillers can be dimensioned to suit any jacket water temperature from 131-194°F, and any sea water temperature required. The quantity of fresh water produced can be altered within each size by varying the number of plates in the heat exchanger assemblies.

Weighing no more than 1,140 pounds, the unit can be dismantled easily. This allows for the subassemblies to be hand carried by two persons into the engine room without making any alterations in the room. The JWP-26-C can quickly be reassembled—just bolt it together, hook it up to water and electrical lines, and start it up with a push of a button.

The distiller comes with its own pumps, electric motors, control panel, salinometer and internal piping.

The distiller is designed to operate automatically under varying operating conditions. The freshwater salinity is monitored by a salinity indicating system with an automatic dump valve. The standard distiller delivers a constant salinity of no more than 1.5 ppm, what is said to be the lowest of any available on the market. On sensing an excessive salt content (2 ppm), the fresh water produced is automatically diverted to bilge by the dump valve.

Like all Alfa-Laval Nirex distillers, the JWP-26-C series features titanium plate heat exchangers which eliminate corrosion problems



The Nirex distiller, model JWP-26-C80, with cover removed for plate heat exchanger inspection.

and allow for increasing capacity simply by installing additional plates in both the condenser and evaporator. To further eliminate corrosion, the distiller cover is pressed from stainless steel; non-ferrous alternatives are also available.

After cleaning, normally required only once per year, the Nirex distiller delivers 100 percent capacity. The "C" in the designation refers to the combined condenser cooling and ejector water system, a key feature of the JWP-26-C. This combined system lowers installation costs and increases reliability of the distiller.

According to **Bill Huffman**, Alfa-Laval product manager-Nirex, more than 50 units have been sold worldwide since May 1984, including 12 units installed on board French fishing trawlers.




Alfa-Laval is a worldwide group offering services to marine and land-based operators in more than 125 countries. A complete line of purifiers, plate heat exchangers, and energy-saving, reliable freshwater distillers is available.


For free literature and information on the JWP-26-C,

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Tidewater Adopts \$40-Million Capital Expenditure Budget For Fiscal 1986

Tidewater Inc. has adopted a capital expenditure budget of \$40 million for fiscal year 1986 which commenced on April 1, 1985.

The budget, which will be funded largely through internal cash generation, is as follows: marine services, \$25 million; compression services, \$12 million; and oil and gas, \$3 million.

Capital expenditures for marine services include \$2.8 million for the acquisition of two 92-foot line handling tugs for the Nigerian AGIP Oil Co. Ltd., a venture of the Nigerian National Petroleum Co. and AGIP, the national oil company of Italy. The tugs will serve off the coast of Nigeria, West Africa; \$7.2 million is for the modification of towing-supply vessels in the present Tidewater Marine fleet to support the offshore oil and gas industry's new deepwater Gulf of Mexico discoveries which have prompted the need for more powerful equipment to serve floating drilling rigs in this area. Modifications include the addition of more powerful winches, remote-controlled, hydraulically-

operated anchor handling tongs, and automatic control systems which integrate the thruster, navigation and propulsion system into a single source. Another \$15 million has been dedicated to the acquisition of used additions to the fleet as opportunities for such equipment arise in the marketplace.

Expenditures of \$12 million have been dedicated to Tidewater's compression business. Of this, \$8.5 million is for the acquisition of additional natural gas compressors; \$2 million is for the construction of small "turnkey" compressor stations; and \$1.5 million is for miscellaneous equipment.

Approximately \$3 million will be applied to a modest domestic oil and gas exploration program.

Tidewater owns and operates one of the world's largest fleet of vessels supporting the offshore oil and gas industry and is active in oil and gas exploration and production and in the air and natural gas compression business. The company also has modest interests in real estate and insurance.

Dewhurst Named Northeast Marketing Director For Kort Propulsion



Peter K. Dewhurst

Gerald H. Lancaster, managing director of Kort Propulsion Company Ltd. of Brentwood, England, designers and manufacturers of propeller systems for more than 50 years, has announced the appointment of Peter K. Dewhurst as director of marketing-New England.

Mr. Dewhurst, an honors graduate of London University and engineering officer in World War II, had been vice president-engineering for Mathewson Corporation in Quincy, Mass., since 1968. he has 35 years of experience in the right angle drive

and thruster market, combined with extensive knowledge of Kort nozzle propulsion and steering techniques.

Butterworth Announces New Scamp Cleaning Station In South Korea

Butterworth, Inc., an Exxon affiliate, has announced a new Scamp® underwater hull cleaning station at Busan Harbor in the Republic of Korea. This newly established contractor, Korea Marine Engineering Company, Ltd. (KOMEKO), is managed by S.Y. Kim.


Mr. Kim, a graduate of Busan Sunub University, served in the ROK Navy and has extensive experience in underwater hull cleaning, repairs, and maintenance. KOMEKO will also offer services to Korea's West Coast from Incheon to Mozpo, to the East Coast from Mukho to Pohang, and to the South Coast from Ulsan to Yosu.

Other services provided by KOMEKO include underwater surveys, welding, cutting, repairs, cofferdam installation, propeller repairs, as well as miscellaneous cleaning services.

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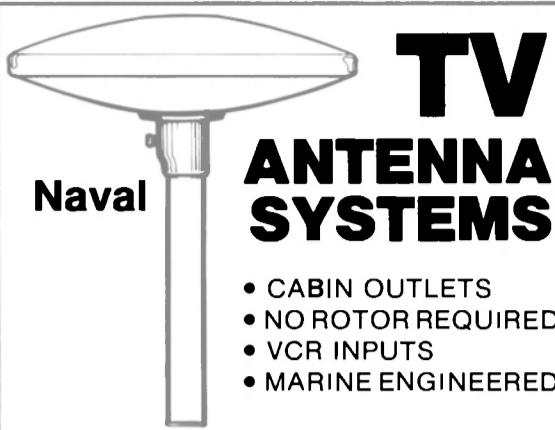
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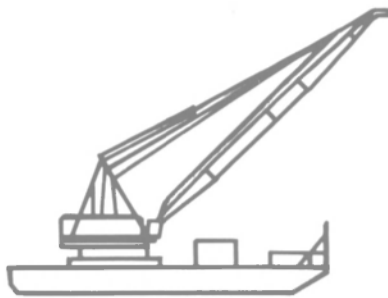
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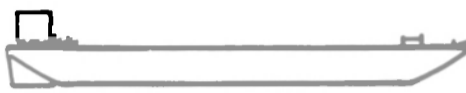
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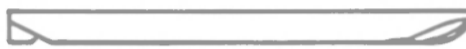
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South Korea's Daewoo Shipbuilding and Heavy Machinery Ltd. has recently delivered to Texaco, Inc., a \$40-million jacket for deepwater petroleum operations which is among the largest ever built.

At the same time, Daewoo delivered a barge to Kaiser Steel Co., which is said to be the largest of its type afloat. The barge will be used to transport the Texaco jacket to the US west coast.

Manufactured and assembled in eight large modules, the jacket is 698.8 feet in length and weighs 22,000 metric tons. It will be used off the shore of California.

The Kaiser barge has an overall length of 698.8 feet, a width of 180.4 feet and is 39.4 feet in height. The barge features a "Tilt Beam" hydraulic system to facilitate the loading and installation of large offshore structures.

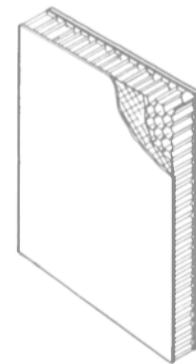
"The construction and on-time delivery of the jacket and barge is an achievement that points up the company's increasing capabilities in serving the needs of the oil and gas industry," said Daewoo Shipbuilding president Y.S. Yoon.

The jacket was ordered by Texaco Inc. in October 1983 and took 18 months to complete the fabrication.

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Carrier Transicold Division, Carrier Corp., P. O. Box 4805, Syracuse, NY 13221

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Baldt Incorporated, P.O. Box 350, Chester, PA 19016
G.J. Wortelboer Jr. B.V., Eemhavenstraat 4, P.O. Box 5003, 3008 AA Rotterdam, Netherlands

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Industrial Engineering & Equipment Co., 425 Hanley Industrial Ct., St. Louis, MO 63144
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Gulf Oil Trading Co., 535 Madison Ave., New York, NY 10022
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CARGO HANDLING EQUIPMENT

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MacGregor Navire U.S.A. Inc., 135 Dermody St., Cranford, NJ 07016

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Valmet Automation A.S., P.O. Box 130, N-3430, Spikkestad, Norway

COUPLINGS

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Appleton Marine, P.O. Box 2339, Appleton, WI 54913
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Goltens, 160 Van Brunt St., Brooklyn, NY 11231
Rosan, Inc., 2901 West Coast Hwy., Newport Beach, CA 92663

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Thomas Coudon Associates, 6655 Amberton Drive, Baltimore, MD 21227
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CMC Communications Inc., 5479 Jetport Industrial Blvd., Tampa, FL 33614
COMSAT World Systems, 950 L'Enfant Plaza, S.W., Suite 6151 Washington, DC 20024
A/S Elektrisk Bureau, P.O. Box 98, N-1360 Nesbru, Norway
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General Electric Company, Mobile Communications Division, Lynchburg, VA 24502
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Japan Radio Co., Ltd., Akasaka Twin Tower, 17-22, Akasaka 2-chome, Minato-ku, Tokyo 107, Japan U.S. Rep: 405 Park Ave., New York, NY 10022
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Nav-Com, Inc., 9 Brandywine Drive, Deer Park, NY 11729
Navigation Sciences Inc., 6900 Wisconsin Ave., Bethesda, MD 20815 TX: 705999
Perko Inc. (Lights), P.O. Box 6400D, Miami, FL 33164
Racal Marine Inc., 1 Commerce Blvd., Palm Coast, FL 32037-0029
Radio-Holland USA, Inc., 6033 South Loop East, Houston, TX 77033
Raytheon Marine Co., 676 Island Pond Road, Manchester, NH 03103
Raytheon Ocean Systems Company, Westminster Park, Risho Avenue, East Providence, RI 02914
Raytheon Service Co., 103 Roesler Rd., Glen Burnie, MD 21061
Robertson Autopilot, 400 Oser Ave., Hauppauge, NY 11738
S.P. Radio A/S, DK 9200 Aalerg, Denmark
Sperry Corporation, Great Neck, NY 11020
Standard Communications, P.O. Box 92151, Los Angeles, CA 90009
Telesystems, 2700 Prosperity Ave., Fairfax, VA 22031 USA
Texas Instruments, Inc., P.O. Box 405, 3438, Lewisville, TX 75067
Tracor Instruments Austin Inc., 6500 Tracor Lane, Austin, TX 78725

OILS—Marine—Additives
Exxon Company, U.S.A., Room 2323 AH, P.O. Box 2180, Houston, TX 77701
Gulf Oil Company—U.S. (Domestic Oils), 909 Fannin Street, Houston, TX 77001
Gulf Oil, New York District Sales Office (Domestic), 433 Hackensack Avenue, Hackensack, NJ 07601
Gulf Oil Trading Co., 535 Madison Ave., New York, NY 10022
Mobil Oil Corp., 150 East 42 Street, New York, NY 10017
Texaco, Inc. (International Marine), 135 East 42nd St., New York, NY 10017

OIL/WATER SEPARATORS
Alfa Laval, Inc., Dept. MR-2, 2115 Linwood Ave., Fort Lee, NJ 07024
Biospherics, Inc., 4928 Wyaconda Rd., Rockville, MD 20852
Butterworth Inc. (USA), 3721 Lapas Dr., P.O. Box 18312, Houston, TX 77223-9989
Butterworth Systems (UK), 123 Beddington Lane, Croydon CR9 4NX, England
Centrico, Inc. (Westfalia Separators), 100 Fairway Court, Northvale, NJ 07647
Dahl Manufacturing, Inc., 2521 Railroad Ave., Ceres, CA 95307
Hamworthy Engineering Ltd., 10555 Lake Forest Blvd., Suite 5F, New Orleans, LA 70127
Hyde Products, Inc., 810 Sharon Dr., Westlake, OH 44148
Marine Moisture Control Co., 60 Inip Dr., Inwood, NY 11696
NALCO Chemical Co., 2901 Butterfield Road, Oak Brook, IL 60521
Peck Purifier Sales Co., 3724 Cook Blvd., Chesapeake, VA 23323

PAINTS—COATINGS—CORROSION CONTROL
American Abrasive Metals, 460 Coit Street, Irvington, NJ 07111
Ameron, 4700 Ramona Blvd., Monterey Park, CA 91754
Dampney Company, Inc., 85 Paris St., Everett, MA 02149
Devoe Marine Coatings Co., P.O. Box 7600, Louisville, KY 40207
Drew Ameroid Marine, One Drew Chemical Plaza, Boonton, NJ 07005
E.I. DuPont de Nemours & Co., Inc. Nemours Bldg., Rm. N-2504-2, Wilmington, DE 19898
DuPont Co. MPS, Room X40750, Wilmington, DE 19898
Esgard, Box 2698, Lafayette, LA 70502
Farboil Company, 8200 Fischer Rd., Baltimore, MD 21222
Hempel Marine Paints, Inc., Foot of Currie Ave., Wallington, NJ 07057, 6868 NorthLoop East, Suite 304, Houston, TX 77028; P.O. Box 10265, New Orleans, LA 70181
International Paint Company, Inc., 2270 Morris Avenue, Union, NJ 07083
Jaegle Paint Company, Inc., 1012 Darby Road, Havertown, PA 19083
Jotun Marine Coatings Inc., 175 Penrod Court N&O, Glen Burnie, MD 21061
Magnus Maritec International Inc., 150 Roosevelt Pl., P.O. Box 150, Palisades Park, NJ 07650
Products Research & Chemical Corp., 5454 San Fernando Rd., Glendale, CA 91203
Selby Battersby & Co., 5220 Whitby Ave., Philadelphia, PA 19143

PIPE-HOSE—Cargo Transfer Clamps, Couplings, Coatings
Amermarine International, P.O. Box 9205, Dundalk, MD 21222
Deutsch Metal Components, 14800 S. Figueras St., Gardena, CA 90248
Hydro-Craft Inc., 1821 Rochester Industrial Dr., Rochester, MI 48063
Knights Piping Inc., 5309 Industrial Road, Pascagoula, MS 39567
Tioga Pipe Supply Co. Inc., 2450 Wheatstheaf La., P.O. Box 5997, Philadelphia, PA 19137

PLASTICS—Marine Applications
Hubeva Marine Plastic, Inc., 390 Hamilton Ave., Brooklyn, NY 11231
Norton Chemplast, 309-150 Dey Rd. Wayne NJ 07470

PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines
Amarillo Gear Co., P.O. Box 1789, Amarillo, Texas 79105
Armco Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45043
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, LA 70150
Bergen Diesel Inc., 2110-10 Service Rd., Kenner, LA 70062
Boston Metals Co., 313 E. Baltimore St., Baltimore, MD 21202
Burmeister & Wain Alpha Diesel AS, DK-1400 Copenhagen K, Denmark
Caterpillar Engine Division, 100 N.E. Adams, Peoria, IL 61629
Colt Industries Inc. (Fairbanks Morse Engine Div.), 701 Lawton Avenue, Beloit,

WI 53511
Columbian Bronze Corporation, 216 No. Main Street, Freeport, NY 11520
Combustion Engineering, Inc., Windsor, CT 06095
Coolidge-Stone Vickers, Inc., 56 Squirrel Rd., Auburn Hills, MI 48057
Daihatsu Diesel (USA) Inc., 180 Adams Ave., Hauppauge, NY 11788
Deutz Corp., 7585 Ponce de Leon Circle, Atlanta, GA 30340
Elliott Company, 1809 Sheridan Ave., Springfield, OH 45505
George Engine Company, Inc., Lafayette, LA
General Motors, Electro-Motive Division, LaGrange, IL 60525
Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, NY 11231
Iotta Fraschini S.p.A., c/o Italian Aerospace Industries (U.S.A.), Inc., 1235 Jefferson Davis Hwy., Suite 500, Arlington, VA 22202
KHD Canada Inc., 180 Rue de Normandie, Boucherville, Quebec J4B 5S7, Canada
Lips Propellers, 3617 Koppens Way, Chesapeake, VA 23323
M.A.N.-B&W Diesel, 2 Ostervej, DK-4960 Holeby, Denmark
MTU of North America, One E. Putnam Ave., Greenwich, CT 06830; 10450 Corporate Dr., Sugarland, TX 77478; 2945 Railroad Ave., Morgan City, LA 70203, 180 Nickerson St., Seattle, WA 98109; 1730 Lynn St., Arlington, VA 22209
MWM-Murphy Diesel, 12 Greenway Plaza, Suite 1100, Houston, TX 77046
Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507
Mitsubishi Kakaki Kaisha LTD, Mita Kokusai Bldg. 4-28 Mita 1-chome, Minato-ku Tokyo 108 Japan
National Marine Service Louisiana, Inc., 222 Bayou Rd., Belle Chasse, LA 70037
North American Marine Jet P.O. Box 1232 Benton, AR 72015
Omnithruster Inc., 9515 Sorensen Ave., Santa Fe Springs, CA 90670
Penske GM Power, Inc., 600 Parsippany Road, Parsippany, NJ 07054
Inland Water Propulsion Systems, Inc., 580 Walnut St., Cincinnati, OH 45201
Propulsion Systems, Inc., 21213 76 Ave. So., Kent, WA 98032
SACM (Societe Alsacienne De Constructions Mechaniques De Mulhouse) 1, Rue De La Fonderie, Boite Postale 1210, 68054 Mulhouse Cedex, France
Schottel of America, Inc., 8375 N.W. 56 St., Miami, FL 33166
Skinner Engine Co., P.O. Box 1149, Erie, PA 16512
Stewart & Stevenson Services, Inc., P.O. Box 1637, Houston, TX 77251-1637
Sulzer Brothers, Dept. Diesel Engines, CH-8401 Winterthur, Switzerland
Tech Development Inc., 6800 Poe Ave., P.O. Box 14557, Dayton, OH 45414
Transamerica DeLaval Inc., Engine & Compressor Div., 550 85th Ave., Oakland, CA 94621
Transamerica DeLaval, Inc., Turbine & Compressor Div., P.O. Box 8788, Trenton, NJ 08650
Ulstein Maritime Ltd., 6307 Laurel St., Burnaby, B.C. Canada V5B 3B3
Ulstein Trading Ltd. A/S, N-6-65, Ulsteinvik, Norway
J.M. Voith GmbH Dept. WERUNG, Postfach 1940 7920 Heidenheim/Brenz, West Germany
Voith Schneider America, 159 Great Neck Rd., Ste. 200, Great Neck, NY 11021
Volvo Penta of America, P.O. Box 927, Rockleigh, NJ 07647
WABCO Fluid Power, an American-Standard Company, 1953 Mercer Rd., Lexington, KY 40505
Wartsila Power Inc., 5132 Taravella Rd., P.O. Box 868, Marrero, LA 70072
Waukesha Engine Division, Waukesha, WI 53187

PUMPS—Repairs—Drives
Allweiler Pump Inc., 5410 Newport Dr., Rolling Meadows, IL 60008 TX: 270-0444
Cunningham Marine Hydraulics Co., Inc., 201 Harrison St., Hoboken, NJ 07030; 2030 E. Adams St., Jacksonville, FL 32204, TX: 710-730-5224
CMH Heleshaw, Inc., 201 Harrison St. Hoboken N.J. 07030
Goltens, 160 Van Brunt St., Brooklyn, NY 11231
Hamworthy Engineering Ltd., 10555 Lake Forest Blvd., Suite 5F, New Orleans, LA 70127
Ingersoll—Rand Pump Group, Dept. B—346, Washington, N.J. 07882
Jim's Pump Repair, 48-55 36th St., Long Island City, NY 11101
Megator Corporation, 562 Alpha Drive, Pittsburgh, PA 15238
Sims Pump Valve Co., Inc., 1314 Park Ave., Hoboken, NJ 07030
Transamerica DeLaval, Pyramid Pump Div., P.O. Box 447, Monroe, NC 28110
Vita Motivator Company, 200 West 20th St., New York, NY 10011
Warren Pumps Division, Bridges Avenue, Warren, MA 01083
Wilden Pump & Engineering Co., 22060 Van Buren St., P.O. Box 845, Colton, CA 92324

REFRIGERATION—Refrigerant Valves
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, NY 11231
United Technologies Carrier Transicold Div., Carrier Corp., P.O. Box 4805, Syracuse, NY 13221

ROPE—Manila—Nylon—Hawsers—Fibers
A.L. Don Co., Foot of Dock St., Matawan, NJ 07747
Allied Fibers, 1411 Broadway, New York, NY 10018
American Mfg. Co., Inc., Willow Avenue, Honesdale, PA 18431
Atlantic Cordage Corp., 60 Grant Avenue, Carteret, NJ 07008
DuPont Co., KEVLAR Aramid Fiber, Room G-15465, Wilmington, DE 19898
Tubbs Cordage Company, P.O. Box 709, Orange, CA 92666
Tubbs Cordage Co., P.O. Box 7986, San Francisco, CA 94120-7986
Vermeire N.V. Industriepark Zwaarveld, B-9160 Hamme, Belgium TX: 21687
Wall Industries, Inc., P.O. Box 560, Elkin, NC 28621

SANITATION DEVICES—Pollution Control
Davit Sales Inc., P.O. Box 232, Jefferson Valley, NY 10535
Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111
FAST Sewage Systems, Div. of St. Louis Ship, 611 East Marceau St., St. Louis, MO 63111
Galar Metal A/S, P.O. Box 70, 4901 Tvedestrand, Norway
Hamworthy Engineering Ltd., 10555 Lake Forest Blvd., Suite 5F, New Orleans, LA 70127
Marine Moisture Control Co., Inc., 60 Inip Dr., Inwood, L.I., NY 11696
Marland Environmental Systems, P.O. Box 501, Great Falls, VA 22066

SCAFFOLDING EQUIPMENT—Work Platforms
McCausey Lumber Co., 7751 Lyndon, Detroit, MI 48238
Trus-Joist Corp., P.O. Box 60, Boise, ID 83704

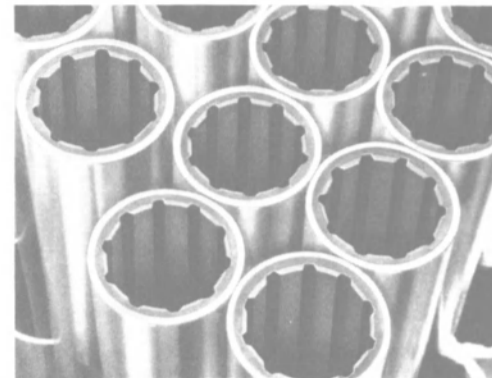
SCUTTLES/MANHOLES
Mock Manufacturing Inc., 777 Rutland Rd., Brooklyn, NY 11203

SHAFT SEALS, REVOLUTION INDICATOR EQUIPMENT
Crane Packing Company, 435 Regina Dr., Clarksberg, MD 20734
EG&G Sealor Engineered Prod. Div. Marine Products Group, Warwick, RI 02888
Norton Chemplast, 309-150 Dey Rd., Wayne, NJ 07470

SHIPBREAKING—Salvage
Fred Devine Diving & Salvage, Inc., 6211 N. Ensign, Swan Island, Portland, OR 97217
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, OR 97201

SHIPBUILDING EQUIPMENT
Bardex Hydraulics, 6338 Lindmar Dr., P.O. Box 1068, Goleta, CA 93116
Cockatoo Dockyard Pty. Ltd., P.O. Box 1139, North Sydney, NSW 2060,

Johnson-Duramax Bearings Offer Performance Advantages —Literature Available



Johnson-Duramax water lubricated bearings are available in a wide range of shaft sizes.

Johnson-Duramax sleeve and flanged bearings feature specially formulated nitrile rubber securely bonded to a metallic or nonmetallic shell. Although industry standards generally call for naval brass shells, other type materials such as stainless steel, monel, aluminum and steel shells are also available.

Duramax Bearings are precision machined to required tolerances aiding installation and proper fitting at the shipyard, resulting in longer wearability and better overall performance. Flanged bearings are available with naval brass shells with flanges furnished solid or split, plain or drilled, and machined for mating with a stuffing box. Both metallic and nonmetallic sleeve bearings are available with naval brass shells with flanges furnished solid or split, plain or drilled, and machined for mating with a stuffing box. Both metallic and nonmetallic sleeve bearings are available from 1/4-inch shaft size to 6 1/2 inches. Sleeve bearings are also available in 23 popular metric sizes. Flanged bearings are furnished in sizes from 2-inch shaft size through 15 inches.

Johnson Duramax water lubricated bearings are easily available and are stocked and serviced by a worldwide network of distributors located near all major shipbuilding and repair yards.

For further literature containing full information,

Circle 62 on Reader Service Card

Baldt Inc. Acquires Remote Systems Technology Inc. —Free Literature Available

Baldt Incorporated, Chester, Penn., recently announced the acquisition of Remote Systems Technology Inc. (RST), Houston, Texas. As a subsidiary of Baldt Inc., RST will continue to develop and market acoustic components and systems for the exploration, drilling and production phases of the offshore oil industry.

RST developed the basic acoustic technology for Baldt's Moor-Free™ Rapid Release System. Art McClellan, Baldt's director of marketing, said: "RST's extensive capabilities will allow Baldt to continue providing its customers with products that incorporate state-of-the-art technologies."

Baldt Inc. designs, engineers, manufactures and internationally markets a complete line of mooring system components for the marine and offshore oil industries, and drag chain systems for the mining industry. Various publications such as brochures, pamphlets, etc., are available on the company's products.

For free literature and further information from Baldt Incorporated,

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Australia TX: 72086
M.A.N.—GHH Sterkrade Werksrabe 112 D-4100 Duisburg 18, West Germany
Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, FL 33156
Total Transportation System Inc., 813 Forest Dr., Newport News, VA 23606
Total Transportation Systems (International) A/S, Bjornegarden, P.O. Box 248, N 5201, Os, Norway

SHIPBUILDING STEEL
Armco Steel Corp., 703 Curtis St., Middletown, OH 45042
Bethlehem Steel Corp., Martin Tower, Bethlehem, PA 18018
United States Steel Corp., Christy Park Plant, 2214 Walnut St., McKeesport, PA 15132
Welded Beam Company, P.O. Box 280, Perry, OH 44081

SHIPBUILDING—Repairs, Maintenance, Drydocking
Amsterdam Drydock Company, Post Box 3006, 1003 AA, Amsterdam, Holland
Arsenale Triestino-San Marco Shipyard, Trieste, Italy, U.S. Rep: Marine Technologies & Brokerage, 33 Rector St., New York, NY 10066
Asmar Shipyards Co., Astilleros y Maestranzas de la Armada, Prat 856, Piza 14, Casilla 150-V, Valpariso, Chile, S.A.
Astilleros Unidos De Veracruz, S.A. San Juan Uluva S/N, Apdo. Postal 647 Veracruz, Ver Mexico
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, LA 70150
Bardex Hydraulics, 6338 Lindmar Dr., P.O. Box 1068, Goleta, CA 93116
Bath Iron Works Corp., 700 Washington St., Bath, ME 04530
Bay Shipbuilding Corp., 605 N. 3rd Ave., Sturgeon Bay, WI 54235
Bender Shipbuilding & Repair Co., Inc., P.O. Box 42, Mobile, AL 36601
Bethlehem Steel Corp., Martin Tower, Bethlehem, PA 18018
Blohm & Voss AG, P.O. Box 100720, D-2000 Hamburg 1 (In US)-Blohm & Voss CO, Springfield, N.J.
Blount Marine Corp., P.O. Box 368, Warren, RI 02885
Boston Whaler Commercial Div., 1149 Hingham St., Rockland MA 02370
Burrard Yarrows Corporation, P.O. Box 86099, North Vancouver, B.C., Canada
Cantieri Navali Riuniti, Via Cipro, 11, 16100 Geneva, Italy
Chesapeake Shipbuilding Inc., 710 Fitzwater St., Salisbury, MD 21801
Conrad Industries, P.O. Box 790, Morgan City, LA 70380
Coast Iron & Machine Works, 5225-7th Street E., Tacoma, WA 98424
Dubai Drydocks, P.O. Box 8988, Dubai, United Arab Emirates—U.S.A. Agents: Keppel Marine Agencies, Inc., 26 Broadway, New York, NY 10040, 6240 Richmond Ave., Houston, TX 77057
Eastern Marine, Inc., P.O. Box 1009, Panama City, FL 32401
Genstar Marine, 10 Pemberton Ave., No. Vancouver, B.C., Canada V7P 2R1
Golten Marine Co., Inc., 160 Van Brunt St., Brooklyn, NY 11231
Hitachi Zosen Corp., 1-1-1 Hitotsubashi, Chiyoda-ku, Tokyo 100, Japan
Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central Post Office, Kowloon, Hong Kong
Hyundai Mipo Dockyard Ltd., 456 Cheonha-Dong, Ulsan, Korea
Industrial Marine Engineering Ltd., P.O. Box 172, Suva, Fiji
Jakobson Shipyard Inc., P.O. Box 329, Oyster Bay, NY 11771
Jeffboat Inc., Jeffersonville, Ind. 47130
Jered Brown Brothers, Inc., 56 S. Squirrel Rd., Auburn Hills, MI 48057
Keppel Shipyard Limited, 325 Telok Blangah Road, P.O. Box 2169, Singapore 0409
Koch Ellis Barge & Ship Service, P.O. Box 9130, Westwego, LA 70094
Kone Corp. P.O. Box 6 SF-05801 Hyvinkaa, Finland
Paul Lindenau GmbH & Co., Schiffswerft u. Maschinenfabrik, D-2300 Kiel-Friedrichsort, West Germany
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, WA 98134
M.A.N. GHH Sterkrade, P.O.B. 110240, D-4200 Oberhausen 11, West Germany
Main Iron Works, Inc., P.O. box 1918, Houma, LA 70361
Marathon LeTourneau Offshore, P.O. Box 61865, Houston, TX 77208
Marinette Maine Corporation, Marinette, WI 54143
Mitsubishi Heavy Industries, Ltd., 5-1, Marunochi 2-chome, Chiyoda-ku, Toyko, 100 Japan
MonArk Boat Co., P.O. Box 210, Monticello, AR 71655
Moran Shipping Agencies, 602 Sawyer, Suite 200, Houston, TX 77077
Moss Point Marine Inc., P.O. Box 1310, Escatawpa, MS 39552
National Marine Service (Shipyard Division), P.O. Box 38, Hartford, IL 62048
National Steel & Shipbuilding Corp., San Diego, CA 92112
Nautilus Surveys Inc., 10822 Sageleaf Lane, Houston, TX 77089
Neorion Shipyards Syros Ltd., Syros, Greece—U.S.A. Agents: Keppel Marine Agencies Inc., 26 Broadway, New York, NY 10040, 6420 Richmond Ave., Houston, TX 77057
Newport News Shipbuilding, 4101 Washington Ave., Newport News, VA 23607
Nichols Brothers Boat Builders Inc., P.O. Box 580, 5400 S. Cameron Rd., Freeland, WA 98249
Pennsylvania Shipbuilding, P.O. Box 442, Chester, PA 19016
Promet (PTE) Ltd., 27 Pandam Rd., Jurong Industrial Estate, Singapore 22
Promet Marine Services Corp., 242 Allens Ave., Providence, RI 02905
Samsung Shipbuilding & Heavy Industries Co., Ltd., Samsung Main Bldg. 250, 2Ka, Taepyeong-ro, Chung-ku, Seoul, Korea
Southwest Marine, Inc., P.O. Box 13308, San Diego, CA 92113
Tampa Shipyards Inc., P.O. Box 1277, Tampa, FL 33601
Thomas Marine, 37 Bransford St., Patchogue, NY 11772
Todd Shipyards Corp., 1 State St. Plaza, New York, NY 10004
Tracor Marine, P.O. Box 13107, Port Everglades, FL 33316
Vanguard Services, P.O. Drawer A, New Johnsonville, TN 37134
Verreault Navigation Inc., Les Mechains, Quebec, G0J 1T0
Waller Marine, Inc. 11777 Katy Freeway/Suite 395, Houston, TX
Westport Shipyard, Inc., P.O. Box 308, Westport, WA 98595
Zidell Explorations, Inc., 3121 S.W. Moody Street, Portland, OR 97201

SHIPPING—PACKING
Pilotage Consultants, Inc., P.O. Box 2046, New Hyde Park, NY 11040

SIMULATOR TRAINING
Marine Safety International, Marine Air Terminal, LaGuardia Airport, NY 11371

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

SMOKE INDICATORS
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, NJ 07928

STUFFING BOXES
Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062
Smith-Meeker Engineering Co., 157 Chambers St., New York, N.Y. 10007

SURVEYORS AND CONSULTANTS
Advanced Technologies Dept. PZ-01, 7926 Jones Branch Dr., McLean, VA 22102
Francis B. Crocco, Inc., P.O. Box 1411, San Juan, Puerto Rico 00903

Frank Jeffrey & Assoc., 5201 Westbank Exp., Suite 206, Marrero, LA 70073
M.A. Stream Associates, Inc., 400 Second Ave. W., Seattle, WA 98119

TANK CLEANING
Butterworth Inc. (USA), 3721 Lapas Dr., P.O. Box 18312, Houston, TX 77223-9989
Butterworth Systems (UK), 123 Beddington Lane, Croydon CR9 4NX, England
Gamjet Marine Division, 375 Allwood Rd., Clifton, NY 07013
Gamajet Equipment Div., Sybron Chemicals Inc., 121 S. Maple Ave., So. San Francisco, CA 94080
Petrochemical Services, Inc., 3820 Dauphine St., New Orleans, LA 70117

TANK LEVELING INDICATORS
American United Marine Corp., 5 Broadway, Route 1, Sagas, MA 01906
Kongsberg North America Inc., 400 Oser Ave., Hauppauge, NY 11738
Marine Moisture Control Co., 60 Inip Dr., Inwood, NY 11696
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06062

TORSIONAL VIBRATION SPECIALISTS
T.W. Spaetgens, 156 W. 8th Ave., Vancouver, Canada, V5Y 1N2

TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.
Bay Houston Towing Co., 2243 Milford, P.O. Box 3006, Houston, TX 77253
Curtis Bay Towing Co., Mercantile Bldg., Baltimore, MD 21202
Jan Erik Dyvi A/S, P.O. box 454, Sentrum, Norway
McAllister Bros., Inc., 17 Battery PL, New York, NY 10004
McDonough Marine Service, P.O. Box 26206, New Orleans, LA
Midland Affiliated Co., 580 Walnut St., Cincinnati, OH 45201
Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, NY 10048
National Marine Service, Transport Div., 1750 Brentwood Blvd., St. Louis, MO 63144
Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767; Walker Boat Yard, P.O. Box 729, Port Allen, LA
Suderman & Young Co., Inc., 918 World Trade Bldg., Houston, TX 77002
Turecamo Coastal & Harbor Corp. 1 Edgewater Plaza Staten Island, N.Y. 10305

VALVES AND FITTINGS
Crawford Fitting Company, 29500 Solon Road, Solon, OH 44139
Baily, Division of CMB Industries, P.O. Box 8070, Fresno, CA 93747
Boston Metals Co., 313 E. Baltimore St., Baltimore, MD 21202
Cajon Co., 9760 Shepard Rd., Macedonia, OH 44056
Elliott Manufacturing Co., Inc. (Remote Valve Operating Equipment), P.O. Box 773, Binghamton, NY 13902
Hayward Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207
Jamesbury Corp. 640 Lincoln St., Worcester, MA 01605
Marine Moisture Control Co., 60 Inip Dr., Inwood, NY 11696
Nupro Co., 4800 E. 345th St., Willoughby, OH 44094
Parker Hannifin Corp. Rotary Actuator Div., 9948 Rittman Rd., Wadsworth, OH 44281
Pittsburgh Brass Manufacturing, Sandy Hill Rd., R.D. 6 Box 387-A, Irwin, PA 15642
Sno-Trik Co., 9760 Shepard Rd., Macedonia, OH 44056
Stacey/Fetterolf Corporation, P.O. Box 103, Skippack, PA 19474
Stockham Valves & Fittings, Box 10326, Birmingham, AL 35202
Swagelok Company, 5171 Hudson Dr., Hudson, OH 44236
Tate Andale Inc., 1941 Landsdowne Rd., Baltimore, MD 21227
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, NJ 07928
Waukesha Bearings Corp., 405 Commerce St., P.O. Box 798, Waukesha, WI 53186
Whitey Co., 318 Bishop Road, Highland Heights, OH 44143
William E. Williams Valve Corporation, 38-52 Review Avenue, Long Island City, NY 11101
Zidell Explorations, Inc. (Valve Division), 3121 S.W. Moody Avenue, Portland, OR 97201

VESSEL OWNER / OPERATOR
Wallenius Lines, P.O. Box 17086, S-10432 Stockholm, Sweden

VIBRATION ANALYSIS
DLI Engineering Corp., 253 Winslow Way West, Bainbridge Island, WA 98110

WATER PURIFIERS
Alfa Laval, Inc., Dept. MR-2, 2115 Linwood Ave., Fort Lee, NJ 07024
Atlas-Danmark Marine & Offshore Baltorpej, 154 DK-2750 Bollerup, Copenhagen, Denmark, TX 35177 Atlas DK
Drew Chemical Corporation, One Drew Chemical Plaza, Boonton, NJ 07005
Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559
Marine Moisture Control, 60 Inip Dr., Inwood, NY 11696
Marland Environmental Systems, P.O. Box 501, Great Falls, VA 22066
MECO (Mechanical Equipment Company, Inc.), 861 Carondelet St., New Orleans, LA 70130
Riley-Beard, P.O. Box 31115, Shreveport, LA 71130

WEATHER CHART RECORDERS
Alden Electronics, 1145 Washington St., Westborough, MA 10581

WELDING
KSM Fastening Systems Inc., 301 New Albany Rd., Moorestown, NJ 08057
Metallizing Co. of America, Inc., 321 So. Hamilton, Sullivan, IL 61951
Miller Electric Mfg. Co., P.O. Box 1079, Appleton, WI 54912

WELDING EQUIPMENT
Enerjee Ltd., 32 S. Lafayette Ave., Morrisville, PA 19067

WINCHES AND FAIRLEADS
Fritz Culver, Inc., P.O. Box 569, Covington, LA 70434
Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134
McElroy Machine & Mfg. Co., Inc., P.O. Box 4454, W. Biloxi, MS 39531
Nashville Bridge Co., P.O. Box 239 Nashville TN 37202
Schoellhorn Albrecht, Div. of St. Louis Ship, 3460 So. Broadway, St. Louis, MO 63118
Smith Berger Marine Inc., 516 S. Chicago St., Seattle, WA 98108

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

WIRE AND CABLE
AMP Special Industries, P.O. Box 1776, Southeastern, PA 19399
Anixter Bros., Inc., 4711 Golf Road, One Concourse Plaza, Skokie, IL 60076
Atlantic Cordage Corp., 60 Grant Ave., Carteret, NJ 07008
Delco Wire & Cable, Inc., 257 Rittenhouse Circle, Keystone Industrial Park, Bristol, PA 19007
Seacoast Electric Supply Corp., 225 Passaic St., Passaic, NJ 07055
Seacoast Electric Supply Corp., 1505 Oliver St., Houston, TX 77007

WIRE ROPE—Slings
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Bethlehem Steel Corp., Martin Tower, Bethlehem, PA 18018
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MECHANICAL ENGINEER FOR AUXILIARY MACHINERY

The Naval Engineering Division, Design Branch is seeking a GS-5/7/9/11/12* Mechanical Engineer for auxiliary systems including HVAC, distillers, aux. boilers and firefighting systems for Coast Guard's own cutter and icebreakers. Experience with commercial or naval vessels is desirable.

Submit a current SF-171 or resume to:

Commandant (G-CAS-5) Room 3418
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2100 Second St., S.W.
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ATTN: Ms. Shirley Bennett
(202) 426-2330

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NAVAL ARCHITECT GS: 7-13

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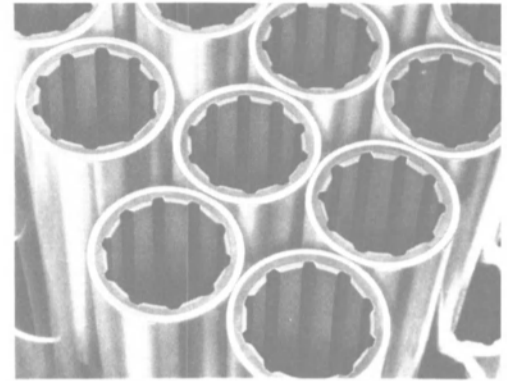
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NAVAL ARCHITECT GS: 7-13

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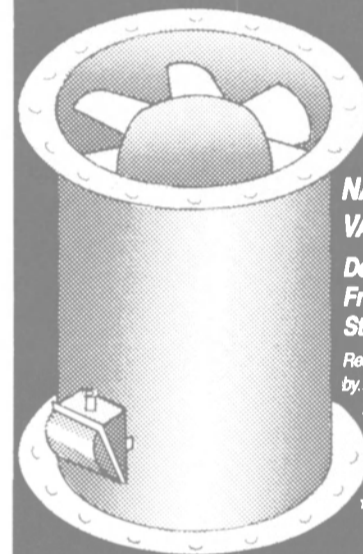
180' x 54' x 12' ABS A1, 1200 lb/sq. ft. deck—2350 ST DWT; steel weight of barge 460 ST.—Worked only 15 months since built in 1980.—1/2" hull plating & internals are like new.—2 long'l & 6 transv bulkheads form 19 cpts.—Square stern makes it ideal crane barge.—New rake lengthening barge 20' costs \$85,000.—Just drydocked for new ABS & USCG surveys.—Needs paint but no wastage or serious rust.—Asking price \$285,000. as-is near Houston—(About 31¢/lb vs 60% more for barges)

Houston Barge & Boat Sales

1003 Wirt Road, #302 #713-464-7057
Houston, Texas 77055 Telex 76-2726

JON M. LISS ASSOCIATES, INC.

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VANEAXIAL FANS**

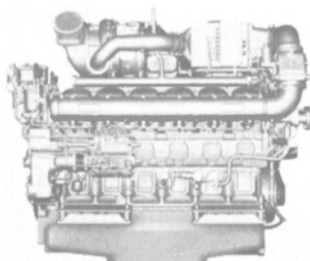
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From
Stock**

Reconditioning and Rewinding
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Available with Warranty.

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TELEX 17-2655 GOUJON SMT

For Sale—New and Tested



MTU 12V652TB61 Diesel for workboat application

1515 BHP at 1400 RPM \$95,000

MTU 12V652TB81 Diesel for yacht application

Continuous 1705 BHP at 1400 RPM

Intermittent 1930 BHP at 1460 RPM \$107,000

Scope of Supply: Basic engine with Vulkan coupling, instrumentation and monitoring for engine room and bridge, according to requirements for unmanned engine room. All necessary connecting parts such as hoses, bellows etc. for raw/freshwater, lube oil, fuel oil, exhaust, combustion and starting air systems.

REINTJES gearboxes WAV 660, ratio 6:1 and WAV 1450, ratio 5:1 with PTI flange, sensors, wiring, terminal box, for pneumatic control \$18,000

ZF gearboxes BW 255, ratio 2:1, flanged on design, resilient mountings with PTI and prop shaft flange, sensors, wiring, terminal box, for pneumatic control. \$15,000

For information write MTU of North America, Inc., 10450 Corporate Drive, Sugar Land, Tx 77478 or call 713-240-4100/1-800-321-2688

WATERTIGHT DOORS IN STOCK



SIZES

26" x 48" 26" x 66"
26" x 60" 30" x 60"
5/16" Frame - 1/4" Panel

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. Built to ABS.

LEVER OPERATED OR WHEEL OPERATED DOORS AVAILABLE

26" x 48" 26" x 66" 30" x 60"

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.

ALSO 12" x 10" IN STOCK

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MARCONI LODESTAR 3D AUTO-
MATIC DIRECTION FINDER. IMCO
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FOR SALE OR MERGER MARINE AND NAVY REPAIR
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FOLK, VA. AREA. EACH FACILITY HAS EXPERIENCED
REPAIR PERSONNEL, MACHINE SHOPS WITH TESTING
CAPABILITY OF STEAM, HYDRO AND PNEUMATIC.

Box 801 Maritime Reporter
118 East 25th St., New York, NY 10010

BMEP Balancer Used To Increase Fuel Efficiency In Diesels



BMEP Balancer Model 300-A

The power an engine develops is dependent on the pressure developed in its cylinder or cylinders. The General Thermodynamics Corporation, Plymouth, Mass., uses this pressure to sense the power developed in various types of engines. Its initial application was in an aircraft engine to give a continuous reading of developed power when driving a constant speed propeller. This is equivalent to driving a variable-pitch propeller on a ship, whereby engine power can be varied widely at any given engine speed.

For shipboard use to date, this concept is applied mostly in the form of the BMEP Balancer, Model 300-A, to equalize the power distribution among the cylinders of an engine. With the balancer, it is said to be possible to make a fuel adjustment on a cylinder, increasing or decreasing the power developed, while watching the instrument reading move to the desired value. This would optimize fuel consumption and remove the danger of overloading a cylinder or cylinders, as well as bearings, and results in a quieter, smoother-running engine.

The actual power being developed by a running engine can be read by referring the balancer reading to a calibration chart.

The balancer attaches to a standard indicator valve and continuously senses combustion chamber pressure. There is no need for external excitation, and it is direct reading.

For further information and free literature about General Thermodynamics Corporation and the BMEP Balancer, Model 300-A,

Circle 59 on Reader Service Card

System For Renovating Floors Described In New Brochure —Literature Available

A new six-page, four-color brochure from Selby, Battersby & Co. describes the Selby System, in which thorough investigation, proper subfloor preparation and field-tested installation procedures produce years of trouble-free flooring service.

Abuse from chemicals or just simple wear and tear can reduce floors in industrial, institutional and commercial buildings into pitted, dangerous surfaces. New construction may be impractical or too expensive. The brochure describes how to evaluate problems on-site and how to select the most effective rehabilitation method and best flooring material for the area.

The brochure contains color and black and white photos showing typical before/after installations. Facts about surface preparation, cost-effectiveness, chemical and physical abuse, safety, waterproof capabilities, decorative materials and maintenance are all detailed.

Almost any customized flooring need can be satisfied with Selby's multiple product line, according to the brochure, and the firm's trained applicators and representatives are located throughout the U.S. and in many international markets.

For more information and free literature from Selby, Battersby & Co.,

Circle 70 on Reader Service Card

New 28-Page Catalog Describes Broad Line Of Pressure, Pump Flow & Level Marine Products Available From Single Source



Transamerica Delaval has available a new 28-page catalog describing the company's broad range of marine products. These products are manufactured worldwide to meet international marine standards.

For the first time, these products can be found in a single catalog. They are manufactured by Barksdale Controls, Gems Sensors Division, Pyramid Pump Division, Weka AG, Transamerica Instruments Ltd., and Delaval Turbine GmbH.

Also illustrated in the catalog are marine applications for both shipboard and offshore use. Products described are pressure switches, transducers, signal-conditioned transmitters and vibration sensors. Also included are temperature switches and flow switches, as well as many different types of level switches and indicators: non-electric, externally mounted, manual check, sounding tapes, etc.

The catalog lists international marine approvals for the various products. All products included are backed by worldwide sales, service and manufacturing.

For further information and a free copy of this new 28-page catalog from Transamerica Delaval,

Circle 58 on Reader Service Card

Two brand new 8 cylinder, Vee configuration, four cycle, 9x10 1/2, turbocharged and after-cooled, Alco Model 251, heavy duty diesel engine for twin screw oceangoing propulsion. One engine will be Alco standard counter-clockwise rotation and the other will be clockwise rotation. Each is rated 1620 BHP at 1000 RPM and 120 degrees Fahrenheit ambient for continuous service. Survey available on request. Contact Rivergulf Agency, Inc., New Orleans, La. (504) 524-2613, Alex or Panos



FIREBOAT FOR SALE

Twin screw 95 x 23 x 6'09" built in 1949 by Defor, Inc. always in fresh water well maintained and in good operational condition. Height above water line 11'06". Four 375 HP Nordberg engines Two 30 KW A.C. Generators Chicago, Ill 312-721-4138

FOR SALE

New Floating 1500 & 900 Ton Drydocks
For Further Information Call
(504) 384-3060

VESSEL

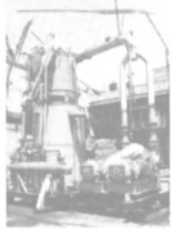
SPECIAL SALE

CONVERSION

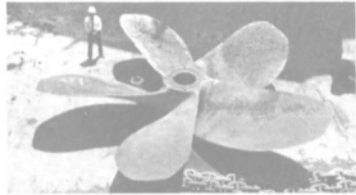
**MACHINERY AND EQUIPMENT REMOVED FROM TANKERS
WORTH AND ROSE CITY** USED LESS THAN
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SAN CLEMENTE CLASS VESSELS

BUYERS PLEASE NOTE SALE LIMITED TO ABOVE VESSELS ONLY



INERT GAS SYSTEM MFG. By Foster Wheeler
Capacity—6350 S.C.F.M. at 60° F
10,200 NM 3/HR. at 32° F
Classification U.S. COAST GUARD and AMERICAN BUREAU of SHIPPING
Consumption #6 oil 3.9 G.P.M. Cooling Water (Sea) 2600 G.P.M. Electric Power—480 Volt—345 K.W.
120 Volt—2 K.W.
Compressed Air 5 S.C.F.M. at 100 P.S.I.
Excellent Condition 1 only



PROPELLER
MFG. By Ferguson Propeller Co.
1975—A.B.S. #2 Material
26'0" dia. 5 BLADE
Pitch—70R-19.755'
Hull #110 Maplan 226-D4400
MSRSSEER 8073
Wt. 105,750 LBS
2 each available
Excellent Condition



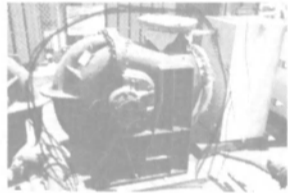
ANCHORS
MFG. By Baldt
Each Anchor Has Shackle, Swivel & 2 Connector Links 2 1/2" and Pear Link—Good Condition



30" GATE VALVE
MFG. By Darling Valve Co.
150 P.S.I. Duct Iron
Complete with Hydraulic Operated Limit Torque Type HMB.
Size 2—30" 500543
10 each available
Excellent Condition.



TANK CLEANING NOZZELS
"Hy Otic" Mark II Penco w/Direction Meter
All Brass Construction Excellent Condition
Approx. 128 Available
Complete.



CARGO PUMP
MFG. By Warren Pump Co.
Type Size 16-BDC-32-Model 68995
15,400 G.P.M. 540 FT. Head. 13 30 R.P.M.
All Bronze Construction Complete with Terry Steam Turbin Type BKB. SG
3000 H.P.—Gear R.P.M.—1330 Turbin R.P.M. 4910
Complete Good Condition
4 available.



CARGO STRIPPING PUMP
MFG. By Worthington Pump Co
Size 8 x 12—Duplex—Steam Driven
All Bronze Construction Pump
Excellent Condition 2 Available.



CARGO EXPANSION TRUNKS
w/vent relief valves, Aluminum Cover
46" Diameter 8 Dog with Lifting Davit
32" High. Equipped with 10" Over Flow Valve
36 Each Available
Good Condition.

Misc Material

10 each Mooring Bits. 1 1/2" Dia. Post Double 65" x 26" Base 26" high Steel Construction.
8 each Mooring Bits. 12" Dia Posts, Double 46" x 20" Base 22" High Steel Construction.
8 each Mooring Bits Single. 12" Dia Post 22" x 22" Base 16" High Steel Construction
12 each Closed Chocks 14" x 22" opening
20 each Closed Chocks Size 12" x 12" opening
4 each Cargo Booms 10 ton Capacity w/Topping Blocks
4 each King Posts Square Tubular Type 10 Ton Capacity w/goose neck and Pad Eyes. A. B.S. Certified
4 each Topping Wiches Western Gear Double Line Pull type 8000 lb. at 50 F.P.M. 15 H.P. Electric Motor Drive 1670. R.P.M. 3 Phase 60 cycle.
4 each Single Drum Cargo Winches 3/4" Wire Rope Double Cat Head Type. Hydraulic Driven Self Contained 40 H.P. 1750 R.P.M. Mfg By Western Gear Co. Underwriter approved fair condition.
4 each Cargo Strainers Duplex 16" steel Construction
2 each Vertical Electric Motors Reliance Marine Motor 40/20 H.P. 1180/590 R.P.M. 440 Volt 3 Phase 60 cycle for Fuel Oil Transfer Pump.
2 each Fuel Oil Service Pumps 15/12.5 H.P. 3 Phase 60 cycle 3450/1750 R.P.M. Reliance Marine Motor. 440 volt A.C.
6 each 8" Lunkenheimer Valves 150# Steel Complete with Limitorque Type SMB Size 00 Operating gear.
6 each Wallworth Valves 14" Steel 150 P.S.I.
4 each Duplex Strainers. 12" Flange mounted 4 element type Bronze Construction
2 each Swing Check Valve 14" Steel A.B.S. & Bureau of Veitilos Stamped
6 each Fueling at Sea Tripods NASCO Built 50,000 lb Test with Span Wire Pad eye
2 each Relief Valves Loanevgn 4" x 6"—212 Test Pres. Steam Service Steel.
2 each Heat Exchanger Shell & Tube Type. American Standard for Fine & Butterworth System Model OCM-1UF74101 A.B.S. Stamped Class II Pressure Vessel. Serial # 5-115C3-C4-4
2 each Educator Size 14 x 10 x 12 Venturi type Steel Mtg By Derbyshire 2000 G.P.M. Suction at 15 ft left. Unit # ID81 Nozzel ID X1876. Discharge 100 ft. Head.
1 lot of fueling Pipes & Valves for at Sea Fueling, adapters, ells, goose necks, Ball valves 8" 150 P.S.I. Mtg By Taylor Forge Co. Quick Connection. Type, all New Condition.
2 each Valve Clusters Rockwell 600 P.S.I. Steel for Tank Cleaning System. 3 Valves Per Cluster.



ROLLER CHOCKS.
MFG. By A.C. Hoyle Model #X114-1
Mounted on Cone Shapped Base 40" High.
36" Dia At Base.
6 Each Available
Good Condition.



ROLLER FAIRLEAD.
MFG. By A.C. Hoyle—Model-X111F470
4 Each Available
Good Condition.

4 each Valves Crane 14" Steel W.C.B. Gate Valve
4 each Waldsworth Y Valves Size 5 Steam Control USAS 900 at 975° F Body W.C.G. Stern CR13—W.O.G. 2160 at 100° Max. Disc H.F. Seat H.F. Max 1200° F code 655146705001A. Serial C60582. With angle Drive operating Wheel.
4 each 10" W.C.B. Steel 150 lb. Gate Valves.
14 each 4" Steel Nibco W.C.B. 150 lb. Gate Valves
4 each 4" Vellan Steel Globe Valves W.C.B.—150
4 each Vellan Engineering Co 14" Steel Valves Chrome Seats 150 lb. Gate Valves
4 each Powell 10" Valves 150 lb Steel W.C.B.
16 each American Darling 8" Gate Valves Duct Iron Cargo Pipe Line
32 each Tank Level Indicators w/High Level Alarms Mfg. By Trans America De Laval Division
32 each Vapor Control Valves 4" Mfg By Moisture Control Inc. Model Markaac 4—150 Steel.
24 Remote Valve Operating Unit Mfg. By Quaker City Gear Inc. Electric Motor Operative for 8" Valves.
16 each Remote Valve Operating Units. Mfg. By Quaker City Gear Inc. Electric Motor operated for 18" Valves.
36 each American Darling Valves 18" Gate Duct Iron 150 w/T Bar operating Handles.
2 each American Darling 14" Gate Valves Duct Iron
6 each Relief Valve Model DB 30RSt 6 x 10—70 W.G.B. Steel. Set Pressure 220 lbs
4 each Valve Crane 16" Steel 150 gate W.C.B.
8 each Valve Direction Control Cast Mfg. Co Model 4 AM NRV50D.
4 each Strainer Size 12—150 P.S.I. Model 212 Mesh 1/2" Mfg By Staples & Peiffer.
2 each Inline Separator Burgess Manning Model 3214—15# PN81-512-0-515 P.S.I. at 200° F.
6 each Window Wiper. Cornell Carr.
30 each Windows w/Frame Size 35 1/2" x 42" and 35 1/2" x 23 1/2"
4 each Life Raft 8 Man & 12 Man Type
16 each Misc. Running and Side Lights Anchor, etc. Pauliekn. Mfg. Co.
2 Complete Telephone Switchboards w/Phones. 30 line Dynalec Serial #2
Various Bells, Horns, Switches, Jacks, Loud Speakers, Receptacles, Conn. Boxes, Converters, Lorans Model C-and Decca 1024 Antennas, Switches, Radios, Transformers, Life Boat Radios, Teleprinters ComSat ARS-32 Model 3941. Radio Console Radio Marine. V. H.F. FM Remote Model Ray 50.—Light Fixtures, and Much Much More.

**"INTERESTED BUYERS"—ALL MATERIAL MUST
BE LIQUIDATED IN 90 DAYS**

MATERIAL LOCATED SAN DIEGO CALIF.

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HARROR DRIVE AND 28th STREET SAN DIEGO, CA. 92138

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CONTACT DONALD CLAIR 415-278-5373 OR 562-4710

Circle 142 on Reader Service Card

MARINE EQUIPMENT FOR USE ASHORE OR AT SEA!

750 KW A.C. TURBO GENERATORS



Ex-USN — GEI-16846 — type FN3-FN24 — seven stage — 10033 RPM — typical serial # 49351 or 61718 Single helix reduction gear — 10533/1200 RPM — type S-187 GENERATOR — 750 KW — 6 pole 0.8 P.F. — 450/3/60/1200 EXCITER 10 KW — 120 volts Steam inlet flange 2 1/2" — exhaust 17 1/2" X 25 1/2" rectangular. Overload 25% 2 hours. Units can be upgraded to 1250 KW for USN applications. Complete with throttles, etc. 8 Available

1500 KW TURBO GENERATOR SET



11-Stage turbine — FN4 — 8145 RPM — 3 1/2" steam — 525# — 825" TT GEARS: 195-8145-1200 RPM GENERATOR 1500 KW — 450/3/60/1200 RPM — 2405 amps — 0.8 P.F. EXCITATION: 13.2 KW — 120 volts DC. Weight 36,000 lbs — exhaust flange 18" X 38"

L.P. 450KW A.C. TURBO GENERATORS



Suitable for waste heat turbo generators on motor ships 175 PSIG — D&S — 27 1/2" vacuum GENERATOR Westinghouse 450KW — 563KVA — 450/3/60 — 1200 RPM GEAR 6097/1200 RPM TURBINE 175 lbs/D&S—27 1/2" vacuum. Other pressures & temps: 250# @ 40°C—27 1/2" vacuum. Turbine serial #7801-7802 OAL 13' 1-3/16" — OAH 5' — OAW 5 1/2". Total dry wt. 17,100 lbs. Plans on request

TURBINES/ROTORS REDUCTION GEARS

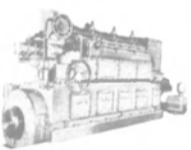
ROTORS: DRU-618M-73 — 700 KW — 10938/1200 RPM — GEI 90755 — 850" DIAPHRAGMS: Labyrinth — bearings GEAR: S-432 — Form B — 10938/120 G.E. ROTORS: 600KW — 700KW — 618M — 6-stage — 10022 RPM — G.E.I. 34822. GEAR: S-277A — 10022/1200 RPM — MARAD units G.E. ROTOR: DRU-318 — MRI non-condensing — 10938/1200 — 24 lbs. DeLAVAL TURBO GENERATOR SETS: ROTOR 7-stage class CD — 5910 RPM REDUCTION GEAR type KD — 5910/1200 — double helical Newport News hulls 499-504 Some Sparrows Point hulls DeLAVAL 1000 KW TURBO GENERATOR SET ROTOR 1442 HP — Class G.J.N. — 10009 RPM — 9-stage

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



ENGINE: GM 8-268A — 6" x 7" — 1200 RPM Heat exchanger cooled — equipped with heavy duty coolers. Just overhauled and can be seen running Good condition

NEW CLARK 500 BHP DIESEL



500 BHP @ 400 RPM 4-Cylinder straight inline type — 12" X 16" — 2-stroke single acting — liquid cooled — direct reversible — CW rotation With standard shaft-connected starting air compressor Wt 25,000 lbs — 228" long — 98" wide — 132" high Designed for heavy duty, rugged use, its extreme simplicity will result in lower operating and maintenance costs

MATCHED PAIR 900 HP GM 12-567A DIESELS W/ FALK REVERSE & REDUCTION GEARS



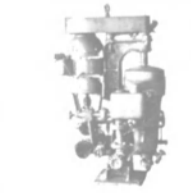
ENGINE: GM 12-567A 8" x 10 2-cycle V-type — 747 RPM — electric starting GEAR: Falk Airflex reverse & reduction — 2.48:1 forward — 2.52:1 reverse From USN LST

UNUSED FARRELL-BIRMINGHAM MAIN PROPULSION REDUCTION GEAR



Single reduction 1.8:1 Will handle up to 3200 HP input at 402 RPM. Complete with hydraulic coupling Port

SHARPLESS OIL PURIFIER



225 GPH — type M85-34-5-23 BY-44 — bowl speed 17,000 RPM — 2 HP — 440/3/60/3400 RPM Reconditioned

\$3950

ALMON JOHNSON CONSTANT TENSION LST STERN ANCHOR WINCHES WITH ALL CONTROLS

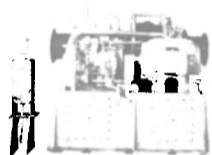


Drum capacity 900' of 1 1/2" wire Gypsy performance 12,000 lbs @ 125 FPM OAL 12' — CAW 10 1/2" Driven by 50 HP 230 VDC 181 amp motor. 2 Available with controls

PERFORMANCE

	Max. Control	Auto. Tension Control	
Line Speed	100,000 lbs	26,000 lbs	3000 lbs
Line Tension	10 FPM	Stall	400 FPM

50HP VARIABLE SPEED ELECTRO-HYDRAULIC CARGO WINCH



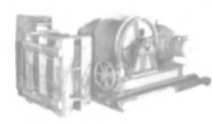
Made by Lakeshore DUTY 7400 lbs SLP — 220 FPM — drum size 24" diameter — 15" wide Complete with ratchet & pawl CAPACITY 600' of 1 1/2" wire MOTOR 50 HP — 440 volts — 66.3 amps — 3-phase 60 cycle — squirrel cage — 1200 RPM constant — Frame CC-445-N

7X10 AH&D 10,000 LB CARGO WINCHES



2-Speed single drum — reverse throttle operation LINE PULL low gear 10,000 lbs — high gear 5000 lbs LINE SPEED low gear 125 FPM based on 1st layer of 1 1/2" diameter rope — high gear 250 FPM based on 1st layer 1 1/2" diam rope DRUM 26" diam — 20" long — 26" flange diam Rope capacity of drum 1 1/2" diam rope in 6 layers — 650' diam rope in 8 layers 1200' Steam pressure at throttle 115 lbs Operating weight 6450 lbs

GENERAL PURPOSE WINCH 3500 LBS AT 200 FPM



New — Unused — Ex-USN A.C. Motor drive — 25 1/2 HP — GE 440 3 60 — 40 C AB — 1750 RPM — Type KR — full load amps 32 Motor drives winch through Falk reduction gear Has compression hand brake

LARGE STEAM TOWING ENGINE 9X10 TWIN ENGINE DRIVE



Air or Steam — 125 250 PSI Heavy duty Clyde with 36" diam 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. Approx wt 30,000 lbs DIMENSIONS 12'6" wide — 6'6" high Write for details ALSO AVAILABLE Large towing ring — 36" diameter

12" X 14" STEAM MOORING WINCHES

Steam Or Air Driven with foot brake & de clutchable gypsy head 20,000 LBS @ 100 FPM — FIRST LAYER ALSO HANDLES 16,000 LBS @ 150 FPM OR 50,000 LBS @ 8 FPM



Drum will stow 1500' of 1 1/2" wire in 9 layers Steam inlet 3 1/2" — 4" exhaust — 171 PSI working pressure. BASE DIMENSIONS 6' X 6'3" overall 8'4" wide X 9' long Mfg by Friedrich Kocks — Bremen Germany Remover from ARCO Challenger ALSO IN STOCK — 12" X 14" Double gypsy unit. Can be demonstrated running

UNUSED STEAM WINCH FOR MOORING & CARGO SERVICES



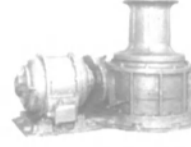
Lidgerwood 10X12 — with Morse controls 10,000 lb line pull — de clutchable gypsy — hand compression brake

SMALL 4 X 6 WINCH



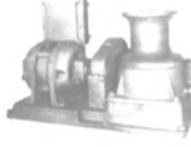
STEAM OR AIR DRUM 20" Diameter X 23" width — 8" flange Rated 2000# 90 FPM on 3rd layer of rope 125# Steam or 3500 @ 90 FPM 150 PSI steam 13,000 lb static load Fitted with ratchet & pawl so drum can be locked in off and on position

HEAVY DUTY 2-SPEED DOCK CAPSTANS



For tugs docks, etc. Suitable for manila or wire rope because barrel is ridged. 40/40 HP — 1200/600 — 24,000# @ 30 FPM — 12,000# @ 60 FPM Barrel size 22" diameter by 24" high — with controls.

DOCK CAPSTANS



Spool 10" diam X 4" 15 HP — 220/440/3/60 10,000 lbs @ 40 FPM 48" Long — 32" wide — 28" high

DEAN BROS. ALL-BRONZE STRIPPING PUMP BILGE & BALLAST 12 X 10 X 18



Max. pressure 730 GPM @ 200 lbs — steam end 250 lbs Serial 67735 OA Dimensions: 43" wide — 39" deep — 104" high Complete with spare unused bronze valve deck & spare liquid lines piston, steam end spares, rods, etc. This pump ready for immediate use — equal to new — little if any use

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



1400 GPM @ 110 PSI — suction lift 11 1/2 ft — steam back pressure 15 lbs. 14" Suction — 10" discharge — 2" steam — 4" exhaust Overall width 6'8" — overall height 9'1 1/2" — depth 3'9" Wt approx 10,000 Reconditioned 1980 ABS — ready to go

HIGH PRESSURE HULL CLEANING PUMP



Mfg by Hypro — type L — 25 HP — 220/440/3/60 — Frame 284T Pump capacity 25 GPM @ 500 PSI — 600 RPM

DEMING MOTOR DRIVEN RECIPROCATING PUMP



For sanitary and potable water use 30 GPM @ 90 lbs 190 RPM — 2" suction — 1 1/2" discharge GE motor — 2 HP — 440 3 60 1735 RPM

U.S. NAVY FANS

25000 CFM — A25A4W6 — 42" ID — 52" high — 25 14 HP — 440, 3, 60 — 1200/900 RPM — 36 24 amps 4 Available 3000 CFM — A3A4W6 — 21 1/2" ID — 29" high — 3 HP — 1150/1750 RPM Mfg by Joy 4 Available 5000 CFM — A5A4W6 — 23 1/2" ID — 29" high — 4 HP — 1150 1750 RPM Mfg by Joy 1 Available

12000 CFM A12AX6 Explosion-proof — 29 1/2" ID — 37 1/2" high — 10 3 HP — 1800 1200 RPM — Frame 254U — group D Reliance motor

ALSO MARAD FANS

40665 CFM — size 43 AF — 60 HP

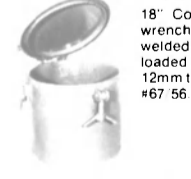
TANK TOP COVERS

Steel — with 12mm (1/2") cover and 19mm (3/4") flange Gasket between top cover and flange Mounting bolts are stainless steel

STYLE A STYLE B

Style A has flush deck mounting flange with 24" diameter bolts. Style B has extended deck mounting flange with 20" diameter bolts

21" & 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

QUICK OPENING HATCH



Handwheel top & bottom. 4-Dogs. 16" X 24" with 5" coaming. Drawing #60-40

4-DOG GENERAL PURPOSE 15" X 23" X 5" HATCH



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-ACTING 4-DOG HATCHES

36" Diameter — 26" coaming — 7-dog drop-bolts. Drawing 36/26

TANKER EXPANSION TRUNK



20" ROUND HATCH



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

36" X 48" — 24" X 36" DECK HATCHES



Has 10 brass dogs — 18" coaming Coaming is 12mm — top is 11mm.

FLUSH HATCHES 24" X 30" 30" X 30"



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

NEW 18" & 24" HATCH COVERS



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

NEW 3-DOG WEATHERTIGHT DOORS 26" X 78"



NEW QUICK-ACTING WHEEL OPERATED WATERTIGHT DOORS



6-DOG 5-16" Steel frame — 1/2" panel — 26" X 48" — 30" X 60" — 30" X 69" — 30" X 54"

QUICK-ACTING LEVER-OPERATED 8-DOG WATERTIGHT DOOR



EXTRA LARGE EXTRA HEAVY DUTY PANAMA CHOCKS



Clear opening 16" X 20" — 10" radius — 36" high — 40" long. For extra large tankers or heavy dredges where 1 1/2" wire or eye-spliced loop must pass through chock VLCC type from 250,000 ton tankers

INQUIRE ABOUT ITEMS NOT SHOWN HERE

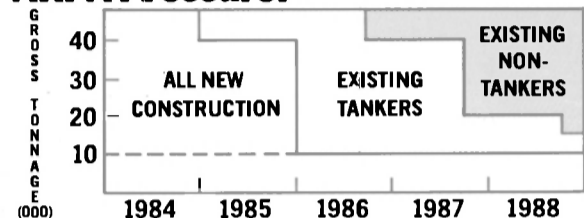
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NEW FROM RACAL MARINE

Modular Design Brings a Radical New Idea to Complex ARPA Systems: Simple Business Sense.

ARPA Pressure:



The scope of IMO-mandatory ARPA continues to grow. In the near future, ARPA will be required on *all* larger vessels. The only variable is *when*.

ARPA Relief:

Modular Design: Economy without Compromise.

Racal-Decca Master Radar systems can cost less—to buy, to upgrade, to service—because of a modular design that fits several radar applications, not just ARPA systems. Major production economies and service simplicity are the results. And with over 500 radar service locations worldwide, quick efficient service helps control operating costs by keep-

ing Master Radars... and ships... running.

Although the "building block" design is new, the Racal-Decca ARPA technology is extensively proven in operation around the world. ARPA 1690 meets or exceeds IMO standards. And collision-avoidance features of the AC module are an instant internal back-up to ARPA capabilities.

Radar today... ARPA tomorrow. You can start with the basic RM 1690 system and upgrade with AC and ARPA modules at low cost as you need them. Plan your smartest path to meeting ARPA requirements with Racal-Decca Master Radar.

AC (Anti-Collision) 1690 Module

True motion
9 relative motion target markers for collision avoidance monitoring.

RM (Relative Motion) 1690 Radar

16" display.
Bright recycled video.
Clearscan® videoprocessing for best picture in foul weather.

ARPA (Automatic Radar Plotting Aid) 1690 Module:

Automatic tracking of 15 targets.
Automatic collision-prediction alarms.
Pre-plotting shows effects of trial maneuvers.
Easy to use "operator-proof" programming.



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