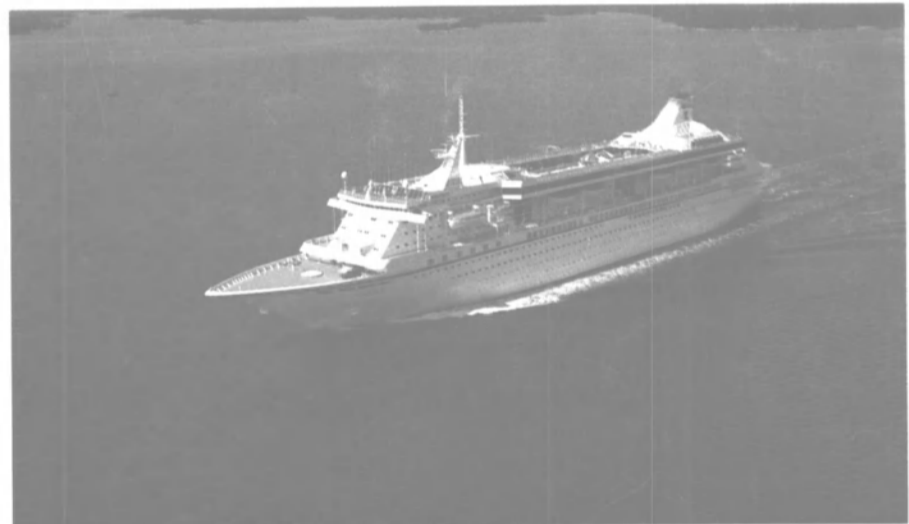
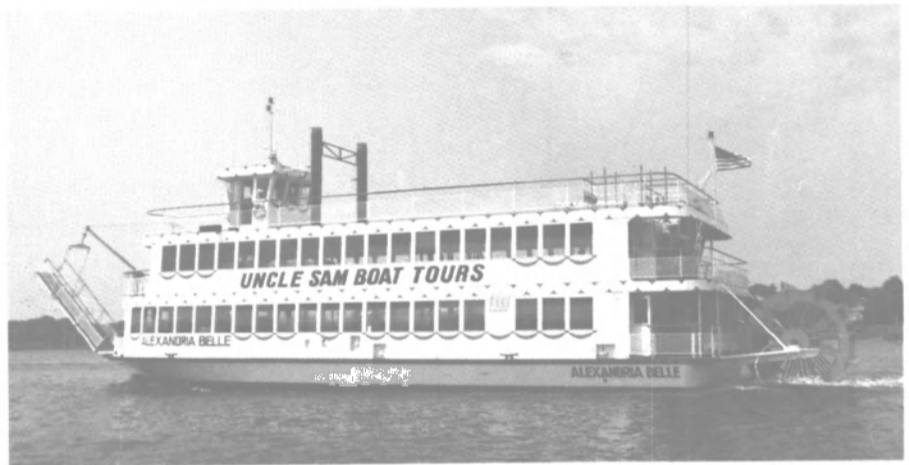


# MARITIME REPORTER AND ENGINEERING NEWS



OUTSTANDING PASSENGER VESSELS OF 1988  
Previews: Cruise '89 • NAVPO Annual Meeting

JANUARY 1989 ISSUE

# WHEN RELIABILITY MEANS MONEY



**A ZF transmission is the best thing next to your engine.**

Fishing boats, tow boats, passenger ferries, & crew boats all realize the benefits of performance & reliability inherent in ZF marine transmissions... the performance measured in bottom line dollars & cents plus the reliability to survive in demanding commercial boats.

ZF marine transmissions redefine the meaning of options; features include trolling valves, trailing pumps, PTO's, cast iron or light alloy housings, diagonal offset shafts, single & double reduction designs, identical performance in forward or reverse, mounting brackets, & transmission lube oil filters.

Simplicity and ease of maintenance are designed into every ZF marine transmission. Oil pumps,

control units & clutches are easily serviced or exchanged without removing the transmission from the boat.



Quality is assured by ZF's strict quality assurance program, employing the latest inspection technology with a system approved by classification societies such as the American Bureau of Shipping (ABS) & Lloyd's Register of Shipping (LRS).

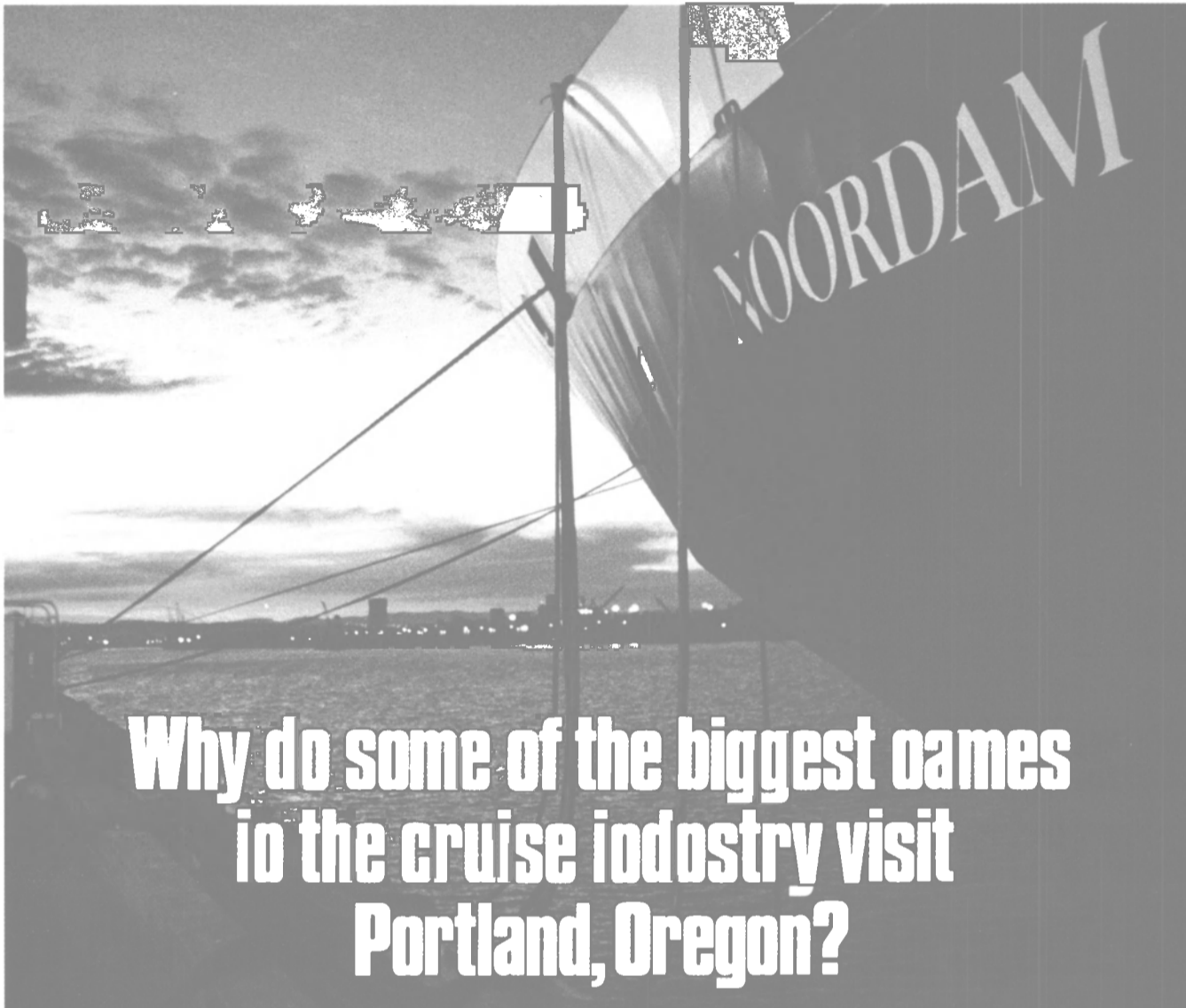
The combination of bottom line performance, reliability, ease of maintenance & a host of available options, backed up by ZF's efficient after sales/service network assures you of the best...ZF!

Send now for full information on ZF marine transmissions including a free copy of ZF's marine transmission guide.

**It costs no more to specify the best.**



ZF of North America, Inc.  
500 Barclay Boulevard  
Lincolnshire, Illinois 60069  
Phone (312) 634-3500  
Fax (312) 634-0736  
Telex 25-5240



**Why do some of the biggest names  
in the cruise industry visit  
Portland, Oregon?**

## **For a very short stay.**

We know you can't afford to have your cruise ship tied up at dock for repairs or service even one extra day. In your business time really is money.

At Northwest Marine Iron Works our commitment to providing quality service, attending to every detail, and maintaining tight schedules has brought us business from some of the most respected names in the

cruise industry. Our ability to deliver finished jobs on time and within budget continues to bring them back.

When you next plan repair or maintenance for your cruise ship, try us. Like others, you'll be pleased with the results. And we promise to make your stay in Portland as short as possible. Call or write us with specifications for your next job. **1/800/547-4782.**



**Northwest Marine Iron Works.  
Keeping the marine industry working.**

P.O. Box 3109, Portland, Oregon 97208 Portland Ship Repair Yard 5555 N. Channel Ave., Building 2, Portland, Oregon 97217  
503/285-7557 1/800/547-4782 TWX: 910/464-6107 NORMARINE PTL

Circle 15 on Reader Service Card

# ON THE COVER

Photos (clockwise from logo): Crown Odyssey, Alexandria Belle, Seaward, Seabourn Pride, Caribe Tide, and Bay Lady.

## MARITIME REPORTER and Engineering News

Editorial and Executive Offices  
118 East 25th Street, New York, NY 10010  
(212) 477-6700 • ITT Telex: 424768 MARINTI  
Telefax: (212) 254-6271

Publishers: JOHN E. O'MALLEY  
CHARLES P. O'MALLEY  
Editorial Director: CHARLES P. O'MALLEY  
Editor: JOHN SNYDER  
Senior Editor: THOMAS H. PHILLIPS  
Consulting Editor: ROBERT WARE  
Advertising Sales Director: JOHN C. O'MALLEY  
Regional Sales Manager: LUCIA ANNUNZIATA  
Production Manager: LILIAN IRVINE  
Circulation Manager: M. SOTTILE

Advertising Circulation and Sales Offices  
118 East 25th Street, New York, NY 10010  
Telephone (212) 477-6700

### REPRESENTATIVES

U.S. Gulf States **MR. JAMES N. McCLINTOCK**  
Wheelhouse One Building  
634 Village Lane North, Suite 205  
Mandeville, LA 70448  
Telephone: (504) 626-7990  
Telefax: (504) 624-5163

Italy **MR. VITTORIO F. NEGRONE**  
Ediconsult Internazionale  
Piazza Fontane Marose, 3-16123 Genova, Italy  
Telephone: (010) 543.659-268.334-268.513  
Telex: 211197 EDINT I  
Editorial Consultant: DR. VICTORIA MUNSEY  
Munsey Consultants  
Strada Del Nobile 59  
10131 Torino, Italy  
Telephone: 11-68-3639 Fax: 11-650-3478

Scandinavia **MR. STEPHAN R. G. ORN**  
AB Stephan R. G. Orn  
Box 184, S-271 24 Ystad, Sweden  
Telephone 0411-184 00  
Telex: 33335 Orn S Telefax: 411 10531

United Kingdom **MR. MICHAEL J. DAMSELL**  
Euromedia, Ltd.  
Tern House, Upper West St.,  
Reigate, Surrey RH2 9HX, England  
Telephone: 07372 42558 Telefax: 0737 223235  
Telex: 932699 KENPUB G.

Korea **MR. CHRIS MAENG**  
IPR Int'l PR, INC.  
Yongsan, P.O. Box 100, Seoul, Korea  
Telephone: 273-7765 Telex: MOCNDM K23231

Japan **MR. TOSHIO EGUSA**  
Publinetwork, Inc.  
C407, 2-22-6, Tsukuda,  
Chuo-ku, Tokyo 104 Japan  
Telephone: (03) 459-9618  
Fax: 436-1931 Telex: 2425280 BESNA J

Singapore **MR. VICTOR CHIA**  
Market Trends Pvt. Ltd.  
122 Middle Road, #07-08  
Midlink Plaza, Singapore 0718  
Telex: HENSAL RS20006

## SAVE up to 300 barrels of oil per year!

### ELIMINATE THAT OLD STEAM HORN

The Kahlenberg **TRITON** Piston Horn is a unique sound producing unit because it requires no compressed air and no diaphragms yet utilizes air vibrations in a tuned sound column. The unit consists of an electric motor driving a piston with a cylinder similar in appearance to an air compressor. Very economical to operate and install. Write for bulletin. 92C. The KB-20 electric horn is available in 110 volt, A.C. or 24 volt, D.C. for vessels up to 246' in length.



## KAHLENBERG BROS. CO.

1956 Monroe St.  
Two Rivers, Wisconsin, 54241 U.S.A.  
414-793-4507

Circle 234 on Reader Service Card

### CRUISE '89 —Preview— PAGE 10

### NAPVO Annual Meeting A Preview PAGE 12

### Outstanding Passenger Vessels of 1988 PAGE 16

### NEXT MONTH 1989 NAVY ANNUAL

### Hvide Shipping Forms New Tug Division, Mobile Bay Towing

J. Erik Hvide, president of Hvide Shipping, Incorporated, Fort Lauderdale, Fla., recently announced that Hvide has formed a new tug division, Mobile Bay Towing, which will conduct a harbor tug and towing services operation in the Port of Mobile, Ala.

Mobile Bay Towing will be headed by **Robert A. Santos**, senior vice president and head of all Hvide tug and towing operations, and **J. Edgar (Eddie) Brister**, vice president, formerly with St. Philip Towing.

In connection with forming the new tug division, Hvide Shipping has purchased two tugs and other assets from St. Philip Towing of Tampa, Fla., who will discontinue their Mobile operations. Mobile Bay Towing will operate three tugs to be known as the Mobile Power, Mobile Persistence, and Mobile Pride.

Hvide Shipping, in addition to its other marine transportation activities, presently conducts harbor tug and towing operations in Port Everglades and Port Canaveral, Fla.

For more information and free literature,

Circle 62 on Reader Service Card

**MARITIME  
REPORTER**  
AND  
**ENGINEERING NEWS**

ISSN-0025-3448

No. 1

Volume 51

118 EAST 25th STREET  
NEW YORK, N.Y. 10010  
(212) 477-6700  
Telex: MARINTI 424768  
Telefax: (212) 254-6271

ESTABLISHED 1939

Maritime Reporter/Engineering News is published monthly by Maritime Activity Reports, Inc. Mailed at Second Class Postage Rates at Waterbury, CT 06701 and additional mailing offices.

Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 118 East 25th Street, New York, NY 10010.

Member



Business Publications  
Audit of Circulation, Inc.

## Tidewater Marine Adds Two MarAd Vessels To Worldwide Fleet

Tidewater Inc.'s marine division, Tidewater Marine Service, has acquired two 185-foot, 3,000-hp towing-supply vessels from the Maritime Administration at an aggregate cost of approximately \$2.3 million. Tidewater Marine has purchased 19 vessels over the past 10 months and currently owns a worldwide fleet of 264.

Tidewater Inc. has been in offshore service since 1956 and owns and operates one of the largest fleets of vessels supporting the international offshore oil and gas industry.

## Congress Passes Water Resources Development Act Of 1988

**Robert W. Page**, Assistant Secretary of the Army for Civil Works, recently announced that Congress has passed the Water Resources Development Act of 1988 which authorizes 16 new projects for the Army Corps of Engineers at a total cost of \$1.6 billion. The bill's 16 new construction projects require non-Federal cost-sharing of over \$600 million.

## Esso Canada Installs MMS System Aboard Tanker, Imperial St. Clair

Marine Management Systems (MMS) was recently awarded a contract by Esso Petroleum Canada to implement their PC-based Spare Parts Inventory Management (SPIM) system aboard the coastal tanker Imperial St. Clair, according to an announcement made by MMS vice president **Don Logan**. The implementation for the Imperial St. Clair is the first of three shipboard SPIM systems planned by Esso.

Full system software, training, installation and ongoing support for the project will be handled by MMS' technical staff in Stamford, Conn. MMS has been providing computerized management information systems for the shipping industry since 1969.

For more information and free literature from MMS,

Circle 15 on Reader Service Card

## Northwest Marine Services Named Distributor Of Hamilton Marine Jets

Northwest Marine Services, Tukwila, Wash., recently announced the availability of Hamilton Marine Jet Propulsion units having horsepower requirements ranging from 50 hp up to 1,600 hp. A marine sales, engineering and service corporation, Northwest Marine Services is the

Hamilton Jet distributor for commercial and pleasure boating for the states of Oregon, Idaho, Washington, Alaska and, on a non-exclusive basis, California.

The Hamilton Jet is powered by a conventional inboard engine. The pump draws water through a screened duct in the bottom of the hull and discharges it, under pressure, through a nozzle mounted in the transom. A deflector directs the flow of water for control in forward, neutral and reverse positions, while

the nozzle controls the water jet for precision steering, even at "zero speed." Power braking is achieved by redirecting the water flow, producing no stress on machinery. In an emergency under full power, the unit's reverse bucket can be lowered to serve as a reverse thrust baffle for power braking.

The Hamilton Jet requires very little maintenance and simplifies basic servicing: no special tools are required to service the jet and only one point of the unit needs lubrica-

tion every 50 hours. These energy-efficient jets have been chosen for slow speed propulsion in up to 80-ton vessels and for high-speed propulsion in up to 40-ton passenger, fishing and patrol vessels.

Northwest Marine Services also specializes in a variety of products related to the propulsion, maneuvering and control of ship and offshore structures. For more information and free literature,

Circle 24 on Reader Service Card

# WHAT PRICE ARE YOU WILLING TO PAY FOR MARITIME SATELLITE COMMUNICATIONS?

## For the lowest early morning ship-to-shore telephone rates to Europe, COMSAT comes through loud and clear.

With COMSAT Maritime Services, you can get the high quality that satellite calling offers at rates that are lower than anywhere else. You pay our new through-rate of \$8 per minute—ship to our Coast Earth Station then to Europe (one low price)...free of hidden charges or add-ons. And every call is backed by the technology and reliable service that has put COMSAT at the forefront of international satellite communications.

For a clear connection on maritime satellite calls, call 1-800-424-9152 or 202-863-6567 right now for your new rate card. And stop paying a high price for something less.

 **COMSAT**  
Maritime Services

950 L'Enfant Plaza S.W., Washington, D.C. 20024  
Certain restrictions apply.

Circle 20 on Reader Service Card

# TOURIST SUBMARINES MARK ENTRANCE INTO NEW ERA FOR PASSENGER VESSEL INDUSTRY

By James B. Cain\*

*\*Editor's Note: Mr. Cain is chairman of the board of Nautilus Submarines of America, Inc., a Fort Pierce, Fla.-based company specializing in the manufacture, development, and marketing of tourist passenger submarines. The firm is currently considering joint venture partnerships for operation of the submarines with a variety of investors. Mr. Cain also is owner and president of Indian Trails, Inc., a luxury community in Vero Beach, Fla.*

As tourist passenger submarines troll undersea reefs and shipwrecks off the coasts of Caribbean islands, their operators are reaping treasure in the form of extremely high profit margins.

Now, for the first time, these lucrative attractions are presenting opportunities for investors in the U.S., and there is plenty of room for growth and expansion.

In fact, in a recent *Time* magazine article, industry analysts predicted a \$250-million-per-year market with more than 100 passenger submarine operations by early next decade.

The industry first experienced a period of rapid growth during the early 1980s, when manned submarines in the offshore oil industry were effectively replaced by cost efficient Remotely Operated Vehicles (ROVs).

Perceptive engineers and investors realized that this inactive submarine fleet created an opportunity for the general public to enjoy the previously exclusive experience of underwater submarine exploration. Larger multipassenger submarines were developed to serve the growing consumer demand, and the first multipassenger tourist submarine began operation in the Cayman Islands in 1986.

The potential revenue that the attractions can generate is substantial; the submarines dive at least five times a day, operate at approximately 90 percent capacity, cost

about \$50 per person per ride, and carry about 50 people. The standard submarine costs about \$2.5 million, and investors can expect to turn a large profit within two years or less.

However, until recently, the Jones Act somewhat restricted the expansion of the submarine operations off the coasts of the continental U.S. and Hawaii. Anyone wanting to become involved in this growing industry in the U.S. is required to comply with the regulations and build the submarines here with approval and certification by the U.S. Coast Guard.

Although there are manufacturers in the U.S. that specialize in underwater technology, few have actually built submarines oriented toward carrying passengers for recreational purposes.

To overcome this obstacle, one option is to establish a business relationship with an experienced manufacturer overseas, and enlist a technology transfer. Another option would be to team up with professionals in the existing commercial submarine industry in the U.S. and attempt to develop the vessels. Both options involve quite a bit of time, risk, and money.

The simplest, easiest way to enter the industry and take advantage of the outstanding profitability is to join forces with a company that has already purchased the technology and that has the full capabilities of manufacturing the submarines at a U.S. location.

This way, an investor can benefit from proven expertise not only in the manufacturing, but also in the marketing and design of the submarines.

The design of the submarines generally resembles that of an airplane and the interior can be customized to meet specific tastes and

requirements based on the operating location.

Viewpoints should be large and plentiful to ensure an open, serene atmosphere, and the design should incorporate ample headroom space.

The submarines can descend to depths of 250 feet. Electrically powered thrusters propel the vessels and allow precise maneuvering to preserve the underwater surroundings.

There are several criteria for the site selection. Again, it is wise to work with a firm that has previously conducted feasibility studies and that is fully aware of the myriad

conditions that compose an ideal dive site.

For example, the site should have relatively calm waters to facilitate the transfer of passengers from the sub tender to the submarine. Of course, the water should be clear for maximum visibility, and the area should have a deep-water harbor.

With the proven potential for high profitability and success of the submarines on the handful of islands that currently offer the attraction, the market is ripe for additional investors to enter the industry at sites both in the U.S. and worldwide.

## ZF Offers Wide Range Of Marine Gears For Workboats/High-Speed Craft

—Literature Offered—

The West German firm of Zahnradfabrik Friedrichshafen AG (ZF) offers an outstanding selection of marine gears. The field of application of ZF marine gears can be divided into two typical groups: gears for workboats and gears for high-speed craft.

Workboats fitted with ZF gears include fishing boats, tugs, inland craft, supply ships and ferries. High-speed craft featuring ZF gears include sport and leisure vessels (yachts, etc.); official craft (police, customs and Coast Guard as well as rescue, pilot boats and all types of Navy craft); and high-speed ferries and crewboats.

Some of the latest commissionings with ZF marine gears include the following:

The 125-foot customs cruiser Schleswig-Holstein. For the triple-shaft propulsion system with Deutz MWM engines of the 604 series, ZF delivered two gears of type BW 465 and one type BU 465 for transmitting the power of 1,100 kw each to the propellers.

The 92-foot shore patrol boats Sylt and Fehmarn are equipped with twin-shaft propulsion systems for which ZF supplied gears of type BW 460 and BU 460, respectively, for transmitting the power of the

Deutz MWM engines to the propellers.

The 132-foot yacht Octopussy, said to be the fastest megayacht in the world at a speed of more than 50 knots, is fitted with three ZF gears of type BW 755 transmitting the engine power to KaMeWa water jet propulsion units.

The 116-foot catamaran high-speed ferries Virgin Butterfly and Santa Maria are fitted with ZF gears of BW 755D type transmitting the Deutz MWM engine power to KaMeWa water jet propulsion units.

The catamaran Efortoft is fitted with BU 255 model ZF gears to transmit the power of the Deutz MWM engines to KaMeWa water jet propulsion units.

For other marine applications, Zahnradfabrik Friedrichshafen also offers compact and lightweight reduction and reversing transmissions. The ZF group produces in Germany (Friedrichshafen), Italy (Padua) and Brazil (Sao Paulo) an annual total of more than 10,000 gears for maritime application, some with trolling devices and some with diagonally offset shafts.

For further information and free literature on ZF gears,

Circle 36 on Reader Service Card



## Atlantic Marine Expo

Sponsored by National Fisherman

The Right Show...  
By The Right People

Exhibit in the one show designed to reach more commercial fishermen and workboat professionals in the Eastern United States and Canada than all the others

NOVEMBER 9-11, 1989  
WORLD TRADE CENTER  
BOSTON, MASSACHUSETTS

Don't miss your best sales opportunity on the East Coast in 1989. Plan NOW to exhibit at ATLANTIC MARINE EXPO

For more information, call or write:  
ATLANTIC MARINE EXPO  
5 Milk Street, P.O. Box 7437 DTS  
Portland, Maine 04112  
207-772-3005, FAX: 207-772-5059

ATLANTIC MARINE EXPO is sponsored by National Fisherman, the same people who bring you the highly successful FISH EXPO and PACIFIC MARINE EXPO. ATLANTIC MARINE EXPO will attract top buyers from the Northeast's commercial marine industry.

Circle 204 on Reader Service Card

"We make them light  
as a feather!"

Booths • Tables • Benches  
Interior and Exterior

- Various Designs
- Light Weight
- Lowest Fire Load
- Coast Guard Approved
- Complete Decor Assistance

More Information:

Ph 206/221-2376

Fax 206/221-2141

marine  
interiors, inc.

P.O. Box 728 Langley WA 98260

Circle 114 on Reader Service Card

Maritime Reporter/Engineering News

# PROPULSION UPDATE

## 500th Voith Water Tractor, First Of New Generation, Now Under Construction\*

—Report Available—

Over the years, numerous experiments have taken place in ship towage. One concept, however, has remained unchanged, that being the Voith water tractor. This year the 500th Voith water tractor is under construction, which provides an ideal opportunity to reflect on what led to the development of this tug type and its ever increasing prominence within the towage industry.

The problems and risks involved in ship-handling are well known. With the development of the Voith-Schneider propeller, it was possible to depart from traditional ideas, i.e., of having the screw and rudder aft, and to venture to design a system which initially takes into account the problems encountered in ship-handling.

The special characteristics of the Voith-Schneider propulsion system which created an effective solution to existing problems are reviewed, as follows:

- The axis of rotation of the propeller is perpendicular to the thrust plane.

- Within this plane the thrust can be infinitely varied in magnitude and direction.

- The blade profiles are arranged parallel to the axis of rotation and are therefore untwisted along their entire length. Thus zero thrust is clearly defined when the blade pitch is nil.

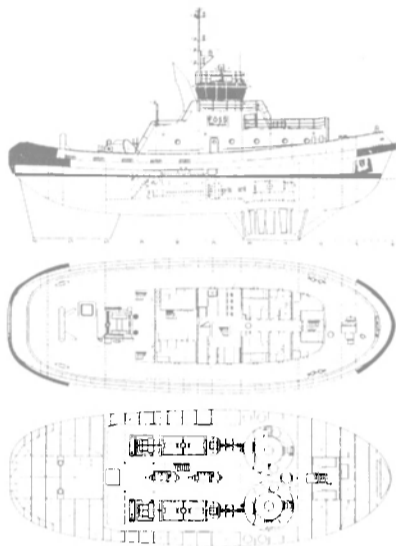
- Propeller pitch and thus thrust are controlled in respect of magnitude and direction according to rectangular coordinates. By a combination of the two coordinates, thrust changes can pass quickly through zero without creating any extraneous thrust in undesired direction.

- Because of its vertical axis, the propeller position can be chosen to optimize the correlation with the hull in respect of a particular task.

- The VSP is extremely robust due to the very low rotational speed of the rotor.

The free arrangement of the Voith-Schneider propeller under the vessel was ruled out because of the possible problems of grounding, lateral contacts and the crossing of chains and towlines. These potential problems were, however, countered with a guard plate which protects the blades and at the same time acts as a nozzle plate.

It was now possible to arrange the propellers forward ahead of the center of rotation of the vessel, giving it an active front steering which is comparable to a car with front-wheel drive and steering. The tow-



General layout of a modern Voith water tractor.

ing gear was shifted aft behind the center of rotation of the vessel and a stabilizing fin arranged under it. Thus, the tractor principle came into being which still exists fundamentally unchanged today.

The introduction of the Voith water tractor in ship-handling service proved to be a significant step toward improving ship safety. The first vessel of a new generation, now under construction in Antwerp, will be the 500th Voith water tractor to be built and in the 35-year history of this type of vessel, operational in about 100 ports around the world.

For further information and a free copy of the article on the 500th Voith water tractor

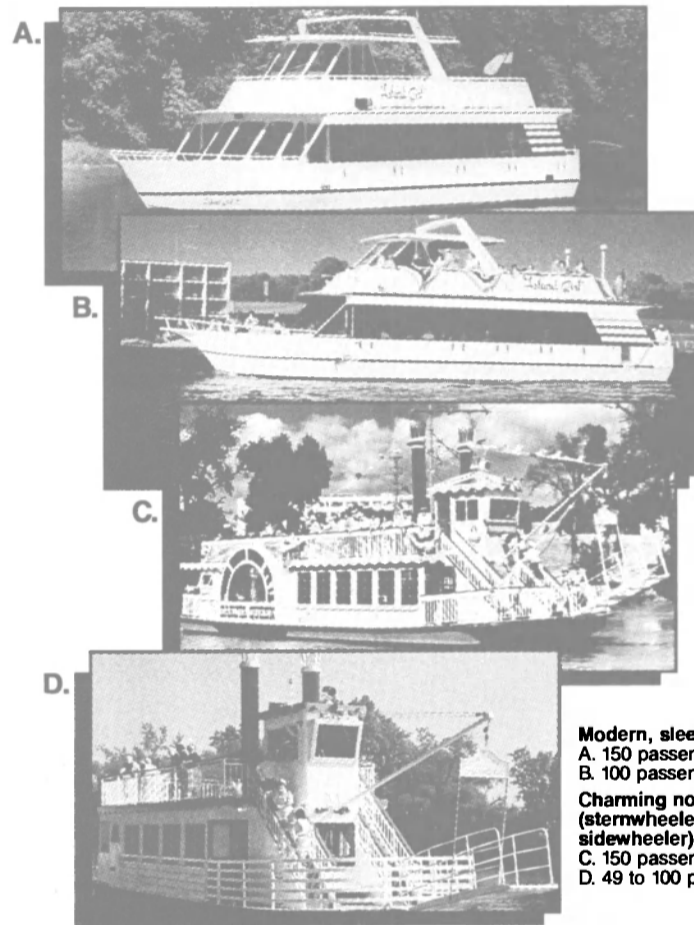
Circle 46 on Reader Service Card

*\*The above article is taken from an essay, "500th Voith Water Tractor—A Brief Review," by Dipl.-Ing. U. Sturmhofel, project manager in the Marine Engineering Division at J.M. Voith GmbH, Heidenheim.*

### COSCO To Set Up Own Repair Yard

China's largest maritime carrier, China Ocean Shipping Co. (COSCO), plans to set up its own repair yard and will locate a 100,000-ton dock at a newly acquired site at Nantong in central Jiangsu province near the mouth of the Yangtze River. The facilities will be used to maintain the more than 600 vessels in Cosco's fleet. The site has a frontage of 1,000 yards, and a water depth of 65 feet.

## When you choose *SkipperLiner*, you own a boat . . . and a business



Modern, sleek luxury  
A. 150 passengers  
B. 100 passengers  
Charming nostalgia  
(sternwheeler or  
sidewheeler)  
C. 150 passengers  
D. 49 to 100 passengers

At SkipperLiner, we are in business to help you succeed in business. Check out these "SkipperLiner Advantages:"

- **Superior craftsmanship** We construct each SkipperLiner excursion boat to uncompromised standards of materials and workmanship. This devotion to quality has made SkipperLiner Shipyards the largest U.S. builder of custom excursion boats in their class.
- **Turnkey operation** We offer a total turnkey operation, including a fast-start ticket sales plan, comprehensive training and financial resources.
- **Volume production** We can manufacture commercial boats in ten weeks and deliver on time.
- **Competitive pricing** Our efficient factory operation means you do not have to pay more for superior quality and service.
- **Fall discount program** Ask about our special pricing for fall and winter production.

We're sure you'll choose the "SkipperLiner Advantages!"  
Call (608) 784-5110, ext. 21 today for additional information.

*SkipperLiner*  
The Margin of Excellence



**SkipperLiner Shipyards**  
621 Park Plaza Drive, Dept. 21 La Crosse, WI 54601 • (608) 784-5110, Ext. 21

Circle 318 on Reader Service Card

## Tax Corrections Act Offers Good News To Domestic Operators

The recent passage of the Tax Technical Corrections Act, HR 4333, by the 100th Congress, offered some good news for domestic inland waterways operators.

Included in the measure was the long-awaited correction to the diesel

fuel tax inequity which began on April 1, 1988. Waterway operators and other off-highway users continued to pay the tax through December 31, 1988. Now off-highway users will be able to purchase diesel fuel tax free. Sellers and purchasers must submit information to the IRS verifying that the fuel is utilized for non-highway purposes. The tax paid between April 1 and December 31, 1988, is refundable, with a special

one-time refund with interest. Amounts that have already been submitted on a quarterly claim for refund or that have been or will be claimed as a credit against other tax payments (such as the inland waterway fuel tax) are not eligible for the special one time interest bearing refund.

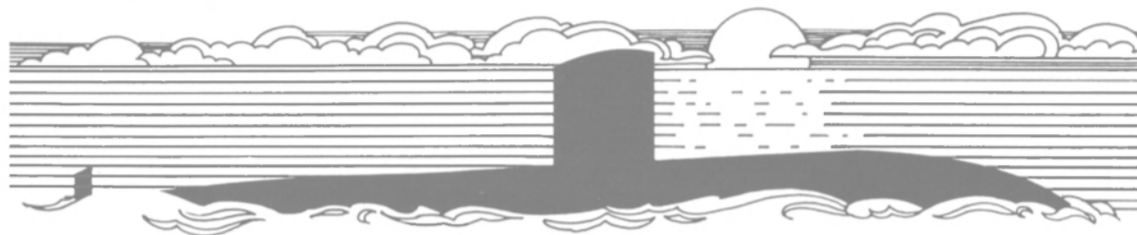
In addition, full deduction of crew meal costs was also included in the Tax Technical Corrections Act.

Operators will be able to deduct crew meals that (1) are required by federal law to be provided to crew members of a commercial vessel, or (2) are provided to crew members of a commercial vessel operating on the Great Lakes, the St. Lawrence Seaway, or the U.S. inland waterways that is of a kind that would be required by federal law to provide food or beverages to crew members if operated at sea. This provision is effective for taxable years beginning after December 31, 1988.

Furthermore, the Act also exempts certain cargoes from the Harbor Maintenance Tax established in P.L. 99-662. This revision provides that the tax will be imposed only once on cargo, moving under a single bill of lading, unloaded from one vessel and loaded onto another at any U.S. port for relay to or from Alaska, Hawaii, or any U.S. possession.

For additional information, contact: **Dena Wilson**, American Waterways Operators, vice president-legislative affairs, at: (703) 841-9300.

# HENSCHEL. A LEADER IN NAVY SHIP CONTROL AND MONITORING SYSTEMS.



**DESIGN • ENGINEERING • MANUFACTURING  
RELIABILITY • COST EFFECTIVENESS**

**HENSCHEL**

70 Years of Proven Performance

9 Hoyt Drive, P.O. Box 30, Newburyport, Massachusetts 01950 U.S.A.  
(508) 462-2400 Telex: (RCA) 294074 • FAX: (508) 462-4497

Circle 201 on Reader Service Card

## Seacor Opens Pensacola Office

Systems Engineering Associates Corporation (Seacor) recently announced the opening of their Pensacola, Fla., office. This marks the establishment of Seacor's 16th location worldwide, with corporate headquarters in Mount Laurel, N.J.

Seacor's new Pensacola address is: Systems Engineering Associates Corporation (Seacor), 1149 Creighton Road, Suite 5, Pensacola, Fla. 32504, phone (904) 484-3601.

Seacor's newest office was established through the recent award of a \$6.6-million contract in which the company will support the Chief of Naval Education and Training's Naval Education and Training Program Management Support Activity on its various training programs. More than 30 Seacor training specialists, housed in the Pensacola office, will provide curriculum development support to the U.S. Navy training community.

For more information and free literature on Seacor,

Circle 25 on Reader Service Card

## SESA Elects Croushore New President

The Southeast Shipyard Association (SESA), an organization comprised of mid-sized commercial shipyards located in South Carolina, Georgia, Florida and Alabama, recently elected **Bruce J. Croushore**, its new president.

Mr. Croushore, who serves as secretary and general counsel of Bender Shipbuilding & Repair Co., Inc., Mobile, Ala., succeeds **Harry L. Bell**, president of Runyan Marine, Pensacola, Fla.

**MARCO OIL SPILL and DEBRIS SKIMMERS**

The only skimmers with our unique **FILTERBELT** system, proven effective in all oil spill conditions.



More than 75 operating worldwide

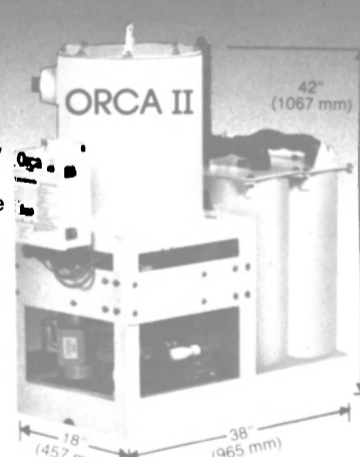
- Full engineering & shipyard facilities
- New construction or conversions
- Standard or custom vessels

REQUEST OUR FREE BROCHURE

**MARCO POLLUTION CONTROL**  
2300 West Commodore Way • Seattle, WA 98199 USA  
Phone (206) 285-3200 • Telex 160587 MARCO UT  
FAX (206) 283-4731

Circle 185 on Reader Service Card

**Economical ORCA Sewage Treatment Systems offer:**



**Space saving physical/chemical design** requires 90% less space than biological systems.

**Low installation costs**

**Simple, automatic operation**

**Low operating and maintenance costs**

**Reliable micro-processor control**

**Quick delivery...** 6 standard models

Model	II-12	II-24	II-36	II-165	II-330	II-500
Number people served	12	24	36	165	330	500

\*If low volume flush toilets are used, the number of people can be doubled

**USCG certified and IMO approved**

Call or telex Dick Lambert for technical information, brochures or a quotation on a specific model.

**ENVIROVAC INC.** 1260 Turret Drive, Rockford, IL 61111 U.S.A.  
Telephone 815/654-8300, FAX 815/654-8306, Telex 257415  
Toll Free (USA & Canada) 800/435-6951 (ex. IL)

Circle 152 on Reader Service Card



**Texaco Marine Services  
Names Gaffney President,  
Chief Operating Officer**



James F. Gaffney

James F. Gaffney, general manager, distribution and operations, Texaco Limited London, was recently named president and chief operating officer of Texaco Marine Services Inc.

Mr. Gaffney succeeds William R. Cumming who will retire following more than 28 years of service with the company.

Texaco Marine Services, located at Port Arthur, Texas, manages the day-to-day operational activities of the various Texaco fleets as well as providing ship management services to other shipowners.

Mr. Gaffney joined Texaco fleet operations in 1959 as a navigating officer. After serving in various supervisory and managerial assignments he was appointed to his current position and concurrently serves as general manager of Texaco Overseas Tankship Ltd.

Captain Cumming, who joined Texaco in 1960, served in various fleet and management positions both in the U.S. and abroad, including several years as general manager of Texaco's Panamanian fleet, headquartered in Monte Carlo. With the consolidation of fleet activities under Texaco Marine Services Inc. in 1984, he was named president of the new company.

**Drew's 'Edge' Heavy-Duty  
Cleaner Approved By USN  
For Use On Flight Decks**

Drew Ameroid Marine, Boonton, N.J., recently reported that after extensive tests by the U.S. Department of the Navy, its Edge™ heavy-duty cleaner was classified as an acceptable cleaner, and a letter recommending its use was sent to each ship in the entire naval fleet and to each Navy Supply Center.

According to Drew, Edge is especially recommended for deck, engine room, and steward uses, such as cleaning bulkheads, tank tops, bilges, machinery, engines, tools, and galleys. Edge is available worldwide in over 150 ports and is currently being used by several thousand oceangoing vessels.

For more information on Edge heavy-duty cleaner, and Drew Ameroid Marine's other chemicals for fuel, water and maintenance treatments,

Circle 12 on Reader Service Card

**Supply Vessel Overhauled  
By Homeport Marine**

Homeport Marine Services, Moss Point, Miss., formerly Quality Shipbuilders, Inc., has recently completed a rework project on the supply vessel Hope Tide, according to the firm's president Jack Edwards.

Homeport Marine performed extensive work on the 180-foot vessel's propellers, shafts, rudders and other associated underwater gear. This work was accomplished in drydock through the assistance of Flechas Shipyard in Pascagoula, Miss.

Hull painting as well as deck plating repair was performed along with necessary cleaning and testing to comply with regulatory body speci-

fications.

The Hope Tide, which is owned by Tidewater Marine Services, Inc., New Orleans, La., returned to service in Mexico after her overhaul was completed.

For free literature detailing the diverse new construction and repair capabilities of Homeport Marine Services,

Circle 43 on Reader Service Card

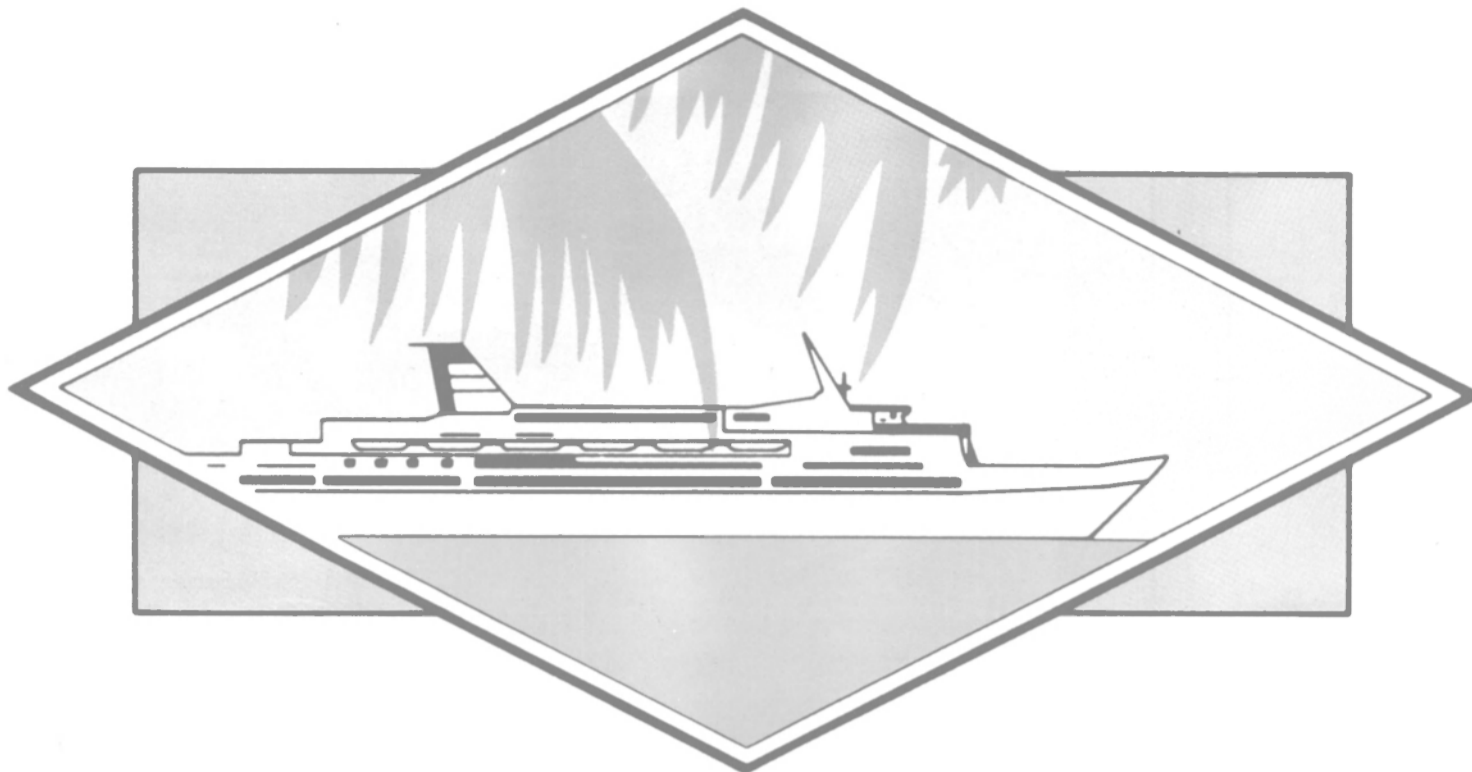
Colonna's Shipyard, founded in 1875, is the oldest family-owned private shipyard in the United States. Today, Colonna's is a forward-looking full-service ship repair facility with a 17,200-ton steel drydock, three marine railways and complete shop and pier facilities. The company's reputation is built on a long tradition of quality workmanship, on-time completions and solid business management.

# Building On A Proud Tradition



400 East Indian River Road, Norfolk, VA 23523  
(804) 545-2414 • Fax (804) 545-5475 • Telex 823639 DIESEL NFK

Circle 174 on Reader Service Card



# CRUISE SHIPPING 89

Miami, Florida, February 28-March 3

Conference & Exhibition Expanded

Following its sell-out success in February 1988, the Seatrade Cruise Shipping Conference and Exhibition, now in its fifth year, is to be expanded by an extra day and moved to a new and larger venue in Miami. Conference attendance for this year's event, Cruise Shipping '89, is expected to match or exceed last year's total of 500 marine industry delegates, 60 exhibition stands and 800 attendees. The majority of the space in the new and greatly expanded exhibition area has already been reserved for 1989.

The Seatrade event will be held at the Miami Inter-Continental Hotel from February 28 to March 3, 1989. The regular two-day conference program will be supplemented by a third day of seminar programs. In one of the seminars, organized by Seatrade in conjunction with the Cruise Lines International Association, a panel of cruise travel agents and cruise line marketing specialists will look at cruise sales and distribution. Another seminar will concentrate on operational and technical issues.

Delegates and exhibitors will have the option to remain in Miami for an extra day, Saturday, March 4, to take part in a port and ship inspection program on the day of the week when the port of Miami is filled to capacity with cruise vessels.

The Seatrade Conference and Exhibition, held annually in the U.S. since 1985, has become the premiere meeting place for cruise industry leaders from all over the world, representing the cruise lines, the travel trade, the financial community, tourist authorities and suppliers. The exhibition, which has doubled in

size in each of the last two years, was a sell-out this year.

For further information, contact: **Sharon Day**, the Seatrade Organization, Fairfax House, Causton Road, Colchester CO1 1RJ, United Kingdom; telephone: (0206) 45121; telex: 98517 DISOP G; telefax: (0206) 45190; or **Mike Kazakoff**, Seatrade North America Inc., Suite 1805, 40 Rector Street, New York, N.Y. 10006; telephone: (212) 393-1000; telex: 233629 SEA UR; and telefax: (212) 608-5874.

## CONFERENCE PROGRAM

### Tuesday, February 28

**3 p.m.**—Seatrade Cruise Shipping '89 Exhibition opens. Conference delegate registration begins in the exhibition hall.

**7 p.m.**—Seatrade Organization welcoming reception.

### Wednesday, March 1

#### Morning session

"The Outlook for the Industry"

**Keynote address**—**A. Kirk Lanterman**, president, Holland America Line-Westours Inc. and chairman, Cruise Lines International Association.

A panel of cruise industry personalities will debate a series of key issues, including: "The impact of consolidation and merger on the market"; "Is overcapacity a real or imagined threat to the industry?"; "Where will the new pockets of demand be found?"; "What is the outlook for the mega-vessel?"; and "Discounting and the maturing of the cruise industry."

Speakers and panelists will include: **Tim Harris**, president, Princess Cruises; **Pericles Panagopoulos**, chairman, Royal Cruise Line Ltd.; **Robert W. Seckman**, managing director, Travel Agency Services, AAA; and **Robert H. Dickinson**, senior vice president, sales and marketing, Carnival Cruise Lines.

#### Luncheon Address

**Carmen J. Lunetta**, port director, Port of Miami.

### Afternoon session

#### "Analysis of the Cruise Product"

**Product**—"How well do you know your competition? What is the reality behind the claims?" **Joyce Landry**, executive director, Landry & Kling Inc. and **Josephine Kling**, president, Landry & Kling, Inc.

**Promotion**—Advertising and Promotional Techniques Analyzed. **Jay J. Lewis**, president, Market Scope Inc. and Dr. **Dan Sarel**, director, Market Scope Inc.

**Place**—Cruise Sales and the Distribution Channels. Dr. **Stanley L. Buchin**, senior vice president, Temple, Barker & Sloane Inc.

**Prospects**—The Demand Outlook for the Industry. **Jim Godzman**, president, Cruise Lines International Association.

**Price**—Cruise Line Per Diems and Pricing Policy. Speaker to be confirmed.

**6:30 p.m.**—Reception and Dinner Hosted by the Port of Miami.

### Thursday, March 2

#### Morning session

"Operating for Profit"

"Cruise Lines and Ferry Operations—What Can Each Learn from the Other?"

**Thomas Lepisto**, president, Sally Line, Finland.

"U.S. Flag Cruise Operations," **James L. Kurtz**, chief executive officer and general partner, Aloha Pacific Cruises, and **John Broughan**, chief operating officer, Aloha Pacific Cruises.

Step by Step Assessment of the Viability of a New Cruise Venture, **James F. DeChant**, executive vice president, Ivaran Agencies.

"Cruise Ship Financing Alternatives," speaker to be announced.

"The Insurance Factor," speaker to be announced.

**Luncheon Address** by Rear Adm. **Joel D. Sipes**, Chief of the Office of Marine Safety, Security & Environmental Protection, U.S. Coast Guard.

#### Afternoon session

"Destinations"

In an expanding market, the search continues for new and exotic itineraries. But what are the cruise lines looking for when they consider destination options?

**Speakers: William Schanz**, chairman and

chief executive officer, Regency Cruises Inc.; **Robert Giersdorf**, president, Exploration Cruise Lines; and **Gwyn Hughes**, managing director, Princess Voyages.

In addition, four expert speakers will provide concise and factual reports on a selection of important theatres of cruise activity, their current situation and future prospects, including: the Pacific, Mediterranean, Caribbean and Mexico.

#### Evening reception

Hosted by Portland Ship Repair Yard

### Friday, March 3

Two separate seminars will run in parallel on the fourth day of Cruise Shipping '89, and delegates are asked to specify which program, A or B, they wish to attend, when submitting their attendance application.

#### Program A

"Sales, Marketing and Distribution"

A panel of cruise agents and cruise line marketing specialists will look at the fundamentals of cruise sales and distribution, with opportunities for extensive audience participation.

**Panelists: Debbie Adams**, president, National Association of Cruise Only Agents (NACOA); **Bryan Moreton**, chairman, shipping committee, Association of British Travel Agents; **Arthur Rodney**, president, Crystal Cruises; **Ken Page**, director, Passenger Shipping Association; and others to be announced.

#### Program B

"Cruise Ship Technology and Vessel Operations"

A series of technical and operational issues will be discussed in detail by a panel of experts, including both cruise line operations executives and the providers of technical services. The program will concentrate on cost benefit and efficiency rather than the technology for its own sake. Again, full audience participation will be encouraged.

**Panelists: Capt. Aage Linstad**, vice president, marine operations, Royal Caribbean Cruise Line; **Krister Slotte**, marketing and sales manager, Oy Wartsila AB; **G.J. Deenberg**, managing director, Deerberg-Systeme; **Maurice Shepherd**, director of marine services, CLC Marine Services; **Mats**

Ohrstedt, chief executive, Gothenburg Radio; and others to be announced.  
**Saturday, March 4**

Optional extended tour of the Port of Miami, on day when the majority of Miami-based cruise vessels are in port.  
Program is subject to change.

## Offshore Safety Advisory Group Established By DOT

A National Offshore Safety Advisory Committee (NOSAC) has been created to assist the U.S. Coast Guard in carrying out its responsibility for the safety of life and property on the Outer Continental Shelf, Secretary of Transportation **Jim Burnley** recently announced.

"Increased communication between the Coast Guard and industry on major safety matters of mutual concern will contribute to the development of effective and efficient safety regulations," Mr. **Burnley** said. "The Coast Guard is responsible for developing regulations which affect all segments of the offshore mineral and energy industry. These initiatives must be carefully planned to insure the highest level of safety to all personnel without creating unwarranted adverse impact on an industry currently facing economic difficulties," he added.

The 14-member NOSAC will include representatives of petroleum producers, drilling companies, supply and support vessel operators, offshore construction, offshore pipelines, geophysical services, diving operations, offshore workers, environmental interests and the public.

## A.G.M.A. Elects Haley To Serve Three-Year Term On Board Of Directors



E. Ray Haley

**E. Ray Haley**, president and director of engineering for Marine Gears, Inc., Greenville, Miss., was recently elected to serve a three-year term on the board of directors of American Gear Manufacturer's Association (A.G.M.A.), headquartered in Alexandria, Va.

At the recent A.G.M.A. technical meeting in New Orleans, Mr. **Haley** was received on the board of directors and awarded a special certificate for his many years of work in preparing a new marine gear propulsion standard. Mr. **Haley** has been

Circle 245 on Reader Service Card >

a member of the marine gear standard committee since the inception of that group and has served as chairman for the last seven years.

Mr. **Haley** has been directly involved in the marine propulsion gear industry in the U.S. for 27 consecutive years. During that time, he has been responsible for numerous special gear designs and innovative developments to improve propulsion gears and clutches, used on American waterways vessels.

## McKinstry Rejoins IMO As Manager, Sales/Marketing Of Commercial Products

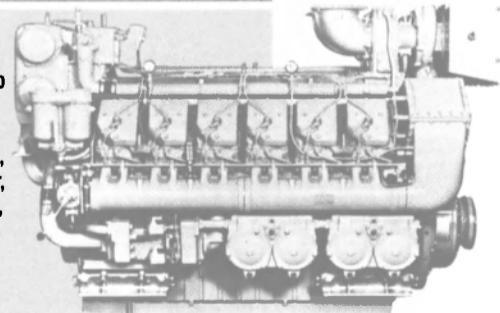
**David G. McKinstry** has rejoined IMO Delaval Inc. as manager of commercial products sales and marketing for the IMO Pump Division, it was recently announced by **J. Kenneth Lippincott**, vice president and general manager of the

division.

In his new position, Mr. **McKinstry** will be responsible for sales and marketing of the division's families of positive displacement pumps, with the exception of its government business. Included are its IMO (three-screw pump), GTS (geared twin-screw) and CIG (crescent internal gear) pumps. Mr. **McKinstry** had previously been with a new diverted division of the company.



We are proud to have supplied the power packages to these fine vessels built by Nichols Brothers and Gladding-Hearn: Catamarin, Dolphin, Executive Explorer, Glacier Express, Gold Rush, Washington Express, Mackinac Express, Island Express, and Vinyard Spray



Shipyards:  
Gladding-Hearn: (508) 676-8596  
Fax: (508) 672-1873  
Nichols Brothers: (206) 321-5500



## MORE FAST CATS USE THEM BECAUSE THEY'RE BETTER. THEY'RE BETTER BECAUSE MORE FAST CATS USE THEM.

Ever since Gladding-Hearn and Nichols Brothers launched their first catamaran ferries, our high-speed DEUTZ MWM diesel engines have offered leading solutions to power/weight challenges in North America.

Following hot on the keels of our other high-speed catamaran successes around the world.

With our close involvement in this ultra-new generation of commuter and cruise cats, we have developed, refined, and adapted our engine models to meet growing challenges.

So that the more engines we sell, the better they become.

We've developed the new 604B series. It's easier to service, and it has crankcase ports that let you get into the cylinders without hoisting the engine.

Now all you hear are the big cats purring contentedly. With good vibrations. Or even no vibrations.

The next time you need a world-class, lightweight, fast, quiet engine backed by the most dedicated parts and service operation anywhere, why not give DEUTZ MWM a call?

We'll be glad to let the cat out of the bag with a lot more reasons on how DEUTZ MWM can match your power requirements.

Because even if you're building something other than a cat, there's no reason why your ship shouldn't purr like one.

The DEUTZ MWM 604B series - lighter, faster, quieter, more powerful. Fuel-efficient and easy to service!

# DEUTZ MWM

DEUTZ MWM  
More  
power  
to North  
America.

For the DEUTZ MWM sales/service team nearest you, contact:  
DEUTZ Corporation 7585 Ponce de Leon Circle, Doraville, Ga. 30340 (404) 449-6140 Telex: 0070-7478  
KHD Canada Inc. 4420 Garand St., Ville St. Laurent, QC Canada H4R 2A3  
Telephone: (514) 335-3150 Fax: (514) 332-4173 Telex: 05-824927

DEUTZ MWM IS REPRESENTED IN ALL 50 STATES AND 10 PROVINCES



# 1989 NAPVO ANNUAL CONVENTION

San Diego, California, January 7-11

The 17th annual convention of the National Association of Passenger Vessel Owners (NAPVO) will be held in San Diego, Calif., at the Catamaran Hotel from January 7-11, 1989. More than 200 NAPVO members, owners and operators of the nation's finest passenger vessels, dinner cruise boats and car ferries are expected to attend this year's convention.

One of the opening day events on Saturday, January 7, will be an ice breaker reception sponsored by boatbuilder Service Marine Industries, Ltd., of Morgan City, La. The reception, which will provide attendees with San Diego tour information, will be hosted by NAPVO board president **Alan Bernstein**.

**Mr. Bernstein**, owner of BB Riverboats, an excursion boat company located in Cincinnati, Ohio, was elected NAPVO board president at last year's annual convention, which was held in Washington, D.C., January 10-14. He succeeded **James Cross**, owner and operator of Island Queen Excursions, Inc., Riviera Beach, Fla.

The morning plenary session on Sunday, January 8, at 10 a.m. to noon, will feature special guest speaker **Phil Wexler**. **Mr. Wexler** is an expert on sales and marketing techniques, and the author of the book, "Non Manipulative Selling." He will present "Marketing is a Philosophy—Not a Department." Additionally, he will hold a workshop called "How to Influence People Positively" at 1:30 p.m. Attendees will receive a special workbook for the session along with a copy of **Mr. Wexler's** book.

Last year's annual conference attracted about 280 registrants and some 40 exhibitors.

One of the highlights of the convention will be a presentation by Rear Adm. **Joel Sipes**, Chief, Office of Marine Safety, Security and Environmental Protection, on "U.S. Coast Guard Marine Safety Office—What's New."

Other plenary sessions will cover such important topics as Subchapter T-Boat Regulations, bareboat charters, and manning changes.

One dozen workshops will cover such topics as financing, marketing, safety and food service.

In addition, about 50 exhibitors will display their products and services.

On Sunday, January 8, at 8:30 a.m., *Travel Agent Magazine* will sponsor the "Captain's Welcoming Breakfast," a traditional NAPVO event, whereby attendees and new members are introduced to each other.

On the evening of January 8, convention attendees will be bused to the docks of a U.S. Naval aircraft carrier for a special guided tour. From there, attendees will be bused to the location of two of San Diego's preeminent dinner cruise operations—San Diego Harbor Excursions and Invader Cruises. After a brief tour of the operators' vessels, attendees will enjoy a dinner cruise aboard either the Invader Cruises-operated Showboat or the Monterey, operated by San Diego Harbor Cruises.

On Monday, January 9, at noon, convention participants will board the excursion boat William D. Evans for a one and one half hour luncheon tour of Mission Bay.

On Tuesday, January 10, at 7 p.m., St. Louis insurance firm Marsh and McLennan will sponsor a banquet and dance. Several special awards will be presented, along with remarks from the outgoing and incoming NAPVO officers.

NAPVO is the largest independent trade association for the owners/operators of dinner ships, sightseeing/excursion boats, car ferries, windjammers and paddlewheelers in the U.S. Over 330 separate members operate within 40 states, including some of the country's largest metropolitan areas. An estimated 30 million vacationers, business executives, conventioners, restaurant goers and others, make use of NAPVO affiliated vessels throughout the year.

Some of the key benefits of NAPVO membership include qualification for discounted insurance programs, receipt of the organization's monthly newsletter, and an invitation to the annual convention.

As the organization's membership increases, so does its impact on legislation that affects the passenger vessel industry.

For those interested in joining NAPVO, or learning more about its activities, contact: **Eric Scharf**, executive director, NAPVO National Headquarters, 1511 K Street, N.W., Suite 314, Washington, D.C. 20005; telephone: (202) 638-5310.

**Mr. Lauridsen**, most recently Deputy Chief of the Office of Marine Safety, Security and Environmental Protection at the Coast Guard, will assist NAPVO on a part-time basis by monitoring federal marine technical developments and working with the association to present its positions to the appropriate federal agencies.

NAPVO ANNUAL CONVENTION SCHEDULE	
<b>Saturday, January 7</b>	
9 a.m.-3 p.m.—Board of Directors Meeting	1:30-3 p.m.—Workshops
9 a.m.-noon—Exhibit Set-up	•3-A "Making Safety Pay: Hints from the Insurance Industry"
3-7 p.m.—General Registration/Exhibits	•3-B "How to Finance a New Boat Operation"
4-5 p.m.—New Member Orientation	•3-C "Buffet versus Served Meals: Pros and Cons"
5:30-7 p.m.—Ice Breaker Reception	3-4 p.m.—Regional Meetings
	4-5 p.m.—Visit Exhibit Area
<b>Sunday, January 8</b>	
8 a.m.-4 p.m.—Registration	
9 a.m.-5 p.m.—Exhibitor Trade Show	
8:30-9:45 a.m.—Breakfast (Introduction of New Members)	
10 a.m.-noon—Plenary Session, "Marketing is a Philosophy—Not a Department," by <b>Phil Wexler</b> .	
Noon-1:30 p.m.—Lunch/Visit Exhibits	
Noon-1:30 p.m.—Spouses' Luncheon	
1:30-3 p.m.—Workshops	
•1-A "Implementation of Drug Testing Programs"	
•1-B "Preparing Food in Limited Spaces: Methods and Techniques"	
1:30-4 p.m.	
•1-C "How to Influence People Positively"	
3-4 p.m.—Visit Exhibits	
4-5 p.m.—Business Meeting	
5:30-11 p.m.—Downtown Boat Event	
<b>Monday, January 9</b>	
7:30-9 a.m.—Past President's Breakfast	
8 a.m.-4 p.m.—Registration	
9 a.m.-5 p.m.—Exhibitor Trade Show	
9-10:30 a.m.—Plenary Session, "U.S. Coast Guard Marine Safety Office: What's New," Rear Adm. <b>Joel Sipes</b> , Chief, Office of Marine Safety, Security and Environmental Protection.	
9:30 a.m.-2:30 p.m.—Spouse Tour to La Jolla (extra charge)	
10:45 a.m.-noon—Workshops	
•2-A "Marketing in a Changing Economy"	
•2-B "What's New in the Ferryboat Industry"	
•2-C "The Joys and Headaches of Hosting World Events in Your Community"	
10:45 a.m.-noon—Associate Members Meeting	
Noon-1:30 p.m.—Lunch on the W.D. Evans	
<b>Tuesday, January 10</b>	
7:30-9 a.m.—Regional Chairs Breakfast	
8 a.m.-4 p.m.—Registration	
9 a.m.-1:30 p.m.—Exhibit Area Open	
9-10:30 a.m.—Plenary Session, "NAPVO Public Policy Report"	
■Subchapter-T Revisions	
■Manning Changes	
■Presentation of Safety Training Program	
10:30-10:45 a.m.—Break	
10:45 a.m.-noon—Workshops	
•4-A "Effective Public Relations Techniques for the Small Boat Operator"	
•4-B "What's Up in Washington: Legislation and Regulatory Changes You Should Know About"	
•4-C "Gift Shops, Photo Sales Programs and Other Extra Revenue Opportunities"	
Noon-1:30 p.m.—Lunch Break	
1:30-3 p.m.—New Ideas Roundtable	
•5-A "Food and Beverage Service Ideas"	
•5-B "Sales and Marketing Ideas"	
•5-C "Personnel Management Ideas"	
3-3:15 p.m.—Break	
3:15-5 p.m.—Business Meeting	
7-10 p.m.—Closing Banquet and Awards Presentation	
<b>Wednesday, January 11</b>	
9 a.m.-noon—Board Meeting and Breakfast	
9 a.m.-3 p.m.—Optional Tour Events (extra charge)	
7-10 p.m.—Optional Beach Cookout (extra charge)	

Schedule subject to change

## NAPVO Convention Exhibitors

Company	Booth	Exhibitors	
		Gulf Craft	121
		Hueneme Boat Works	4
Arthur J. Gallagher & Co.	124	Judson Marine	1
Association Buyers Group	102	Leevac Shipyards	127
Blount Marine	101	Loomis & La Pann	8
Caterpillar	122	Marsh & McLennan	118
Cummins Engine	13	Service Marine	112-113
Cummins Financial	14	SkipperLiner Shipyards	119
Custom Ship Int'l/ Directions in Design	117	Swath Ocean Systems	104
DeJong & Lebet	107	Trinity Marine Group	128
Eckland & Associates	105	Ultra Poly	115
Flextell Systems	2	Viking Life-Saving Equipment	106
Freepoint Shipbuilding	123	Weisman Novelty	3
		Western Shirt Line	116

## NAPVO Appoints Lauridsen Technical Consultant

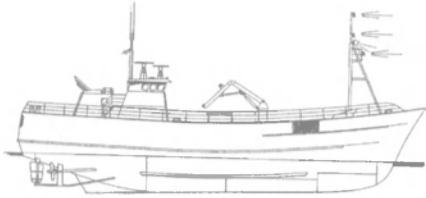
**Alan Bernstein**, president of the National Association of Passenger Vessel Owners (NAPVO), has announced the appointment of recently retired USCG Capt. **Peter Lauridsen** as the association's new technical consultant.

**Mr. Lauridsen** is a graduate of the U.S. Coast Guard Academy, with a degree in engineering. He had a 29-year career with the service, primarily in the marine safety area, serving both in Washington, D.C., and the field.

NAPVO is the national trade association for the operators of dinner cruises, paddlewheelers, car and

passenger ferries, sightseeing/excursion boats and windjammers. Representing over 400 companies who are part of the passenger vessel industry, NAPVO conducts an active government relations program, publishes a monthly newsletter, sponsors an annual convention and trade show and provides other special services to its membership.

## Atlantic Marine To Build Caterpillar-Powered Longliner Processor



Profile of the 123- by 32-foot longliner processor Aleutian Chalice. The Caterpillar-powered vessel will be used for fishing in the Bering Sea.

Atlantic Marine, Inc. of Jacksonville, Fla., recently signed a contract with Chalice Trawlers Corporation of Edmonds, Wash., to build the Aleutian Chalice, a 123-foot by 32-foot longliner processor. The vessel was designed by Rodney E. Lay & Associates of Jacksonville.

The longliner will be powered by two Caterpillar 3408 main engines with Twin Disc MG516 reduction gears and two 185-kw 3306 Caterpillar generators supplied by N.C. Marine of Seattle. Sabroe Refrigeration will furnish the refrigeration equipment, and the longline fishing equipment will be supplied by Marco. The electronic package will be furnished by Harris Electronics, also of Seattle. Marine Laboratories of Ervine, Calif., will supply the two 500-gpd water makers.

The Aleutian Chalice will be delivered in late summer of 1989 and will be joined by her sister ship Silver Chalice for fishing in the Bering Sea. The Silver Chalice was also built by Atlantic Marine.

Located at the intersection of the St. Johns River and Intracoastal Waterways in Jacksonville, Fla., Atlantic Marine, Inc. constructs steel-hulled vessels, including fishing vessels, research vessels, ferry boats, tugs, barges and specialized vessels for offshore and river use.

For free literature giving details on the facilities and capabilities of Atlantic Marine,

Circle 61 on Reader Service Card

## Wartsila-Turku Delivers Barge Carrier To USSR

Wartsila Marine Industries' Turku Shipyard, known primarily as a builder of passenger vessels and luxury cruisers, recently completed a barge carrier, a rare exception in the yard's present stock of orders. The vessel, ordered by the USSR Ministry of Communications, was named Anadyr.

The 742-foot-long by 89.5-foot wide Anadyr is suitable for the transport of barges and rolling and wheeled cargoes as well as container cargoes. The cargo can be unloaded either by deck cranes, barges, through the aft ramp or by helicopters. The loading and discharging of the barges into and out of the vessel can be done by submerging the vessel to the draught required, so that the barges can be floated into or out of the cargo space.

The helidrome of the vessel has been designed for two helicopters, and it is equipped with an air control tower.

The Anadyr, which carries a crew of 70, can achieve a speed of 20 knots.

For free literature giving complete details on the facilities and capabilities of Wartsila Marine-Turku Shipyard,

Circle 23 on Reader Service Card

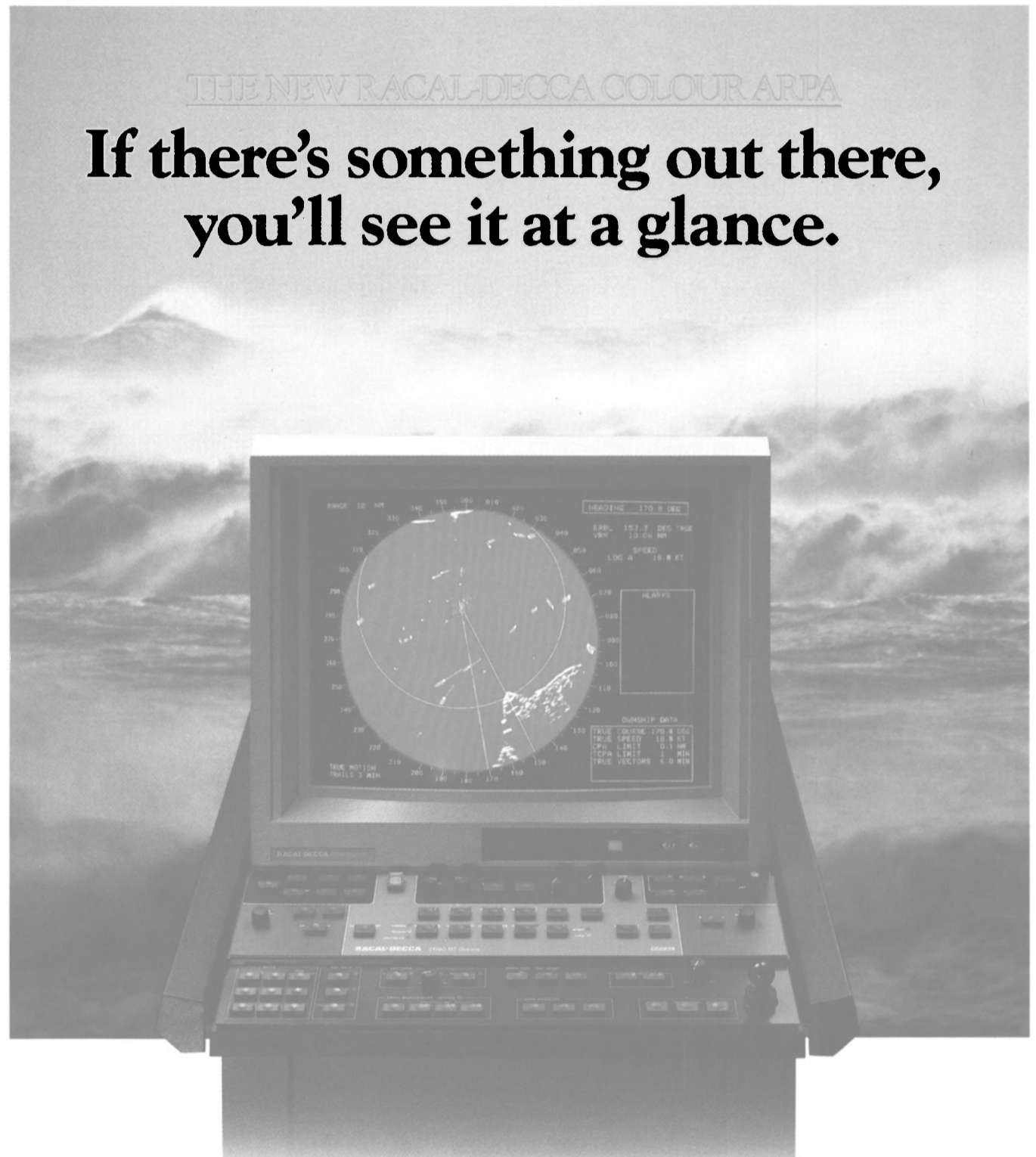
## MHI Delivers 80,000-Ton Tanker To Amoco Ocean Tanker

Amoco Ocean Tanker Company recently took delivery of a new 80,000-ton tanker, the Ocean Navigator, from the Nagasaki, Japan, shipyard of Mitsubishi Heavy Industries, Ltd. (MHI).

The Ocean Navigator was designed and built to carry 600,000 barrels of crude oil, and will sail routes primarily from Latin America and the Caribbean to the U.S.

The new ship is part of an ongoing Amoco oceangoing tanker fleet modernization program.

Amoco Ocean Tanker Company is the subsidiary of Amoco Corporation responsible for ocean transportation worldwide.



Whatever the weather and clutter conditions, Racal's award-winning colour technology gives you all the information you need. At a glance.

The world's first type-approved colour ARPA, the new 2690 BT provides

a clear, bright daylight display, and is exceptionally easy to use.

Just what you'd expect from Racal Marine — world leaders in marine radar technology.

For the full picture, contact us today.

# Racal Marine Electronics

# RACAL

Racal Marine Inc, 70 Jackson Drive, Second Floor, Cranford, NJ 07016, USA.  
Tel: (201) 272-4222 Telex: 139031 Fax: (201) 272-4805

Racal Marine Electronics Limited, 247 Burlington Road, New Malden,  
Surrey KT3 4NF England. Tel: 01-942 7833 Fax: 01-949 1273 Telex: 22852

Circle 26 on Reader Service Card

## A LETTER FROM THE PRESIDENT OF THE NATIONAL ASSOCIATION OF PASSENGER VESSEL OWNERS

By Alan Bernstein, Owner,  
B.B. Riverboats, Cincinnati, Ohio

Public policy was the focus of the National Association of Passenger Vessel Owners' (NAPVO) activities in 1988. Led by a newly appointed Public Policy Committee, the association addressed several important issues relating to marine transportation.

•In anticipation of the Subchapter T regulatory revisions, we met with the U.S. Coast Guard to devise industry courses. It is expected that the new regulations will call for a stricter standard of construction and manning for the larger vessels, but a relaxation of the rules concerning material of construction.

•Responding to Coast Guard concerns about manning requirements on Subchapter T vessels, the association founded a Safety and Training Committee to develop training standards for the industry. Our position is that the key to the solution is the quality of the manning and not the quantity.

•The Coast Guard's proposed drug testing regulations sparked major concern among association members this past year. NAPVO members were the only industry group to successfully lobby for relief on the regulations. A provision that would have required random drug testing of non-safety-related crew was struck from the rules.

•NAPVO continued to urge the Coast Guard to crackdown on illegal bareboat charter operators throughout the nation. Our members seek to operate under a consistent set of equitable rules. The presence of illegal operators impede the process of fair trade. We commend the Coast Guard for the many positive steps they have taken in this area.

To assist NAPVO in their efforts, we employed a technical advisor, retired Coast Guard Capt. **Peter Lauridsen**. Most recently Deputy Chief of the Coast Guard Office of Marine Safety, Captain **Lauridsen** brings to us a wealth of experience and knowledge in how to work effectively on marine issues.

As NAPVO moves into 1989, I see us faced with continued issues in regulatory development.

Subchapter T, manning, drug enforcement and other issues will remain with us. User fees for Coast Guard services are expected to resurface this year. Further, we anticipate more attempts to change employment relations by trying to increase minimum wage, forcing mandated health insurance, and regular child care.

Our membership has continued to grow. It is only through our collective efforts that NAPVO will continue to remain in the vanguard of efforts to protect the small passenger industry from having to operate in an uncompetitive regulatory environment.

### National Marine Acquires Southern Marine Services

National Marine, Inc., the New Orleans-based barge and towing company, recently announced their acquisition of Southern Marine Services, Inc., a towing and fleet service located on Blakely Island in Mobile, Ala., which will now operate as National Marine, Inc., Mobile Fleet.

Southern Marine Service, Inc. was formed in 1973 as part of Ryan-Walsh Stevedoring Company, Inc. to provide towing and fleet services in the Mobile port area. Southern Marine's fleet includes several towboats servicing Mobile harbor as well as the Eastern Gulf Intracoastal Canal.

Heading up National Marine's Mobile Fleet will be **Charles McDonnell**, fleet manager; **Rick Simms**, barge maintenance engineer; **Lucian Lott**, traffic coordinator; and **Connie Clayton**, office manager. All are former Southern Marine employees.

## Hornblower Dining Yachts Contracts Trinity Marine Group To Build West Coast's Largest Diner Boat

The Trinity Marine Group has been awarded a contract to build a 183-foot diner boat for Hornblower Dining Yachts of California. The new flagship of the Hornblower fleet, largest of its type on the West Coast, will operate out of the Los Angeles Harbor beginning in the spring of 1989.

While new in every aspect, the California Hornblower will have a nostalgic "look," as she is patterned after turn-of-the-century steam-powered vessels. The new vessel will feature three air-conditioned decks, each with a dual service mahogany bar. The top deck, called the Captain's Lounge, will be tailored for business meetings of up to 250 people.

Amenities will include an elegant foyer on the main deck, large panoramic windows, brass, teak, and mahogany appointments, hardwood dance floors, and plush carpeting.

The boat will be available for private group charters and individually ticketed cruises open to the public.

The California Hornblower will be 183 feet 3 inches in length, with a 40.5-foot beam (molded), and 11-foot molded depth with an approximate 7-foot draft.

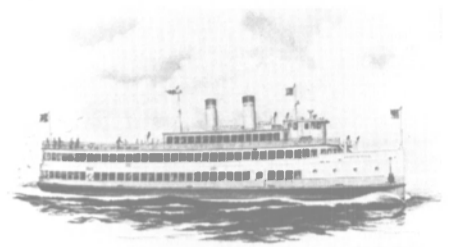
She will be powered by two Cummins KT19M marine engines with a continuous rating of 510 bhp each at 2,100 rpm. They will drive through Twin Disc MG-518 reverse/reduction gears with a ratio of 4.06:1.

The California Hornblower will be built under U.S. Coast Guard subchapter "T" rules and regulations and will meet American Bureau of Shipping (ABS) standards.

The California Hornblower is now under construction at Trinity's Moss Point Marine, Inc., in Escatawpa, Miss.

**John Dane III**, president of the Trinity Marine Group, said the selection of Moss Point Marine to build the California Hornblower reflects the Group's experience in building a wide range of dinner/cruise and excursion vessels for use on both coasts and on the nation's inland waterways.

The Trinity Marine Group is owned by Trinity Industries, Inc., Dallas, Texas. In addition to Moss



Artist's conception of the Cummins-powered California Hornblower, Trinity Marine Group's new diner boat.

Point Marine, Inc., it includes Halter Marine, Inc., with shipyards in Lockport, La., and Moss Point, Miss.; Equitable Shipyards, Inc., with facilities in New Orleans and Madisonville, La.; Gretna Machine and Iron Works, Inc. in Harvey, La.; and Aluminum Boats, Inc. in Crown Point, La.

For more information and free literature on the facilities and capabilities of the Trinity Marine Group,

Circle 51 on Reader Service Card

### Seaward Offers 105-Page Technical Manual On Marine Fendering Systems

Seaward International, Inc. has recently released a revised 105-page Technical Manual for their Sea Cushion® line of foam-filled marine fender systems.

The availability of this technical data now provides naval architects, engineering firms, and end users with the information needed to select quality engineered Seaward fender systems for vessel-to-dock and vessel-to-vessel applications worldwide.

The Sea Cushion Technical Manual covers all aspects of fendering, including construction features, fender performance, physical characteristics, and total system design. Also included are application tables and installation examples that will provide the user with a clear understanding of Seaward's foam fendering systems and their advantages.

The manual is filled with valuable and useful data including photos of different applications, layout of different applications, mechanical drawings, specification tables, energy absorption data, recommendations for particular applications, etc.

This manual complements the Technical Manual already released for the Sea Guard netless fender systems used worldwide by the U.S. Navy and the international maritime community. Other products available from Seaward International include marine buoys and floats, Donut fender systems, and special urethane marine coatings.

For further information and a free copy of the "Fendering Technical Manual From Seaward International,"

Circle 30 on Reader Service Card

The success continues! Now more than 400

# Stal-Mini

Screw Compressors in operation for marine refrigeration

**STAL**  
MARINE

STAL Refrigeration AB  
S-601 87 NORRKÖPING  
Sweden

Telephone Int +46 11 21 40 00  
Telefax +46 11 16 19 04  
Telex 64110 FROSTAL S

Circle 208 on Reader Service Card

## POTENTIAL FOR SIGNIFICANT GROWTH FORESEEN IN EXPANDING CRUISE SHIPPING INDUSTRY

By James G. Godsman, President\*  
Cruise Lines International Association

*\*Editor's Note: A veteran of more than 25 years' experience in sales, marketing and general management in both the consumer packaged goods and transportation industries, Mr. Godsman has been president of CLIA since October 1985. He has been instrumental in increasing the visibility of both CLIA and the cruise product.*

The cruise industry is one of the fastest growing sectors of the travel industry. Since 1970, when an estimated 500,000 people took cruises, cruise passenger travel has increased 600 percent, with more than 3 million people taking a cruise in 1987.

This growth has led to the cruise industry contributing over \$1.2 billion annually to the U.S. economy in direct purchase of goods and services.

In addition, the North American cruise industry's growth is also reflected in the significant increase in capacity and passenger berths, with about 35-40 new ships having been built or planned during this decade. Estimates project that cruise lines will spend more than \$3 billion on shipbuilding before 1990.

The New York-headquartered Cruise Lines International Association (CLIA), a marketing-promotional trade organization comprised of 35 of the major cruise lines serving North America, believes that the 1980s "will go down in history as the most prolific in a generation—and perhaps of this century—for new passenger ship introductions."

In 1988, 10 new cruise ships with a total of more than 8,000 berths will have been launched. This year should see at least a half dozen new launchings with an additional 7,600 berths.

CLIA reports that 1988 should see a 1 percent increase in passenger totals from 3 million in 1987 to 3.5 million in 1988. The association estimates that passenger travel has been growing at a rate of 11 to 14 percent per year throughout the 1980s.

Although there has been a significant increase in cruise passenger travel during 1980s, recent research indicates that there is still substantial room for growth. The research indicates that because of lingering misconceptions about the cost of cruise travel and old travel habits, potential consumers still might be wary of taking their first cruise.

While roughly 5 percent of the population has taken a cruise, CLIA has targeted its promotional efforts at the enormous body of potential first-time cruisers.

According to a study conducted by the research firm Market Scope Inc. for CLIA, almost 75 percent of the 35 million people identified as "cruise prospects" are favorably disposed toward taking a cruise vacation but simply have not gotten around to it.



James G. Godsman

The research indicates that only one of eight has a specific concern or "hasn't considered a cruise vacation seriously enough to take a position."

Over 50 percent of the prospects rated a cruise vacation higher than other vacations because of its particular advantages.

For example, prospects cited such benefits of cruise travel as pampering, service, convenience (no continuous packing/unpacking), quality food, rest and relaxation, casino gambling and exciting nightlife.

The Market Scope study showed that the cruise industry has done an excellent job of promoting most of the primary benefits of cruise vacationing and has certainly overcome the traditional barriers to trying a cruise vacation.

This has been accomplished by such means as heavy advertising, public relations, direct marketing and the support of CLIA. But there are still several areas that need further emphasis.

According to research, the major obstacles to attracting the first-time cruiser are the (1) misconception that cruise vacations are too expensive and (2) vacation inertia.

The study showed that slightly more than 60 percent of cruise prospects believe that a seven-day cruise costs over \$1,500 per person, and about 20 percent believe that it costs more than \$2,500 per person.

The average price for a seven-day cruise, including airfare, is less than \$1,300, although it can range from as low as \$945 to as high as \$18,770. The important factor is that the price includes all meals, entertainment, a wide choice of activities and free or sharply reduced airfare. When one takes all these into account, it demonstrates the great value of a cruise vacation.

Obviously, cruise lines need to communicate this value more effectively to draw more clients.

As for the problem of inertia—the reluctance to try a cruise vacation—

the cruise industry should be heeded by the law of physics.

Once inertia is overcome, a body in motion tends to remain in motion. Similarly, once a person tries a cruise vacation, he or she tends to take another one.

The study disclosed that those most likely to take a cruise are slightly more affluent (a median income of \$45,000) and younger (a mean of 36.9 years) than other groups. About 45 percent are single, and 16 percent are single parents.

In fact, according to a company that specializes in travel for singles, the number of singles who have taken a cruise has steadily increased an

average of 10 percent each year over the past several years. And a survey commissioned by CLIA reveals that the number of singles who are interested in cruise vacations has almost doubled since 1986.

Most cruise lines offer fares tailored for singles who travel by themselves or with friends. Some cruise lines also offer special plans for single parents.

Aggressive marketing efforts will bring some 10 million first-time cruisers into the marketplace by 1993, and with the heavy traditional repeat factor for cruises, this indicates a bright future for the cruise shipping industry.

## Now.... Made in the USA



ATLANTIC MARINE AND MARINTEKNIK NOW OFFER  
THE VERSATILE ATLANTIC MARINJET RANGE OF  
CATAMARANS PROVIDING UNEQUALED SPEED  
AND RELIABILITY.

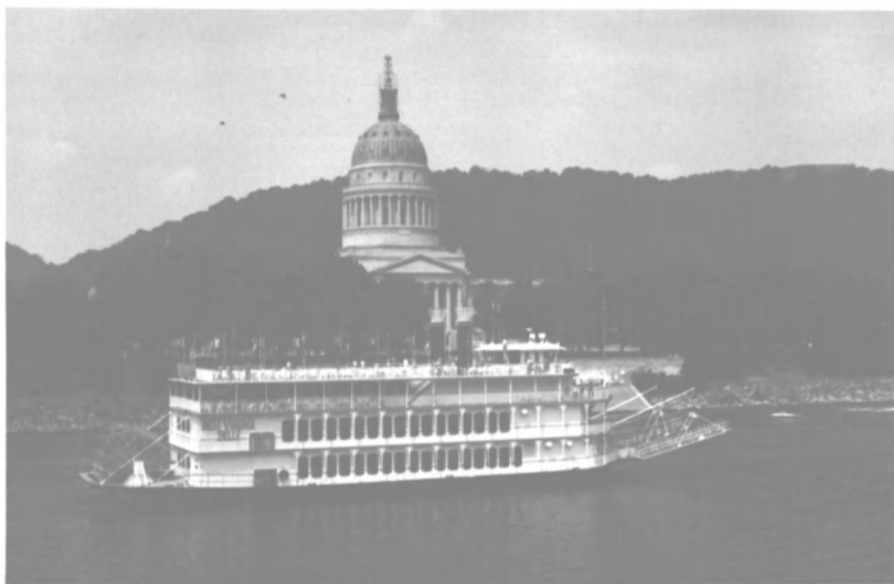
  
**Atlantic Marine**

  
**Marinteknik**

**Atlantic Marine, Inc.**

8500 Heckscher Drive, Jacksonville, Florida 32226  
(904) 251-3111 Telex: 756894 AMI B JAX  
Fax: (904) 251-3500

Circle 120 on Reader Service Card



## OUTSTANDING PASSENGER VESSELS OF 1988

### ALEXANDRIA BELLE Blount Marine

In 1988, busy passenger boat builder Blount Marine Corporation of Warren, R.I., delivered the 87-foot replica steam paddlewheeler Alexandria Belle to Uncle Sam Tours of Alexandria Bay, N.Y.

The third vessel to have been built by Blount for the Combined 1000 Island Boat Tours' Uncle Sam Tours, the Alexandria Belle is powered by a pair of Detroit Diesel 8V71 diesel engines to speeds of about 10 knots. The 87-foot day/dinner excursion boat has a beam of 32 feet 2 inches, depth of 8 feet and loaded draft of 4 feet 8 inches. Cruising the St. Lawrence Seaway, the replica Mississippi steam paddlewheeler Alexandria Belle offers her passengers panoramic views of the islands of the popular Thousand Islands region of Upstate New York.

The 400-passenger excursion boat has dining facilities on her main and upper deck and outside seating on her bridge deck. Manned by a crew of up to 25, the Alexandria Belle has

a potable water capacity of 515 gallons and a fuel capacity of 1,122 gallons. Her special features include a non-propulsive stern wheel and rotating lift/lower bow ramp for easy passenger boarding/disembarking operations.

She offers a variety of live entertainment on her three-hour cruises, including dinner and comedy cruises.

#### ALEXANDRIA BELLE Equipment List

Main engines (2)	Detroit Diesel
Reduction gears	Capitol
Engine controls	Morse
Generators (2)	Lister/Petter
Generator control panel	Murphy
Steering system	Wagner
Bilge pump	JABSCO
Fire pump	Gorman-Rupp
Radar	Furuno
VHF radiotelephone	Raytheon
Engine monitors	Murphy
Horn	Kahlenberg
Searchlight	Ray-Line

### AMORELLA Brodosplit

In 1988, Yugoslavian shipbuilder Brodosplit delivered the 37,500-gt Amorella, the first of two new gener-

ation Baltic cruise ferries, to owners SF Line for operation by Viking Line on the Turku-Mariehamn-Stockholm service route.

The 2,200-passenger-capacity ferry, which also can accommodate 620 cars/53 trucks, has an overall length of 555-1/2 feet, breadth of 90-1/2 feet, depth of 28 feet and draft of 19-1/2 feet. With a deadweight of 2,800 metric tons, the Amorella is powered by four SEMT Pielstick-Jadranbrod 12PC2-6V/400E diesel engines rated at 7,965 hp each. The 12-deck vessel, which has 565 passenger cabins, can reach speeds in excess of 21 knots.

### BAY LADY Service Marine

In the first quarter of 1988, Morgan City, La.-based boatbuilder Service Marine Industries delivered the elegant 600-passenger cruise boat Bay Lady to operator Baltimore Harbor Bay Tours, Ltd., Baltimore, Md., for dinner cruise/excursion service on the Chesapeake Bay.

The sleek 140-foot-long vessel has a yacht-like hull shape and is designed for luxury harbor cruising. Her interior features fine appoint-

The order for the Amorella and her sister ship, which is expected to be delivered in the spring of next year, represented an important breakthrough into the passenger ferry building sector for Brodosplit and the Yugoslavian shipbuilding industry.

One outstanding feature of the Amorella is that 90 percent of her passengers will have berths, whereas current generation Baltic ferries on the route provide only about 60 percent of the passengers with berths.

The outfitting of the Amorella's public spaces was subcontracted to Danish company Aalborg Vaerft.

ments throughout, including custom bars with back lighting, polished brass fixtures and teakwood accents. A sophisticated atmosphere is created by the use of mirrors and an excellent sound system. Passengers are kept comfortable by 60 tons of Carrier air conditioning, and outside glare is reduced by the use of tinted glass.

The Bay Lady, a sub-chapter T vessel, is powered by a pair of Cummins 300-hp NT-855 diesel engines. The diesels, which were supplied by Cummins Mid-South, Morgan City, La., are fitted with Nelson exhaust silencers to reduce engine noise.

Photos (clockwise from top left): Nils Dacke; Eagle; Annabel Lee; and West Virginia Belle.



Auxiliary power is provided by two Cummins NT-855 engines, also supplied by Cummins Mid-South, driving 150-kw Newage Stamford generators. The generator sets are mounted on springs and the sound-proofed engine room is fully insulated to reduce noise levels.

The top deck of the three-deck Bay Lady can accommodate 275 passengers, while her lower deck can handle 320 persons. The upper deck is partially covered by a canopy for open air passenger comfort.

One of the most distinctive features of the Bay Lady is her large full-service galley. The complete 30-foot by 20-foot galley, which is fitted with four convection ovens, a walk-in cooler, a refrigerator, freezer, dishwasher, and electric range, is used to prepare all of the Bay Lady's meals onboard.

The Bay Lady will operate in the Baltimore Harbor area in the spring and summer months, and move south to the Key Biscayne, Fla., for the winter.

#### BAY LADY Equipment List

Main engines	Cummins
Generator engines	Cummins
Generators	Newage Stamford
A/C	Carrier
Radar	Furuno
VHF radios	Regency Polaris
Depth sounder	Si-Tex
Magnetic compass	Ritchie

#### CARIBE TIDE Equitable Shipyards

Last year, the New Orleans yard of Equitable Shipyards of the Trinity Marine Group delivered the 85-foot, 232-passenger, high-speed ferry Caribe Tide to Transportation Services of St. John, Inc., in the Virgin Islands.

The new ferry now carries passengers from cruise ships in Virgin Island harbors to points of interest. It also doubles as a sightseeing boat carrying visitors on interisland tours.

The all-aluminum Caribe Tide is 85 feet in length, with a 24-foot beam, and a 5.5-foot draft. She is

#### CARIBE TIDE Equipment List

Main engines(4)	Cummins
Reverse reduction gears(4)	Twin Disc
Generators(2)	Cummins
Propeller shafts(4)	Aquamet
Propellers(4)	Nibral
Rudder stocks	Aquamet
Fuel filters	Racor
Tachometer	Murphy
Steering system	Hydreco
Engine controls	Morse
Engine alarm system	Murphy
Bilge & ballast pumps	Jabsco
Fuel water separator	Halter
Pressure set	Fairbanks Morse
Air conditioning	Rheem
Navigational & search lights	Perko
Flood light	Hubbel
Loudhailer & PA system	Raytheon
VHF	Horizon
VHF antenna	Shakespeare
Radar	Furuno
Magnetic compass	Constellation
Rudder angle indicator	VDO
Life rafts	Switlik
Horn	Corsair

powered by four Cummins KT19M engines developing a total of 2,040 hp at 2,100 rpm through Twin Disc MG514 gears with a ratio of 2:1. The Caribe Tide can reach speeds of more than 21 knots.

Special attention to passenger comfort is provided by 10 tons of Rheem air conditioning which is sized 185 percent over total capacity for the warm climate and to compensate for open doors at loading and unloading.

#### CROWN ODYSSEY Meyer Werft

Built at a cost of \$178 million, the luxurious 1,221-passenger cruise ship Crown Odyssey was delivered last year by the Papenburg, West Germany, shipyard of Meyer Werft to Royal Cruise Line of Piraeus, Greece.

Intended for worldwide service,

the Greek-flagged 616-foot cruise ship has a molded breadth of 92-1/2 feet and draft on summer freeboard of 22.7 feet. She has 12 decks, and is able to carry 1,221 passengers in 526 cabins. Each of the 526 staterooms are fitted with individually controlled air conditioning through diffusers discreetly incorporated into the ceiling. The 40,000-grt Crown Odyssey also has 199 crew cabins and a complement of 443.

Classed by Lloyd's Register of

# Diesel Power

## linking ports, coasts and continents by passenger ships and ferries



Passenger ships and ferries are connected with ports, coasts and continents by timetables that are accurate down to the last minute. Under such circumstances the reliability of the propulsion plant takes on particular importance.

MAN B&W four-stroke Diesel engines have been proving their reliability either as straightforward Diesel propulsion or Diesel-electric propulsion plant on board famous cruise liners and ferries. With its comprehensive engine

programme and the lowest heavy fuel consumption rate ever reached, MAN B&W is able to supply the ideal propulsion concept for every ship.

#### Worldwide Service

MAN B&W Diesel, Stadtbachstr. 1, D-8900 Augsburg, Telephone (-821) 32 21  
MAN B&W Diesel, 50 Broadway, New York, NY 10004, Telephone (212) 269-09 80  
Circle 267 on Reader Service Card



Shipping, the Crown Odyssey is powered by an innovative "father and son" four-engine plant consisting of two Krupp MaK 8M601 "father" engines with an output of 10,880 hp at 400 rpm each and two Krupp MaK 6M35 "son" engines, each developing 3,604 hp at 720 rpm. The plant produces a total of about 29,000 hp and a service speed of about 22 knots. The engine output is being transmitted via double reduction Renk gears with inte-

grated lamella couplings to a KaMe-Wa controllable pitch propeller system. The main and auxiliary engines are designed to operate on heavy fuel oil IFO 600.

Electrical power is provided by four Krupp MaK diesel generating sets with a total generator capacity of 12,500 kva as well as one emergency generator with a capacity of 760 kva.

Two semi-spade rudders directly fitted behind the controllable pitch

propeller and two bowthrusters ensure good maneuverability of the Crown Odyssey. Additionally, she is fitted with Ross Industrie stabilizers which reduce her roll motion by 90 percent at a speed of 17.5 knots.

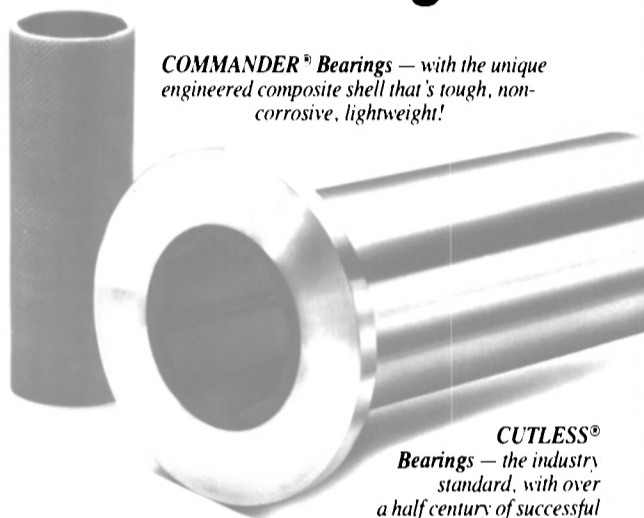
On board the Crown Odyssey there are a total of 11 public rooms including the "Seven Continents Restaurant" on deck 6 which seats 640 persons. The other public spaces are situated on the Odyssey,

#### CROWN ODYSSEY

##### Equipment List

Main engines	Krupp MaK
Auxiliary engines	Krupp MaK
CP propeller	KaMeWa
Gears	Renk
Stabilizer	Ross
Stern tube bush and compact sealing	Ross
A.C. asynchronous motor	AEG
Radar	Krupp Atlas Elektronik
Radio equipment, hand radios, & facsimile receiver	Hagenuk
Automation system	Valmet Automation
Engine room console, switch gear & emergency lighting	Janssen
Monitoring & engine room control video systems	Siemens AG
Radio & TV system	Diskowski
A/C and ventilation systems	Rudolph Otto Meyer
Cooling plant	Brown Boveri-York
Loudspeaker, PA system, lighting & theater translating systems	Funa Nachrichtentecnik
Lamps, ceilings, panels & light fixtures	Dampa
Sewage treatment	Hamworthy
Couplings	Vulkan
Separators	Alfa Laval
Fresh water generator, potable water station, evaporating plants & heat exchanger	Serck
Bilge and ballast pump	Iron
Firefighting system	Preussaug
Fire alarm system	EB Nachrichtentecnik
Gas cylinder central station	Unitor
Welding rectifier	Unitor
Davits	Schat-Davit
Lifeboats	Fassmer
Pallet elevator	Macor Marine
Doors	Saajos
Hydraulically operated watertight door system	Schoenrock Hydraulik
Sound/heat insulation & flooring	Kaefer Isoliertecnik
Elevators & dumbwaiter	Otis
Electric anchoring & mooring equipment	Rauma Repola
Galleys, pantries & counters	Navalmar

## The Name You Trust for Bearings

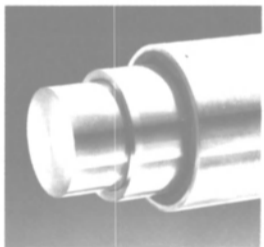


**COMMANDER® Bearings** — with the unique engineered composite shell that's tough, non-corrosive, lightweight!

**CUTLESS® Bearings** — the industry standard, with over a half century of successful installations and performance.

## is Your Source for Staves, Sleeves,

**Nickel-Chrome-Boron Shaft Sleeves** — super hard and smooth against abrasion and corrosion for extended shaft-assembly life.



**ROMOR® Bearing Staves** — special nonmetallic design for longer sleeve life, noncorrosive for easy removal.

## and Outstanding Value, for More Than 60 Years.

### LQMoffitt

A subsidiary of BFGoodrich  
P.O. Box 1415, Akron, Ohio 44309  
(216) 733-9955 FAX (216) 733-7126

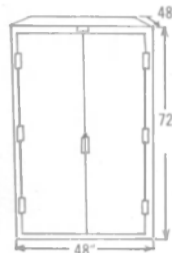
Registered trademark of BFGoodrich © 1988 LQMoffitt



Circle 276 on Reader Service Card

## ★FIBERGLASS PRODUCTS★ ★GANGWAYS★

**SURVIVAL SUIT STORAGE CABINET**  
Available with or without window. Optional shelves. Stainless steel hardware and hinges; gel coat interior and exterior. Watertight. Safety yellow, red, emerald green, gray, white, blue, orange.



24-HOUR DELIVERY ON MOST SIZES

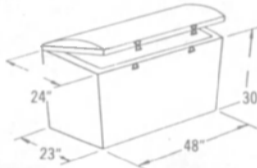
**STAGE GANGWAYS**  
\*8'-40', 750 lb. capacity  
\*Rope or aluminum handrails  
\*Anti-skid deck \*Specify width (standard 24" or 28")

**CURVED TREAD GANGWAYS** Safe climbing surface at any angle between ship and dock.

#### TRUSSED GANGWAYS

\*Available with ropes, rails or all aluminum construction \*Aluminum anti-skid deck surface \*All stainless steel bolted and welded for maximum safety and trouble-free service \*Lengths up to 60 ft. \*RENTALS AVAILABLE IN STOCK 10'-50'

**WE REPAIR GANGWAYS**—COMPLETE RESTORATION 50% OF ORIGINAL COST  
24-HOUR TURNAROUND ON MOST REPAIRS



**LIFEJACKET BOX**  
For LIFEJACKETS. Stainless steel continuous hinge. Chrome brass latches. Gel Coat exterior. Full inner interior. 60 lbs. Lid will support 250 lbs. Color orange standard.

## NATIONAL SPECIALTY PRODUCTS, INC.

P.O. Box 590188 Houston, Texas 77259  
713-488-3003 Fax: 713-643-9751

Circle 236 on Reader Service Card

## Man without toilet has no place to go

Pity, too ... with INCINOLET electric toilet so readily available and easily installed. INCINOLET incinerates waste to pure clean ash. Needs no water, of course, and INCINOLET is absolutely non-polluting. Heavy duty all stainless steel construction.

Call toll-free for information or free brochure:  
1-800-527-5551

### INCINOLET THAT ELECTRIC TOILET

RESEARCH PRODUCTS, Blankenship  
2639 Andjon • Dallas, Texas 75220 • (214) 358-4238

Circle 272 on Reader Service Card

Lido and Horizon decks (7th, 8th and 11th decks). The sophisticated air conditioning system in the public rooms regulates temperature and humidity automatically depending on the room's occupancy. The Monte Carlo Court, which is located on the Odyssey Deck, includes a casino, bar and several boutiques. Forward of this area there is the Odyssey Show Lounge with submersible stage and seating accommodation for 500 persons. Aft of the Court there is the Yacht Club, which has a 280-person capacity with an illuminated dance floor and an ample buffet.

The Crown Odyssey has a swimming pool on her 1st deck, as well as a fitness center, two saunas, two massage rooms, ample sun deck space and a beauty parlour. She also has two whirlpools located on the Penthouse Deck (10th deck).

#### NILS DACKE

##### Schichau Seebeckwerft

In 1988, the Bremerhaven yard of West German shipbuilder Schichau Seebeckwerft AG delivered the world's largest railway/freight ferry, the 581-foot all-around combi-carrier Nils Dacke, to Rederi AB Swed-carrier, the pool-partner of Hamburg-based TT-Line.

Classed by Germanischer Lloyd, +100 A4 E3 + MC E3 AUT "Pas-

senger Ship/Railway-/Trailer Ferry" "suitable for the carriage of dangerous goods," the Nils Dacke, with a molded breadth of 84-1/2 feet, draft of about 20 feet, tonnage of about 24,000 and deadweight of 7,800 tons, is powered by two main propulsion plants consisting of four MAN B&W main engines. Each main propulsion plant consists of a MAN B&W 6L40/45 diesel, with an output of 3,170 kw at 524 rpm, and a MAN B&W 8L40/45 diesel engine, with an output of 4,230 kw at 524 rpm. The total power for the two main propulsion plants (all four engines) is 14,800 kw. For maneuverability, the vessel is equipped with Lips variable pitch propellers and Frydenbo rudder plants. She has a service speed of about 18 knots.

The all-around combi-carrier has accommodations for 300 passengers in 121 cabins with 280 berths located in the forward third section of the ship. Each cabin is fitted with a private shower and toilet. The ship features a restaurant, lounge/bar, cinema and conference room. The crew complement of 40 is accommodated in single cabins.

The bulbous-bowed Nils Dacke, along with her sister ship, the Robin Hood, which is scheduled to be delivered shortly, are replacing the freight ferries Saga Star and Saga Wind. The new ferries will both provide much-needed additional capacity on the busy Travemunde (West Germany)-Trelleborg (Sweden) route.

The freight capacity of the Swedish-flagged Nils Dacke represents a 50 percent increase over the capacity of the Saga Star or Saga Wind. Her three decks are interconnected by internal ramps, and she load and discharge via a stern ramp.

The lower deck, or combi deck, is equipped with 910 meters of rail length distributed on six tracks, allowing for the transportation of 36 long-type railway wagons or 75 rail wagons of average size.

On the two upper decks, there is space for about 100 trucks/trailers.

When not in use for rail cargo, the lower deck can accommodate an additional 60 trucks/trailers.

### QUEEN ROKKO

#### Mitsui Engineering

Mitsui Engineering & Shipbuilding Company recently delivered the catamaran ferry Queen Rokko to Japanese shipowners Awaji Ferry Boat Company. The vessel, now in ferrying service, is about 108.9 feet long and 29.5 feet wide with a displacement of 217 tons. It is approved for coastal service and has carrying capacity of 250 passengers.



The Queen Rokko is powered by

two Deutz MWM 12-cylinder engines of the 604B series, which are designed to deliver a maximum power of 1,260 kw each at a speed of 1,800 rpm, bringing the catamaran to a maximum speed of 30 knots.

### ROYAL VIKING SUN Wartsila Marine

At the end of last year, the Turku shipyard of Wartsila Marine Indus-



## LEEVAC . . .

### Shipyard of the Passenger Vessel Pros

When it comes to passenger vessel operations, Captains Dennis Trone and Bill Howell practically wrote the book. Both have devoted their life to riverboats and when they needed new boats for their expanding operations, they came to LEEVAC Shipyards.

Capt. Howell is the owner of Padelford Packet Boat Company, St. Paul, Minn., and runs four excursion vessels on the upper Mississippi River. The newest addition to his fleet is the LEEVAC-built *Anson Northrup*, an authentic re-creation of a Victorian sidewheeler. The 400-passenger boat features two enclosed cabins with plenty of open area forward on both decks.

The passenger vessel operations run by Capt. Trone are quite different. He conducts two-day, round-trip cruises between LeClair, Iowa and Galena, Ill., using the steam-powered paddle-wheeler *Julia Belle Swain* and the *Twilight*, a delightful 150-passenger boat with strong Victorian charm. LEEVAC built the lavishly-trimmed, three-deck vessel to resemble a turn of the century riverboat.

Passenger vessel construction is only a part of the LEEVAC story. We are currently designing and building new boats and converting old boats for new uses and markets. Let us show you why the passenger vessel pros come to us.

## LEEVAC Shipyards, Inc.

P. O. Box 1190  
Hwy. 90 East  
Jennings, LA 70546  
Ph: (318) 824-2210  
FAX: (318) 824-2970

SINCE 1913



#### NILS DACKÉ Equipment List

Main engines (4)	MAN B&W
CP Propellers	Lips
Generator engines (3)	MAN B&W
Rudder system	Frydenbo
Gears	Lohmann + Stolterfoht
Clutches	Lohmann + Stolterfoht
Generators	AEG
Fuel economy system	Seapacer
Silencers	Energietechnik
Transformers	Tramag
Control console	AEG
Telephone system	Nixdorf
Fire alarm system	Siemens
Ananometer	Th. Friedrich
Radar	Sperry Marine
Refrigeration	Sabroe
A/C	Noske-Kaaser
Ventilation	Witt & Sohn
Fire extinguishers	Preussag/Minimax
Compressors	Hatlapa
Separators	Alfa-Laval
Waste water treatment	Format Chemie
RO/RO equipment	MacGregor-Navire
Deck fittings	Bruggemann
Deck machinery	Hatlapa
Davits	Schat Davit
Lifeboats	Fassmer
Ships medical supplies	Lloyd-Apotheke
Carpeting	Ranneberg



## SEABOURN PRIDE Schichau Seebeckwerft

In November of 1988, Schichau Seebeckwerft AG of Bremerhaven, West Germany, delivered the state-of-the-art, luxury cruise liner Seabourn Pride to owners Seabourn Cruise Line, San Francisco, Calif.

The elegant, all-suite Seabourn Pride is 440 feet in length, with a

beam of 63 feet, design draft of 16.4 feet and gross registered tonnage of 10,000. She is powered by a Bergen diesel propulsion plant that produces about 5,846 hp. She can reach speeds in excess of 19 knots.

The six-deck Seabourn Pride, which flies the Norwegian flag, can accommodate 212 passengers in elegant and spacious outside suites.

Classed by Det norske Veritas, +1A1 Ice C, passenger ship for unrestricted service, EO, to Nat B., the Seabourn Pride features a broad

range of cruise amenities and activities. The ship has a complete health spa and fitness center, swimming pool, lounges and indoor and outdoor verandas. There is an observation lounge for stargazing on the top deck called the Constellation Room and a second lounge, the Nautilus Room, located on the lower deck for observing underwater marine life. Underwater viewing in the ship's Nautilus Room is made possible by two thick plates of glass, one in the outer hull where high-powered

tries Inc. delivered one of the world's most luxurious cruise vessels, the Royal Viking Sun, to Royal Viking Line.

At 38,000 gross tons, the new Royal Viking Sun is almost a third larger than existing Royal Viking ships, yet carries only 740 passengers in 370 staterooms. She has larger cabins, more open deck space and more public room space per passenger than most other cruise vessels—either afloat or under construction.

One hundred twenty-six of the Royal Viking Sun's 370 cabins are deluxe staterooms, all, except four, with a private outside veranda.

The eight-deck Royal Viking Sun has an overall length of 669 feet, molded breadth of 95 feet and draft of 23 feet. Her propulsion system features four rubber-mounted eight-cylinder ZA40 Wartsila-Sulzer main diesel engines developing a total of 28,161 hp. She is fitted with two Liaaen controllable pitch propellers and has a speed of 21-1/2 knots.

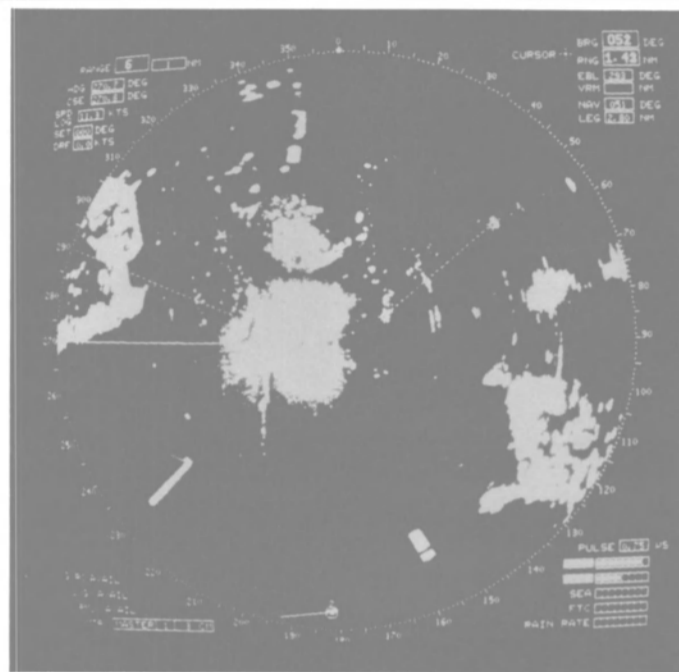
Auxiliary power is supplied by three Wartsila-Vasa 8R32D diesel engines and five Leroy Somer rubber-mounted generators.

Other equipment includes Blohm & Voss retractable stabilizers to reduce rolling to a minimum; two rubber-mounted Liaaen bowthruster units; twin rudders; and Frydenbo electrohydraulic steering gear. The ship's firefighting equipment, hospital and medical equipment, welding gas central and distribution system, electrical welding equipment, high pressure cleaning equipment, gas meters and measuring equipment were all supplied by Unitor Ships Service of Norway.

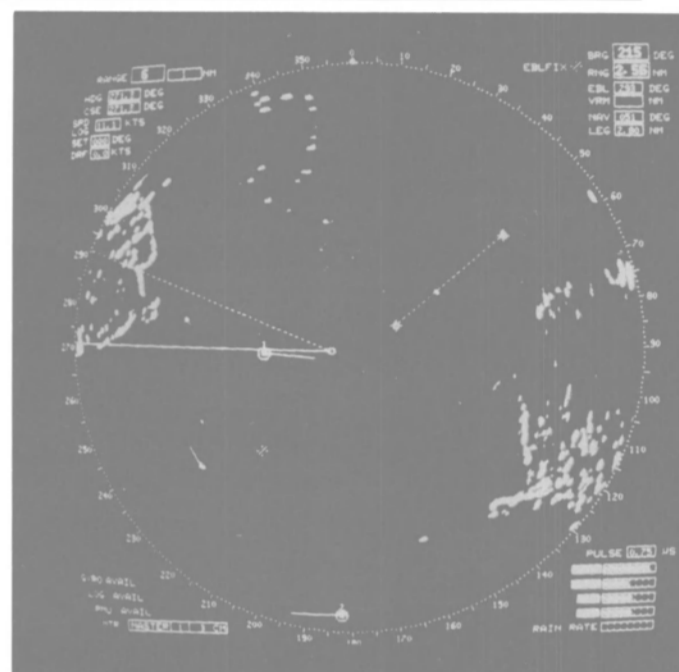
Many of the traditional features found in other Royal Viking cruise ships have been retained in the design of the Royal Viking Sun. For example, the ship features an unobstructed Promenade Deck circling the ship and her main dining room has been designed to accommodate all of the passengers at a single seating.

### ROYAL VIKING SUN Equipment List

Main engines(4)	Sulzer-Wartsila
CP propellers	Liaaen
Generator engines	Wartsila-Vasa
Generators	Leroy Somers
Stabilizers	Blohm & Voss
Bowthrusters	Liaaen
Steering gear	Frydenbo
Firefighting, hospital, medical, cleaning, electrical welding & measuring equipment	Unitor
Gas meters	Unitor



With rain and sea clutter circuits OFF on PATHFINDER/ST ARPA, sea clutter extends 1.8 to 2 miles from ship, ice floe belts appear 320° to 35°, additional ice clutter scattered beyond sea clutter 270° to 320° (Thick lines at 230° and 155° are RACONS).



With rain and sea clutter circuits ON, the radar picture is absolutely "clean." Sea and ice clutter are gone. All targets previously masked are clearly visible.

## Raytheon PATHFINDER/ST, Superior Technology Provides Superior Target Detection.

### True Motion with Electronic Plotting or ARPA.

Raytheon sets radar performance standards for the 21st century with technology breakthroughs that virtually eliminate noise, interference and clutter, while recognizing and displaying even weak targets typically lost on other radars.

The heart of this improved radar system is Raytheon's exclusive five-stage signal processing... we call it Superior Technology.

ST for short.

Combined with higher performance transmitters and receivers, and the latest raster displays, ST provides performance levels never before available. Now, with PATHFINDER/ST, your vessels—and their crews—can have an important extra measure of safety and efficiency, including a unique Safety-Coded CPA Circle, which shows course selections for safest CPAs. PATHFINDER/ST is available as an ARPA or a True Motion/Relative Motion

display with Electronic Plotting. These displays can easily retrofit the displays in older Raytheon Bright Display Radar Systems, and can be high-performance repeaters for radars of most other manufacturers.

When interfaced with an SNA-91 Integrated Bridge Display, the PATHFINDER/ST ARPA also becomes a key sensor/decision-aid in a complete shipboard navigation and control system.

### Near-Perfect Target Detection.

Using increased signal-to-noise levels, high dynamic range, precisely matched pulse bandwidths, and exclusive Rain Rate circuits, PATHFINDER/ST receivers faithfully capture target returns even in severe clutter.

PATHFINDER/ST multistage processing analyzes, compares, tests, and samples the received signal so that all detected targets, no matter how weak in signal strength, are distinguished from clutter and clearly displayed.

lights are focused to enhance the view and attract sea creatures. These glass plates conform to international safety standards.

The Seabourn Pride also has an elegant restaurant that features international cuisine, casino, shop, boutique and library. A special feature of the cruise ship is her marina located at the stern, where passengers are able to swim, sail, and snorkel.

The Seabourn Pride will cruise worldwide, with itineraries sched-

uled for the Caribbean, South America, Northern Europe, Mediterranean and West Africa.

#### SEABOURN PRIDE Equipment List

Main engines	Bergen
Reduction gears	Lohmann & Stolterfoht
Shafting bearings	Lips
CP propellers	Lips
Generator engine	Bergen
Emergency generator engine	Deutz MWM

Boilers	Sunrod
Exhaust gas turbocharger	BBC
Stabilizers	Ross
L/O separators	Alfa Laval
Generators	AEG
Lighting points	Hovik Lys/Aqua Signal
Cables	Siemens
Bowthruster	AEG
Cathodic protection system	Electrocatalytic
Auto telephone system & satcom	Nixdorf
Paging system	Nixdorf
Walkie-talkie system	Motorola

Fire detection & fire door system	Autronica
Operation monitoring system	Noris
Radio plant	Standard Marine
Radar	Krupp Atlas Elektronik
TV equipment	Philips, Diskowski

#### SEAWARD Wartsila Marine

Finnish shipbuilder Wartsila Marine Industries Inc.'s Turku yard also completed its biggest passenger vessel to date, the 1,800-passenger Seaward. She is the first new generation cruise ship built at the yard.

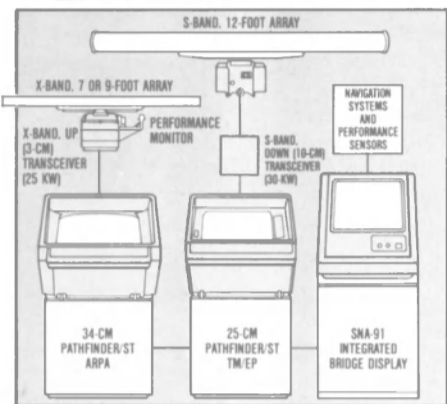
Delivered to Kloster Cruise Ltd., the 708-1/2-foot Seaward has a beam of 95 feet, maximum draft of 23 feet and gross tonnage of 42,300. The vessel is powered by four eight-cylinder Sulzer ZA40 medium-speed diesel engines which produce a total of 28,800 bhp. She can cruise at speeds of more than 21 knots.

Shaft alternators driven by power take-offs (PTOs) from the two main gearboxes provide electricity while maneuvering, and also supply a part of the ship's at-sea auxiliary power requirements.

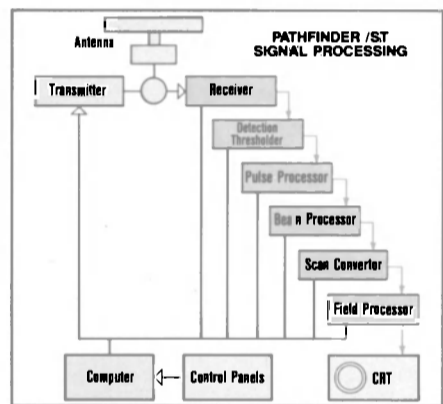
The vessel, which is manned by a crew of 600, is operated by Norwegian Cruise Line, Miami, Fla., a subsidiary of Kloster Cruise Ltd., on seven-day cruises in the Caribbean.

In addition to the 774 passenger cabins on board, there is ample public space, including three large restaurants, three night clubs, seven bars, a casino, spacious shops, a beauty salon, saunas, a fitness center, two swimming pools, whirlpools, a launderette, a hospital and several rooms reserved for various entertainment games.

The Seaward is fitted with advanced firefighting equipment, including fire extinguishers, fire hoses, and firemen's outfits, along with a modern welding gas central and distribution system supplied by Unitor Ships Service. Unitor also supplied an owner's supply medical package that included medicine and medical equipment.



Electronically switches up to 3 displays and transceivers, with CRT diagrams, for single/simultaneous 3 or 10-cm operation.



From the control panels through the computer, transmitter, and receiver—and then in five steps leading to the CRT—Raytheon's exclusive Superior Technology provides sharp, bright radar pictures virtually free of clutter.



PATHFINDER/ST ARPA: 34-cm or 25-cm PPI's (16" or 12" diagonal CRT IMO equivalents), provide automatic tracking of up to 40 targets with vectors and readouts for most dangerous 20. Have auto and manual acquisition, and unique trial maneuvers.

PATHFINDER/ST TM/EP: 34-cm or 25-cm PPI's (16" or 12" diagonal CRT IMO equivalents), have True and Relative Motion displays. Electronic Plotting, course, speed, bearing, CPA and TCPA for two selected targets.

## Comparison Tests Prove PATHFINDER/ST Radars See What Other Radars Can't.

In side-by-side comparison tests, a PATHFINDER/ST display and a conventional radar display were connected to the same radar system. PATHFINDER/ST consistently displayed targets not detected by the conventional display.

## Optimum Resolution Displays are Clearly Superior.

PATHFINDER/ST raster scan PPI images are refreshed 50 times each second. This eliminates the annoying "flicker" found in other radar systems. The number of pixels has been carefully chosen for optimum resolution. The result is an extremely sharp, ultra-bright image that is easy to view, day or night.

January, 1989

## Superior Technology Will Clearly Fit Your Needs.

PATHFINDER/ST Radars satisfy a very wide range of installation and operating requirements. Signal multiplexing reduces connections between PATHFINDER/ST receivers and displays. This, combined with electronic interswitching for dual systems, the ability to mount transceivers "up" in antenna pedestals, or "down" in separate cabinets, and keyboard entry of all set-up parameters, makes any installation straightforward, simple, and economical.

In addition to having the optional IMO-required, antenna-mounted performance monitors, PATHFINDER/ST Radar software provides menus for extensive self-testing of virtually every function.

## Worldwide Approval and Support.

Raytheon PATHFINDER/ST Radars are designed to meet or exceed all applica-

ble commercial standards and reliability testing requirements, including those of IMO and the national regulatory agencies of countries worldwide.

They are backed by extensive worldwide support and service facilities, located in major ports everywhere.

Specifications subject to change without notice

## Raytheon

RAYTHEON MARINE COMPANY  
46 River Road  
Hudson, NH 03051 USA  
603-881-5200  
Telex 681-7529  
Telefax: 603-881-4756

RAYTHEON MARINE SALES AND SERVICE COMPANY  
Siljengade 6  
DK-2300 Copenhagen S, Denmark  
45-1-570611  
Telex 855-31473  
Telefax: 45-1-574077

#### SEAWARD Equipment List

Main engines(4)	Sulzer-Wartsila
Auxiliary engines(3)	Bergen
Reduction gear	Lohmann + Stolterfoht
Bowthrusters	Liaaen
Stabilizers	HDW
Radar	Raytheon/JRC
SatCom	EB
Galley equipment	Sea-King
Mooring winches	Norwinch
Lifeboats	Harding
Life rafts	Viking
Sewage treatment	Consilium Marine
Incinerator	Norsk Hydro
A/C	Stal/Flakt
Carpets	BMK/Dansk Wilton

#### WEST VIRGINIA BELLE Patti Shipyards

One of the largest passenger excursion boats built last year was the triple Cummins engined West Virginia Belle.

Operating on all-day excursion trips between South Charleston, W. Va., and Huntington, W. Va., the

West Virginia Belle is the latest addition in owner **Bob Kehl's** fleet. Mr. Kehl owns Robert's River Rides, which operates three other excursion/dinner boats on the Mississippi River in the Quad Cities, Dubuque and Bettendorf areas of Iowa and Illinois.

Built by Patti Shipyards, Inc., Pensacola, Fla., and designed by their own in-house architectural staff, the West Virginia Belle meas-

ures 197 feet 9 inches by 46 feet with a 10-foot draft. She features two totally enclosed decks, a partially enclosed third deck, and an open fourth deck topped by a pilothouse. Although the boat will be certified for at least 1,200 passengers, but capacity will be limited to 1,000 on all-day 100-mile trips.

While the 500-hp KTA-19 engines are one of the standard workhorses of the Cummins marine die-

sel line, the propulsion system aboard the West Virginia Belle is unique.

For example, the Columbian Kaplan-style propellers are enclosed in Padgett-Swann kort nozzles. "That's a first for passenger excursion vessels as far as we are concerned," said **Frank Patti**, owner of Patti Shipyard.

Another important aspect of the propulsion system is its vibration

isolation system, supplied by Lo Rez Vibration Control, British Columbia, Canada. This system provides an effective isolation system for engine-sourced vibration in medium- and high-speed marine engines, reducing noise by 90 percent over the entire speed range of the engine. It was custom designed for this application by Lo Rez working with the Patti design staff and Cummins engineering.

Two additional Cummins engines are located far forward to power a pair of 250-kw gensets. Cummins NT855 models were chosen for this job. All five Cummins engines were sold by Northern Iowa Diesel, Dubuque, Iowa.

The hydraulic system onboard the boat was supplied by Custom Hydraulics, Gretna, La. A PTO, attached to one of the gensets, runs a hydraulic pump that powers the bowthruster. Separate electric motors powering hydraulic pumps operate the steering system, and the paddlewheel lifting system. The West Virginia Belle has a cosmetic paddlewheel that can be lifted out of the water to cut drag during times when the boat is underway at full speed.

#### WEST VIRGINIA BELLE Equipment List

Main engines (3)	Cummins
Propellers	Columbian Bronze
Kort nozzles	Padgett-Swann
Generator engines	Cummins
Reduction gears	Twin Disc
Engine controls	Mathers
Steering controls	Custom Hydraulics
Bowthruster	Arcturus
Vibration isolation	Lo Rez
Radar	Furuno
Depth sounder	Datamarine
Pumps	Scott
Water purifier	Aquafine
Sewage treatment systems	Microphor

*Rounding out the selections for "Outstanding Passenger Vessels of 1988," are the previously featured "Outstanding Shallow-Draft Passenger Vessels of 1988." These vessels were highlighted in the August 1988 issue of MARITIME REPORTER. Here, once again, is a brief glimpse at these notable craft.*

#### ANNABEL LEE Dinner/Cruise Riverboat

**Builder:** Service Marine Industries, Inc., Morgan City, La.

**Owner/Operator:** Heritage Cruise Lines, Richmond, Va.

#### Main Particulars:

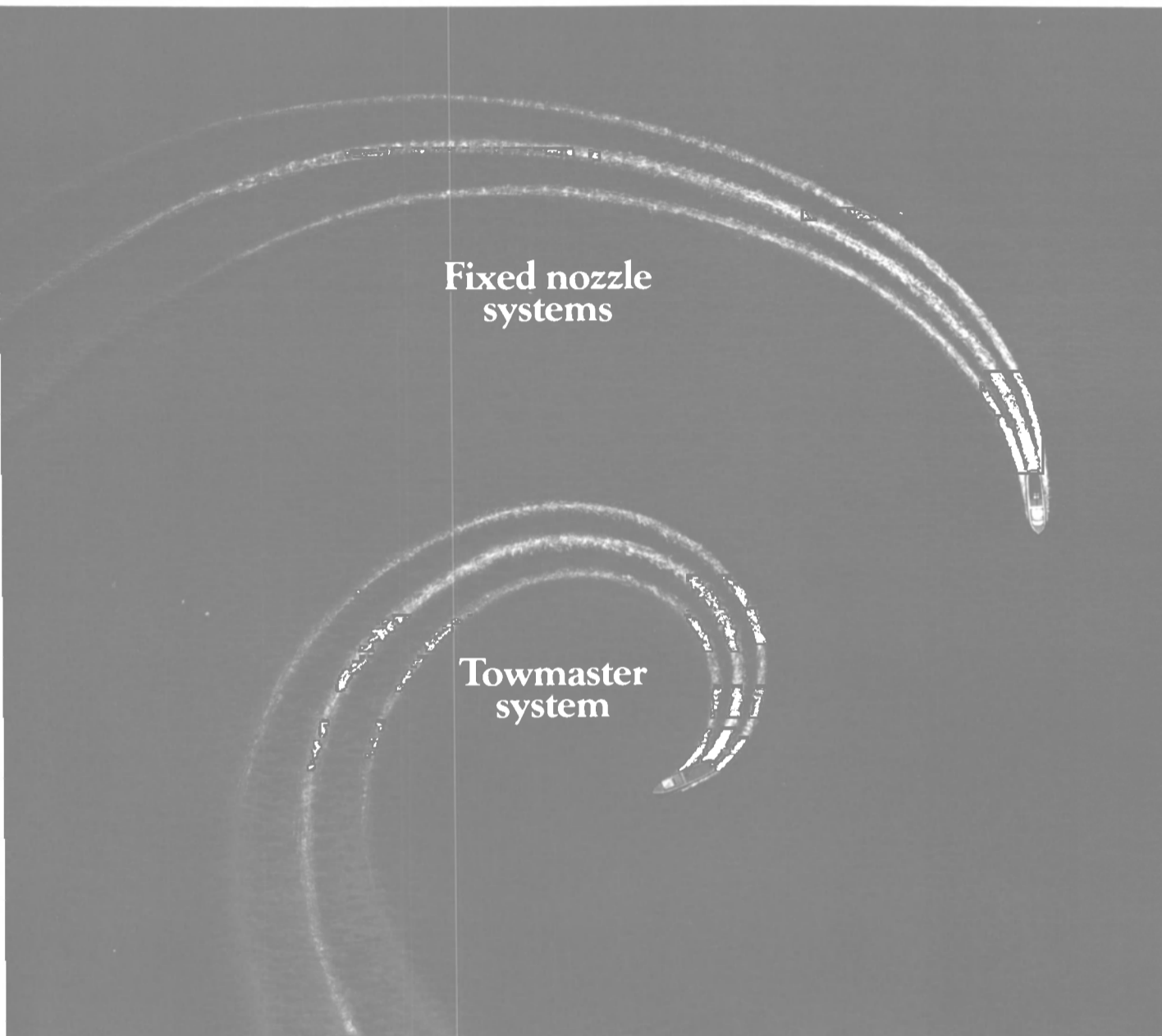
**Overall Length:** 108 feet; **Beam:** 34 feet; **Draft:** 3 feet 9 inches; **Passenger capacity:** 600.

**Main engines:** Two rebuilt GM8V-92 diesels rated at 310 hp each at 1,800 rpm.

#### Equipment List:

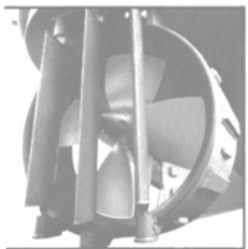
Generators	KATO
Generator engines	GM
Reduction gears	Twin Disc
A/C	Carrier
Paint	International Paint
Music system	Aiphone
Ceiling	Armstrong
Electrical panel	Power Panels
Windows	Southern Glass

Maritime Reporter/Engineering News



## 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 dramatic improvement in maneuver-

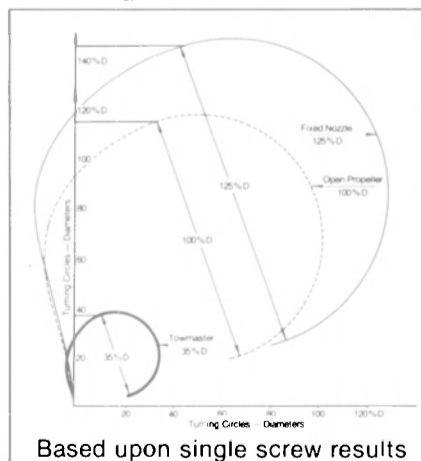


ability and turning efficiency. In fact, if your vessel presently has a fixed nozzle system, tests prove the Towmaster Nozzle/Rudder System could reduce your turning circle by 70%. If yours is an open propeller system, you can expect an improvement of up to 60%.

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



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

Circle 154 on Reader Service Card

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.

**Michigan  
Wheel  
Corporation**

1501 Buchanan Ave. S.W.  
Grand Rapids, MI 49507  
Phone (616) 452-6941  
Telex 6877077 MIMOT UW



**CATALINA FLYER**  
**Catamaran Passenger**  
**Ferry**

**Builder:** Nichols Brothers Boat Builders, Whidbey Island, Wash.  
**Owner/Operator:** Catalina Passenger Service  
**Main Particulars:**  
**Overall Length:** 118 feet; **Beam:** 40 feet;  
**Draft:** 8 feet; **Passenger capacity:** 500.  
**Main engines:** Two specially lightened 2,000-hp Caterpillar 3516 TA diesels.  
**Equipment List:**  
 Generator engines . . . . . John Deere  
 Reduction gears . . . . . Reintjes  
 Propellers . . . . . Lips  
 Propulsion controls . . . Systems Engineering  
 Steering . . . . . Hough Marine  
 Starters . . . . . Klockner-Moeller  
 VHF radios . . . . . ICOM  
 Radars . . . . . Furuno  
 Autopilot . . . . . Sperry  
 Loran . . . . . Furuno  
 Flasher . . . . . Ross  
 Wiring &  
 light fixtures . . . . Hardware Specialty  
 Sound entertainment system . . . . Bogen  
 Coatings . . . . . Hempel

**EAGLE**  
**Passenger/Vehicle Ferry**

**Builder:** McDermott Shipyard, New Orleans, La.  
**Owner/Operator:** Woods Hole, Martha's Vineyard & Nantucket Steamship Authority, Massachusetts.  
**Main Particulars:**  
**Overall Length:** 233 feet; **Beam:** 60 feet;  
**Loaded Draft:** 9 feet 9 inches; **Depth:** 16 feet; **Vehicle capacity:** 70 automobiles or 37 autos/6 trucks; **Passenger capacity:** 1,475.  
**Main engines:** Two 1,500-hp GM 12-645E6A diesels.  
**Equipment List:**  
 Propellers . . . . . Coolidge  
 Reduction gears . . . . . Reintjes  
 Main generators . . . . . Caterpillar  
 Emergency generator . . . . . Caterpillar  
 Bowthruster . . . . . Harbormaster  
 Motor controls . . . . . Westinghouse  
 Engine room &  
 vessel automation . . . . Engine Monitor  
 Switchgear . . . . . Trinity Power  
 Gyrocompass . . . . . Sperry  
 Radars . . . . . Raytheon  
 UHF radio . . . . . Raytheon  
 Sound-powered  
 telephones . . . . . Hose-McCann  
 P/A system . . . . . Bogen  
 Firefighting system . . . . . Halon  
 A/C & heating . . . . . Bailey/Burnham  
 O/W separators . . . . . Pace  
 Anchor  
 windlasses . . . . . New England Trawler  
 Pumps . . . . . Crane Denning  
 Pumps . . . . . Gorman Rupp  
 Air compressors . . . . . Ingersoll-Rand  
 Bow & stern doors . . . . MacGregor-Navire  
 Elevators . . . . . Unidynamics  
 F/O purifier . . . . . Alfa-Laval

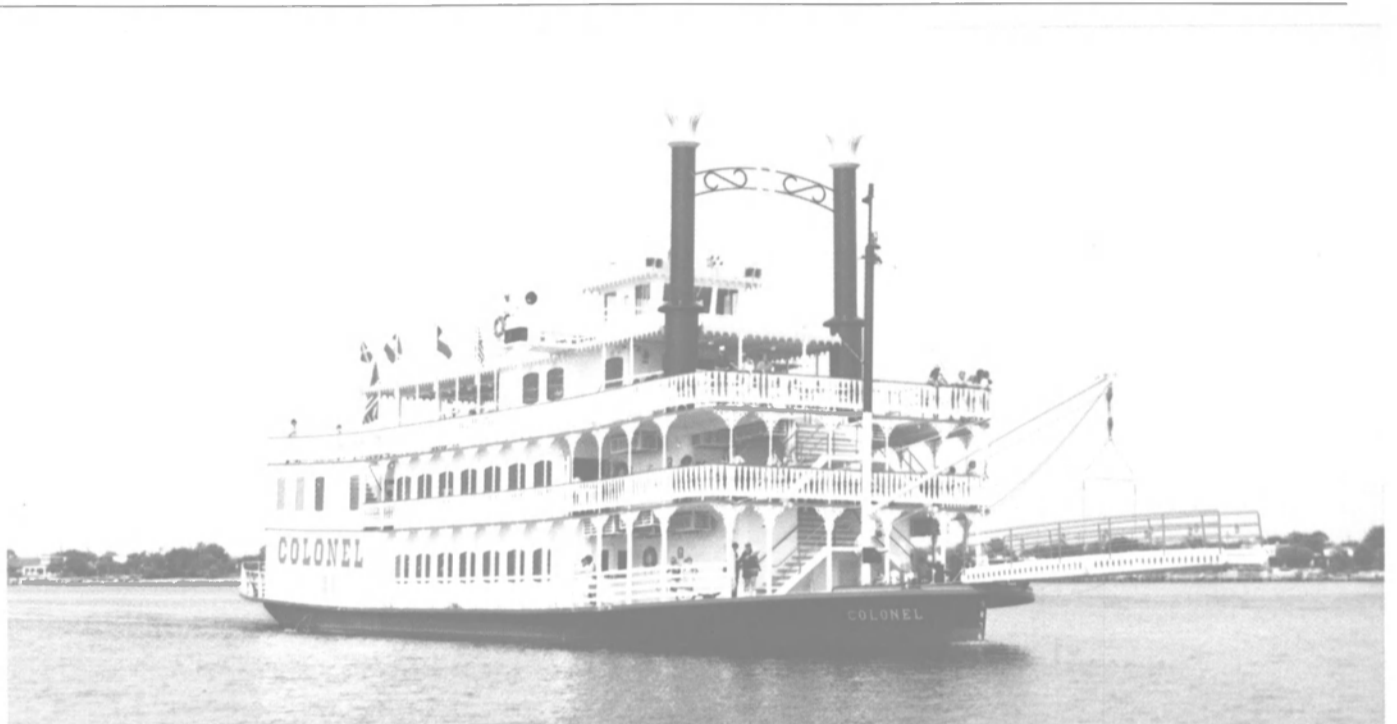
**HENRIETTA II**  
**Paddlewheeler**

**Builder:** Superior Boat Works, Greenville, Miss.  
**Owner/Operator:** Cape Fear Riverboats, Inc., Wilmington, N.C.  
**Main Particulars:**  
**Overall Length:** 85 feet; **Beam:** 26 feet; **Passenger capacity:** 149.  
**Main Engines:** Two Cummins 6BT5.9 diesels rated at 134 hp each at 1,800 rpm.

**Equipment List:**  
 Generators . . . . . Newage  
 Generator engines . . . . . Cummins  
 Keelcoolers . . . . . Fernstrum  
 Hydraulics . . . . . Skipper Hydraulic

**ISLAND COUNTESS**  
**Excursion/Tour Boat**

**Builder:** Freeport Shipbuilding & Marine Repair, Inc., Freeport, Fla.



**We designed and built these and over 9,000 other vessels.**

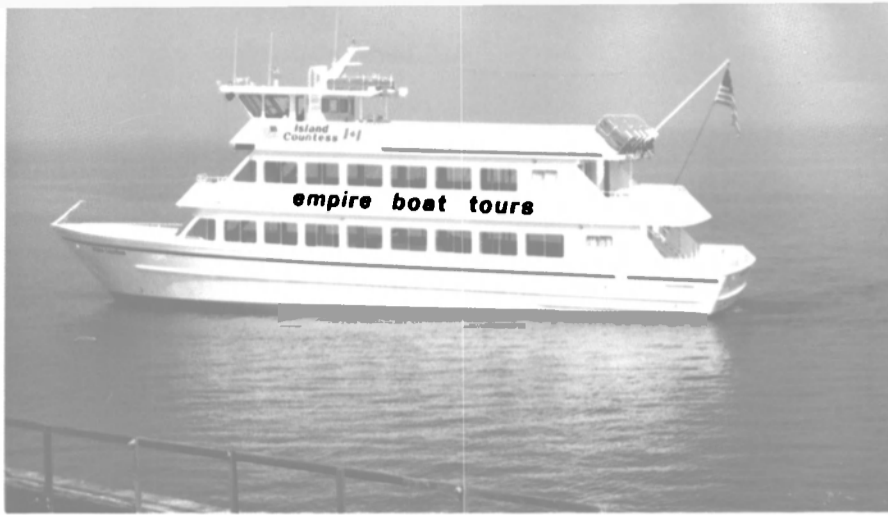
**We can build any boat you need.**

We offer experience like no other shipbuilder in the world. We offer consultation, design and engineering services, and advanced production technology. We build to your design or ours, to any regulatory standard. And we build in steel, aluminum, and fiberglass.

We are a NYSE, "Fortune 500" company so you are assured of financial strength, bonding capacities, and support programs. Need it quick? We designed, built, certified, and delivered the 800 passenger, 152 foot "Colonel" above in 112 days! We can build any boat you need. Call us.



P. O. Box 29266 / New Orleans, LA 70189 / (504) 246-8900 / Telex: 6821246 / Telefax: 504-245-7869



**Owner/Operator:** Empire Boat Tours, New York.  
**Main Particulars:**  
**Overall Length:** 101 feet; **Beam:** 27 feet;  
**Full Load Draft:** 5 feet; **Passenger capacity:** 523.  
**Main Engines:** Two 300-hp Detroit Diesel 8V92 diesels.  
**Equipment List:**  
 Propellers . . . . . Michigan Wheel  
 Generator engines . . . . . John Deere  
 Generators . . . . . Lima  
 Reduction gears . . . . . Allison  
 Shafts . . . . . Armco Aquamet  
 Engine controls . . . . . Mathers  
 Steering controls . . . . . Wagner

Bowthruster . . . . . Seamaster  
 VHF radios . . . . . Uniden  
 Radar . . . . . Raytheon  
 Compass . . . . . Ritchie  
 Depth sounder . . . . . Data Marine  
 Fire pump . . . . . Crown  
 Bilge pump . . . . . Flomar  
 Sewage pump . . . . . Hydromatic

# MARITIME LONDON 89

## INTERNATIONAL BUSINESS FESTIVAL



Maritime London '89 is an international business festival in the heart of one of the world's most important shipping centres. Of the numerous events scheduled, you may decide to take part on any or all - but, to be anywhere other than the City of London during the week 17-21 April '89 could mean missing out on untold business opportunities. At least one person at senior management level in your company should be there.

### A summary of the week's events (with just a hint of the business potential)

#### The Seatrader Awards Ceremony Dinner

The Awards Ceremony Dinner, in aid of charity, takes place in the City of London's Guildhall on Monday 17 April 1989. Over 600 senior people from all sectors of maritime related business worldwide will gather for a reception and formal, black-tie, dinner to honour the awards winners. It's a splendid time for making new contacts, greeting old friends, and entertaining clients.

#### Expoship London and the Exhibition Seminars

As a showcase for new technology, conduit of trade and birthplace of new ideas, Expoship London '89 will host over 200 companies from around 40 nations.

#### The Money & Ships Conference

This well-known and highly respected forum will, once again, tackle major issues affecting the industry. Over the past twenty years attendance at these conferences has averaged around 375 delegates - many of whom are influential in the control of commercial organisations active in the maritime field.

#### Seatrader Receptions

The following programme is subject to change but will serve to indicate the general scheme:

##### Tuesday 18 April 1989

- 1.00pm A Seatrader Reception for invited Shippers, Charterers and Ports Executives.
- 5.30pm A Seatrader Reception for Exhibitors and Conference Delegates.

##### Wednesday 19 April 1989

- 1.00pm A Seatrader Reception for Conference Delegates.
- 5.00pm A Seatrader Reception for invited Marine Engineers, Naval Architects, and Marine Superintendents.

##### Thursday 20 April 1989

- 1.00pm A Seatrader Reception for invited Shipowners and Conference Delegates.
- 5.00pm A Seatrader Reception for members of one of the Overseas Delegations.

##### Friday 21 April 1989

- 4.30pm A Seatrader End-of-the-week Special!
- The Seatrader Club offers 'open house' to old and new friends - exhibitors, delegates, speakers, award winners... in fact anyone who has the energy and time to spare or a reason to celebrate. Simple refreshments will be available through to 6.00 pm.

#### An exhibition of paintings by members of the Royal Society of Marine Artists

The pictures will hang in the Seatrader Club right through Maritime London Week.

For information about how to attend:

UNITED STATES

TELEPHONE: (212) 393 1000

TELEFAX: (212) 6085874

TELEX: 233629 SEA UR

Or write to: Vivian Cebollero,  
 Conference and Exhibition Manager,  
 The Seatrader Organisation, Suite 1805,  
 40 Rector Street, New York, NY 10006

UNITED KINGDOM

TELEPHONE: 44 206 45121

TELEFAX: 44 206 45190

TELEX: 98517 DISOP G

Or write to: Maritime London '89  
 Enquiries and reservations Department,  
 The Seatrader Organisation, Fairfax House,  
 Causton Road, Colchester CO1 1RJ.



### MASSACHUSETTS

#### Commuter Boat

**Builder:** Gulf Craft, Inc., Patterson, La.  
**Owner/Operator:** Massachusetts Bay Lines, Inc., Hingham, Mass.

**Main Particulars:**  
**Overall Length:** 95 feet; **Beam:** 28 feet;  
**Draft:** 6 feet; **Passenger capacity:** 345.  
**Main Engines:** Four Detroit Diesel 12V71TI diesels rated at 720 hp each at 2,300 rpm.

**Equipment List:**  
 Propellers . . . . . Columbian Bronze  
 Generator engines . . . . . Detroit Diesel  
 Generators . . . . . KATO  
 Reduction gears . . . . . Twin Disc  
 Engine controls . . . . . Morse  
 Steering controls . . . . . Hydraulics/Gulf Craft  
 VHF radios . . . . . Raytheon  
 Radar . . . . . Furuno  
 Compass . . . . . Danforth  
 Loran . . . . . Furuno  
 Loudhailer . . . . . Cybernet  
 A/C & heating . . . . . Carrier  
 A/C pumps . . . . . STA-RITE  
 Bilge pump . . . . . Peabody Barnes  
 Fire pump . . . . . Berkley  
 Freshwater pump . . . . . Sears  
 Hydraulic pumps . . . . . Hydreco  
 Sewage pump . . . . . Peabody Barnes  
 Sanitation pump . . . . . Peabody Barnes  
 Water heater . . . . . Kenmore  
 Battery chargers . . . . . Laramche  
 Engine room blowers . . . . . LF Gaubert  
 Life floats . . . . . Jim Buoy  
 Water lights . . . . . Guest

### MAUI PRINCESS

#### Passenger/Cargo Ferry

**Conversion:** Aluminum Boats, Inc., Crown Point, La.  
**Owner/Operator:** Sealink of Hawaii, Inc., Maui, Hawaii.

**Main Particulars:**  
**Overall Length:** 117 feet; **Passenger capacity:** 149; **Cargo capacity (with passengers):** 10 tons; **Cargo capacity (without passengers):** 60 tons.  
**Main Engines:** Two rebuilt Detroit Diesel 12V71 diesels.



# This used to be the engine room.



Now this space is pure profit. Even better, thanks to GE's compact LM2500 gas turbine engine propulsion, there are 69 more spaces just like it aboard. That's how many additional passenger cabins LM2500 propulsion yields over diesel engines in the typical 1900-passenger cruise ship.

Since the overall operating cost of either system is virtually the same, with LM2500, your bottom-line gets more of what you operate a cruise line for. Plus, your passengers get a smoother, cleaner, quieter voyage. And the Captain, the most trouble-free ship of his career.

Sounds like a sea story? Ask the U.S. Navy. Or the navies of 16 other nations. For more than a decade, LM2500 propulsion has provided them more shipboard space, exceptional reliability, lower maintenance costs, and availability for sea duty that's consistently over 99%.

To find out how GE's LM2500 propulsion can help you cruise into the future profitably, contact Manager of Cruise Line Marketing, Mail Drop N-158, GE Marine & Industrial Engines, 1 Neumann Way, Cincinnati, Ohio, USA 45215. Or call 513-552-5378.



Circle 218 on Reader Service Card

*GE Marine  
& Industrial Engines  
Keeping the Promise*



## SPIRIT OF CHICAGO Excursion/Dinner Boat

**Builder:** Blount Marine Corporation, Warren, R.I.  
**Owner/Operator:** Holiday Cruise VI, Inc., Norfolk, Va.  
**Main Particulars:**  
**Overall Length:** 192 feet; **Beam:** 36 feet;

**Loaded Draft:** 7 feet; **Passenger capacity:** 600.  
**Main Engines:** Two Detroit Diesel 12V71TI diesels.  
**Equipment List:**  
Auxiliary engines . . . . . Detroit Diesel  
Generators . . . . . Detroit Diesel  
Reduction gears . . . . . Twin Disc  
Propellers . . . . . Columbian Bronze  
Bowthruster engine . . . . . Detroit Diesel

Engine controls . . . . . Mathers  
Radar . . . . . Furuno  
VHF radiotelephones . . . . . Raytheon  
Depth sounder . . . . . Data-Marine  
Compass . . . . . Dirigo  
Horn . . . . . Kahlenberg  
Searchlight . . . . . ITT Jabsco  
Keelcoolers . . . . . Blount Marine  
Stuffing boxes . . . . . Blount Marine  
Steering system . . . . . Wagner  
Main shaft bearings . . . . . Rexnord  
Stern bearings . . . . . BFGoodrich  
Freshwater pressure system . . . . . Peabody Barnes  
Sanitary system . . . . . Peabody Barnes  
Bilge pump . . . . . JABSCO  
Fire pump . . . . . Gormann Rupp  
Wash-down pump . . . . . Gorman Rupp  
A/C & heating . . . . . Dunham-Bush

chusetts.  
**Main Particulars:**  
**Overall Length:** 82-1/2 feet; **Beam:** 28-1/2 feet; **Draft:** 7 feet; **Passenger capacity:** 300.  
**Main Engines:** Two Deutz MWM TBD604B V-12 diesels rated at 1,690 hp each at 1,800 rpm.  
**Equipment List:**  
Reduction gears . . . . . Reintjes  
Generators . . . . . Lister  
Propellers . . . . . Lips  
Steering . . . . . Hough Marine  
Controls . . . . . Morse  
Compass . . . . . Ritchie  
Radar . . . . . Furuno  
Loran . . . . . Digital Marine  
Autopilot . . . . . Robertson  
VHF radio . . . . . ICOM  
Depth sounder . . . . . Datamarine  
Horn . . . . . Buell  
Bilge pump . . . . . Jabsco  
Cellular phone . . . . . Motorola  
Cellular pay phone . . . . . Railfone  
Navigation lights . . . . . Aqua-Signal  
Battery charger . . . . . Professional Mariner  
Searchlight . . . . . Phoenix  
Extinguishers . . . . . Walter Kidde  
Halon system . . . . . Walter Kidde

## VINEYARD SPRAY Catamaran Passenger Ferry

**Builder:** Gladding-Hearn Shipbuilding, Somerset, Mass.  
**Owner/Operator:** Bay State Cruises, Massa-

### OUTSTANDING PASSENGER VESSELS OF 1988

SHIP/BOAT	TYPE	DIMENSIONS Lgth-Wdth-Dft (in feet)	PASSENGER CAPACITY	MAIN ENGINES	OWNER/OPERATOR	BUILDER
Alexandria Belle	Paddlewheeler	87x32x4.6	400	Detroit Diesel (2)	Uncle Sam Tours	Blount Marine
Amorella	Cruise ferry	555½x90½x19½	2,200	SEMT-Pielstick-Jadranbrod (4)	SF Line	Brodosplit
Annabel Lee	Riverboat	108x34x3.75	600	GM (2)	Heritage Cruise Lines	Service Marine
Bay Lady	Harbor cruise boat	140x36	600	Cummins (4)	Baltimore Harbor Bay Tours	Service Marine
Caribe Tide	Cruise tender	85x24x5½	232	Cummins (4)	Transportation Services	Equitable Shipyards
Catalina Flyer	Catamaran	118x40x8	500	Caterpillar (2)	Catalina Passenger Service	Nichols Bros. Boat Builders
Crown Odyssey	Cruise ship	616x92½x22.7	1,221	Krupp MaK (4)	Royal Cruise Line	Meyer Werft
Eagle	Pass./Veh. ferry	233x60x9.75	1,475	GM (2)	Woods Hole, Martha's Vineyard & Nantucket Steamship Authority	McDermott Shipyard
Henrietta II	Paddlewheeler	85x26	149	Cummins (2)	Cape Fear Riverboats	Superior Boat Works
Island Countess	Tour boat	101x27x5	523	Detroit Diesel (2)	Empire Boat Tours	Freeport Shipbuilding
Massachusetts	Commuter boat	95x28x6	345	Detroit Diesel (4)	Massachusetts Bay Lines	Gulf Craft
Maui Princess	Ferry	117	149	Detroit Diesel (2)	Sealink of Hawaii	Aluminum Boats
Nils Dacke	Rail ferry	581x84½x20	300	MAN B&W (4)	Rederi AB Swedcarrier	Schichau Seebeckwerft
Queen Rokko	Catamaran	109x29½	250	Deutz MWM (2)	Awaji Ferry Boat	Mitsui Engineering
Royal Viking Sun	Cruise ship	669x95x23	740	Sulzer- Wartsila (4)	Royal Viking Line	Wartsila Marine
Seabourn Pride	Cruise ship	440x63x16.4	212	Bergen	Seabourn Cruise Line	Schichau Seebeckwerft
Seaward	Cruise ship	708½x95x23	1,800	Sulzer-Wartsila (4)	Kloster Cruise Ltd.	Wartsila Marine
Spirit of Chicago	Harbor cruiser	192x36x7	600	Detroit Diesel (4)	Holiday Cruise VI	Blount Marine
Vineyard Spray	Catamaran	82½x28½x7	300	Deutz MWM (2)	Bay State Cruises	Gladding-Hearn Shipbuilding
West Virginia Belle	Paddlewheeler	197.8x46x10	1,200	Cummins (3)	Robert's River Rides	Patti Shipyard
Yukon Queen	Excursion boat	64x17x2.8	49	Triple Luger (3)	HAL-Westours	Munson Mfg.

*Specializing in*

- Water Transportation of General Cargo, Chemicals and Bulk Petroleum
- Sales, Charters and Brokerage of Marine Equipment and Vessels
- Vessel Design, Construction and Repair

**ZIDELL**  
MARINE GROUP

3121 SW Moody Avenue, Portland, Oregon 97201  
(503) 228-8691/(800) 547-9259  
RCA Telex 283985/FAX: (503) 228-6750  
Ask for Bill Gobel or Jack Breshears

Circle 178 on Reader Service Card

**McELROY**  
DECK EQUIPMENT

ENGINEERED TO PERFORM  
ENGINEERED TO LAST  
P.O. BOX 4454  
BILOXI, MISSISSIPPI  
39535-4454  
(601) 896-3736  
TELEFAX: (601) 896-0874  
1-800-634-6478

WINDLASSES

McElroy stands ready to engineer, design, and quickly deliver any type deck equipment your requirements call for.

CAPSTANS

Circle 138 on Reader Service Card

**JIM'S PUMP REPAIR INC.**

**JPR**  
INCORPORATED

48-55 36 St.  
L.I. City, NY 11101  
Established 1974

**JIM LAGONIKOS,**  
President

**BOB MOONEY,**  
Sales & Service  
Manager

**Reconditioned Coffin & Pacific Pumps**  
A-1 Condition  
TYPE • F-CG - DE - DEB - IND - T - DEB-22  
TBA • 12 - 16 - 16½

Service 24 HRS • Parts Available  
TEL 718-392-4444 • TLX-TWX  
FAX 718-482-8372 • 710-5824847 JPRNYK

Circle 332 on Reader Service Card  
Maritime Reporter/Engineering News

Wipers	American Bosch
Seating	Marine Interiors
Muffler	Cowl
Paint	Awlgrip
Paint	Sterlin
Paint	International Paint

can Manufacturing Company by its Quality Control Department, which consists of six full-time people whose only job is quality control. This department is headed by a graduate textile engineer.

American Manufacturing Company, Inc. is one of the largest cordage manufacturers in the U.S. Founded in 1889, its ultramodern mill is located in Lafayette.

The company has an extensive

network of rope distribution centers around the country. They are located in Elizabeth, N.J., Jacksonville, Fla., New Orleans, and Lafayette, La., Houston, Texas, Signal Hill (Los Angeles area) and Emeryville, Calif. (San Francisco Area), Seattle, Wash., and St. Louis, Mo.

For a free copy of the new specification sheet,

Circle 63 on Reader Service Card

## Italmar Buys AESA Astican Yard

In a recent joint venture, Italmar and Lavinia Corporation purchased the Astican ship-repair yard of Spanish state-owned Astilleros Espanoles S.A. The purchase price for the small Canary Islands facility was not revealed.



## YUKON QUEEN Excursion Boat

**Builder:** Munson Manufacturing, Inc., Edmonds, Wash.

**Owner/Operator:** Holland America Line-Westours

**Main Particulars:**

**Overall Length:** 64 feet; **Beam:** 17 feet; **Draft:** 2 feet 9 inches; **Passenger capacity:** 49.

**Main Engines:** Three six-cylinder, four-cycle, turbocharged, aftercooled Triple Luger L6140A rated at 550 hp each at 2,100 rpm.

**Equipment List:**

Marine jets	Hamilton
Generators	Northern Lights
Engine controls	Morse
Steering controls	Wagner
VHF radio	ICOM
Radar	Furuno
Compass	Coastal Navigator
Loran	Morrow
Fuel filters	Racor

## New Rope Specification Sheet Available From American Manufacturing

American Manufacturing Company, Inc., Lafayette, La., recently published a new detailed rope specification sheet.

The new specification sheet lists one of the highest minimum breaking strengths for a given weight per 100 feet in the entire cordage industry. American is able to achieve these high strengths through its use of premium grade raw materials, extensive cordage-making skill and know-how, and complete line of state-of-the-art rope-making machines, which give the rope engineers at American Manufacturing Company, Inc. better control and uniformity in the rope making process.

Quality is maintained at Ameri-

# Technology, creativity, efficiency. To be a leader all over the world seas.

It's the strategic choice of a Company constantly seeking high quality and advanced technologic solutions. With the conversion of Costa Riviera, Clodia and Ferruzzi bulk carriers and with the rebuilding of Costa Marina, Mariotti is a leader in international ship's repairing. Mariotti: an image of creativity, efficiency, perfect organization.



Barbino & Partners

Since 1928 an efficient and flexible organization, the ability of Technicians, worker's teams highly skilled, have entailed Mariotti to be appreciated all over the world.

Repairs and conversions of all kind of ships.

General overhauls of main auxiliary engines, mechanical equipments.

Dry dock works, installation of machinery and equipments.

Steelworks, pipeworks.



## T. MARIOTTI

Engineering workshop - Ship's repair and completing

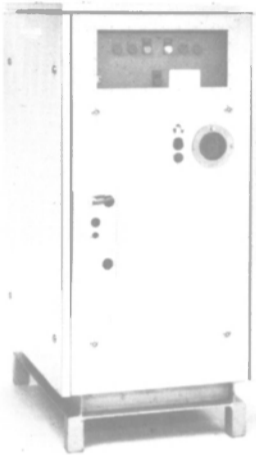
Calata Chiappella, Genova (Porto) - Tel. 010/25.68.21 - Telex 270329 OMA GE - Telefax 010/25.72.08

Circle 289 on Reader Service Card

## Alfa-Laval's Nirex Distiller And New Ice Marine Are Ideally Suited For Trawlers & Variety Of Small Vessels

### —Literature Available—

Alfa-Laval, Inc. of Ft. Lee, N.J., recently announced the introduction of a new Nirex ice machine for trawlers and fishing vessels, and a new Nirex freshwater distiller designed to meet the needs of small vessels.



FWI 1250 Nirex freshwater ice machine.

Designated the FWI Series, the Nirex ice machines are ideally suited for preserving and transporting fish over long distances. The

freshwater ice produced will not freeze the fish flesh, but instead will maintain the fish at the correct temperature to insure the best quality.

The machines are compact and come fully equipped with electric motors, control panel, instruments, safety devices and complete internal piping. They produce flake ice at an ideal temperature of 23° F. The ice fills all cavities and completely surrounds the fish, keeping it wet and cool, without freezing.

Several models are available covering capacities from 0.350 up to 10 tons/day.

The new Nirex freshwater distiller, designated the JWSP-16-C40, is ideally suited for use on fishing vessels, workboats, supply boats and offshore rigs with small engines. It is designed to be easily connected to the diesel engine jacket water system and utilize the BTU's available in the JW system as the heat source. Steam can also be used if available.

The JWSP-16-C40 has a capacity range of 100 to 1,850 gpd, depending on the heating medium and cooling water temperatures. Distillers can be dimensioned to suit any jacket water temperature from 131-194° F



JWSP-16-C40 Nirex freshwater distiller.

and any seawater 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 400 pounds, the JWSP-16-C40 can easily be dismantled, allowing subassemblies to be hand-carried by two persons into the engine room without making alterations in the room. The unit can be quickly reassembled—just bolt it together, hook it up to water and electrical lines, and start it up with the push of a button. It can be either deck, bulkhead or overhead mounted.

The distiller is designed to operate automatically under varying operating and weather conditions without any effects on salinity of the fresh water produced.

Like all Alfa-Laval Nirex distill-

ers, the JWSP-16-C series features titanium plate heat exchangers that eliminate corrosion problems 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. 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 JWSP-16-C40. This combined system lowers installation costs and increases reliability of the distiller.

For more information, free color literature, etc., on the new Nirex ice machine,

Circle 16 on Reader Service Card

For free color literature giving full details on the new JWSP-16-C series Nirex distiller,

Circle 17 on Reader Service Card

## IHC Holland To Build Two Hopper Dredgers Under \$22-Million Pact

IHC Holland was recently awarded a \$22.4-million order by the Dredging Corporation of India to design and build two 4,500-m<sup>3</sup>-capacity trailer suction hopper dredgers.

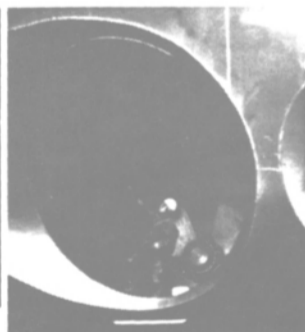
# KAMEWA

## FOR MODERN PROPULSION TECHNOLOGY

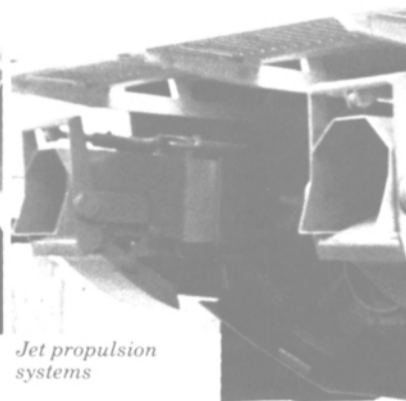
- Design and manufacturing of electronic control systems for all products
- Comprehensive research and development facilities in the hydrodynamic laboratory
- Training school
- Worldwide service



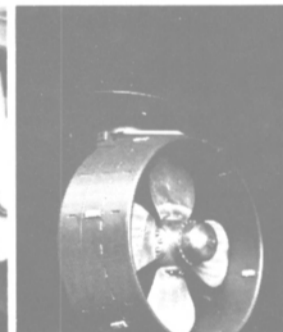
Controllable pitch main propellers



Tunnel thrusters



Jet propulsion systems



Rotatable thrusters



**KAMEWA**  
A Vickers P.L.C. company

KAMEWA AB · P.O. BOX 1010 · S-681 01 KRISTINEHAMN · SWEDEN  
TELEPHONE +46 550 840 00 · TELEX 66050 · TELEFAX 181 90

U.S. representative merchant applications California, Oregon, Washington:

**UNITOR**

UNITOR SHIPS SERVICE  
1800 West Emerson Place, Suite 203  
Seattle, WA 98119, U.S.A.  
Telephone: (206) 284-7781  
Fax: 206-281-0082

U.S. representative jet propulsion systems for yachts:

**mtu**

MTU OF NORTH AMERICA  
10450 Corporate Drive  
Sugar Land, TX 77476  
(713) 240-4100 in Texas  
(800) 321-2688 outside Texas

U.S. representative naval applications:



JERED BROWN BROTHERS INC.  
A SUBSIDIARY OF VICKERS P.L.C.

2361 JEFFERSON DAVIS HWY.,  
SUITE 612, ARLINGTON, VIRGINIA 22202  
Telephone No.: 703 979 5007  
Facsimile No.: 703 979 8227

### 315-Passenger Boat Delivered By Leevac

Leevac Shipyards, Inc., Jennings, La., recently delivered a 125-foot, 315-passenger excursion boat to Padelford Packet Boat Co., Minneapolis, Minn.

Christened the M/V Anson Northrup, she is powered by a pair of Caterpillar 3306 BT diesel engines, and is fitted with two Caterpillar 3304 NA generator sets.

According to Padelford Packet owner Capt. William Powell, the vessel, designed by A. Lawrence Bates, Louisville, Ky., will provide passengers temperature controlled enclosed decks with ample window area to enjoy the sights on the Mississippi River in the St. Paul-Minneapolis area. The appearance of the boat is similar to that of turn-of-the-century steamers. She is propelled by twin screws.

Vibration has been minimized by using Lo-Rez main engine shaft flexible couplings and steel spring isolators. A low silhouette pilothouse allows the Anson Northrup to clear the many low bridges along the route, thus increasing her cruising range.

Since 1913, Leevac Shipyards, Inc., has been building and repairing fishing vessels, supply boats, geophysical boats, tugs, barges and excursion vessels.

For free literature detailing the boatbuilding services of Leevac Shipyards,

Circle 57 on Reader Service Card

### Aeroquip Offers New Cargo Control Products Bulletin

Aeroquip's line of Strap-All™ cargo control products, including ratchet binders, pickup anchors, car tiedowns, rope tie-off straps, utility straps and tow straps are featured in Bulletin 2118.

Ideal for light hauling use, the Aeroquip Strap-All ratchet binder features an abrasion-resistant, strong nylon strap that extends to 16 feet in length to hold down boats and snowmobiles, and to restrain cargo in pickup trucks and trailers.

The Strap-All pickup anchor provides a secure tiedown point in pickup stake pockets for the Strap-All ratchet binder or other tiedowns.

With an assembly strength rating of 5,500 pounds and an adjustable length from 2 to 10 feet, Aeroquip's heavy-duty car tiedown will securely hold vehicles in transit.

The versatile Ropelock® tiedown system features 12 feet of strong 5/16-inch-diameter nylon rope with a 500-pound minimum break strength. It eliminates bothersome tying and untying of rope knots when securing loads on cartops, in pickups, etc.

The Strap-All utility strap is ideal

for quick and easy restraint of boats and cargo on cartops, pickups, campers and boat trailers. The line also includes tow straps that are available in assembly strength ratings of 5,000, 10,000 and 20,000 pounds.

For more information and a free copy of Bulletin 2118 containing complete information on the Strap-All products line from Aeroquip,

Circle 28 on Reader Service Card

### Blohm & Voss Acquires Stake In Australia's Williamstown Shipyard

In a bid to build up to 12 frigates for the Australian and New Zealand navies, the West German shipyard of Blohm & Voss has acquired an estimated \$20.5-million stake in Australia's Melbourne-based Williamstown shipyard.

Blohm & Voss will have a 25 percent share in the Australian Marine Engineering Corporation (AMEC) consortium of shipyards, and will be in a prime position next year to participate in the frigate contract when it is awarded.

The frigates will either be built at yards run by AMEC consortium members or in the naval dockyard in Victoria, once the contract has been awarded.

Your New Bridge . . .

# Easy as 1-2-3



#### RASCAR Radar/ARPA

The most significant advance in radar since the magnetron. Complete touchscreen control. No knobs, switches, buttons. All radar and ARPA functions available at the touch of a finger.

#### ADG Autopilot

From Sperry Marine's 75 years of leadership in ship steering controls comes this versatile, simple-to-operate, completely adaptive new autopilot, designed especially to fit any size bridge.

#### Voyage Management Station

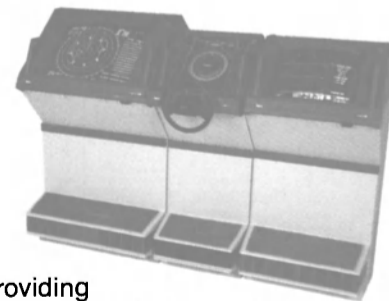
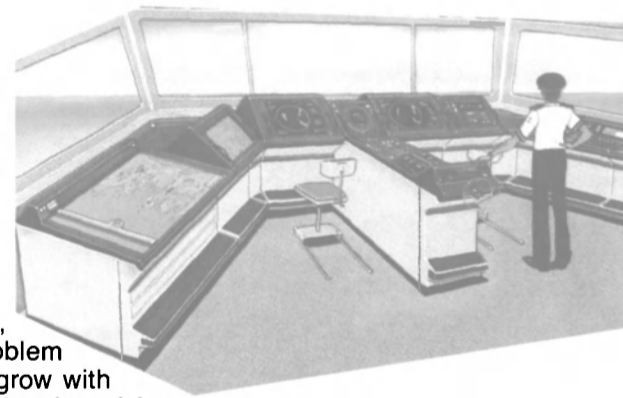
All navigation data, from whatever source, available in one location. A limitless library of electronic charts, radar, navlines, and voyage data, transferable to any bridge module at the touch of a finger.

Always mindful of the mariner's pressing demands, Sperry Marine has developed an efficient new Integrated Bridge. This Integrated Bridge, with RASCAR, already the most talked-about new radar and ARPA, the ADG autopilot, and the Voyage Management Station, all integrated by Sperry Marine's SeaNET advanced Token Ring Network, offers significant new benefits for any vessel.

Now more information is readily available in one location to streamline the bridge officer's job. Moreover, this information is constantly available to home office managers, who can monitor ship's condition and assist in real-time problem solving. And Sperry Marine's Integrated Bridge is ready to grow with your requirements. We've made electrical, aesthetic, and functional provisions to assure your Integrated Bridge is flexible and versatile enough to accept any future modifications.

Your Integrated Bridge can grow with you. At any time we can add new navigation equipment, new communications gear, new weather and engine monitors. And the information from these new equipments is added to data flowing in the Sperry Marine SeaNET.

Whether Newbuild or Retrofit, Sperry Marine is ready to supply your new Integrated Bridge, customized to your exact specifications. Sperry Marine, providing leadership since the beginning of the century, leads the way with the next century's products . . . today!



For further information on this and other Sperry Marine products contact:

**Sperry**  
Marine™

Sperry Marine Inc.  
1070 Seminole Trail  
Charlottesville, VA 22901  
(804) 974-2000

Circle 27E on Reader Service Card

Subsidiary of  
Newport News Shipbuilding  
A Tenneco Company





**Shipyards**

**Cadiz**

Tel.: (34-56) 25 10 00  
Fax: (34-56) 27 83 62  
25 68 28  
Telex: 76021 ASTIL E  
76153 AVEN E

**Sevilla**

Tel.: (34-54) 45 10 11  
Fax: (34-54) 45 76 59  
Telex: 72345 ASTIL E

**Bilbao**

Tel. (34-4) 495 71 50  
Fax: (34-4) 496 49 76  
Telex: 31519 AERS E

**Santander**

Tel.: (34-42) 54 00 50  
Fax: (34-42) 54 00 26  
Telex: 35810 ASSA E

**ASTANO Ferrol**

Tel.: (34-81) 34 07 00  
Fax: (34-81) 34 09 54  
(34-81) 34 32 52  
Telex: 85507 ASTAN E  
82381 ASTAN E

**ASTICAN**

**Canary Islands**

Tel.: (34-28) 27 32 66  
Fax: (34028) 26 48 07  
Telex: 95147 ASVAS E  
96502 YARD E

The Shipbuilders of Spain

Why you should repair (or convert)  
your ships at Astilleros.

We think that you have at least  
four good reasons to choose Spain:

✓ Our strategic allocation.

Spain is the natural crosspoint for all  
major routes linking America, Europe  
and the East, and crude oil shipping  
through the Suez Canal or the Cape  
of Good Hope.

✓ Our technical skills and facilities.  
12 dry docks, 2 floating docks and  
one syncrolift, with capacities up  
to 400.000 d.w.t.

✓ Our conversion experience  
Ask for the facts. Astilleros has  
successfully converted all kinds of  
vessels (we have just delivered  
3 chemical tankers for Gotaas Larsen,  
and our recent contracts include the  
conversion of a 21.000 dwt  
Bulkcarrier into a molten Sulphur  
carrier for Navimin). And Astilleros is a  
well known leader in FPSO and FSU  
and in Internal Blasting and Coating.

✓ A spread of specialized yards.  
Along the long coastline of Spain,  
and covering all tonnages.

✓ And the Spanish weather...  
Last but not least: an excellent  
climate means that work is rarely  
heald up by adverse weather.

As Astilleros offers, also, the best  
price and surprising financial  
packages, don't you think it's high  
time to check on us?

**ASTILLEROS  
ESPAÑOLES**

For further information:

Astilleros Espanoles, S.A.

Padilla, 17

28006 Madrid

Tel. (341) 435 78 40

Télex. 27648 ASTIL-E

Fax. (341) 276 29 56

Circle 184 on Reader Service Card

**MagneTek Consolidates  
Military Business Efforts  
—Literature Available**

MagneTek, Inc., an international leader in electrical equipment manufacturing and related services, has consolidated its military business efforts. The newly formed MagneTek Defense Systems, headquartered in Anaheim, Calif., with a recently opened Washington, D.C.,

office, will integrate operations for all defense-related products and services into one organization. Headquarters for MagneTek Defense Systems will be moving to new facilities in February 1989.

The core of MagneTek Defense Systems is formed by MagneTek ALS. Completing the organization are products and capabilities from other MagneTek companies which have long been leaders in military business, such as MagneTek Louis Allis, MagneTek Jefferson Electric,

and MagneTek Universal Electric. Under the direction of **John R. Scherzi**, MagneTek vice president, marketing and government business, the centralization of diverse activities will offer customers a broad product offering from a single source and unified management of product quality, delivery and support.

For free literature fully detailing MagneTek Defense Systems and its products and services,

Circle 49 on Reader Service Card

**'Greenville Johnny,' New Firm, Provides Wide Range Of Inland Vessel Services**

The two principal owners of Mississippi Marine Corporation, Greenville, Miss., **D. John Nichols** and **T.R. Pittman**, have purchased all assets related to marine repair from Dravo Mechling operations in Port Allen, La. This facility is now being operated as Greenville Johnny of Louisiana, Inc., and is located at the foot of Riverview Drive in Port Allen.

Greenville Johnny, which has approximately 65 employees, provides a wide range of inland marine vessel services, including drydocking, shifting and crane services. The company specializes in cleaning, repairing, and USCG certification of tank barges.

For further information and free literature on the services offered by Greenville Johnny,

Circle 58 on Reader Service Card

**Letter Of Intent  
Signed By SPD  
To Acquire Dyncorp Unit**

SPD Technologies has announced the signing of a letter of intent for the acquisition of the ship repair division of Pac Ord, Inc., a wholly owned subsidiary of Dyncorp.

In announcing the move, SPD president **George M. Gordon** said the addition of Pac Ord's five service and repair facilities will make SPD the leading independent repair specialist of shipboard equipment in the U.S.

Pac Ord, which has facilities in Seattle, Wash., San Diego, Calif., Portland, Ore., Jacksonville, Fla., and Norfolk, Va., has about 200 employees and annual sales of approximately \$12 million.

The unit provides repair and overhaul services for shipboard communications systems, weapons systems, air traffic control systems, sonar, radar and antenna systems, electronic warfare hardware and electrical equipment.

With the acquisition, SPD would be able to provide on-site repair and overhaul facilities at all primary U.S. Navy homeports.

The Pac Ord transaction would mark SPD's second major acquisition since becoming an independent operating company as a result of a management buyout from Gould Inc. in 1987.

The transaction is expected to be consummated shortly, according to **Mr. Gordon**.

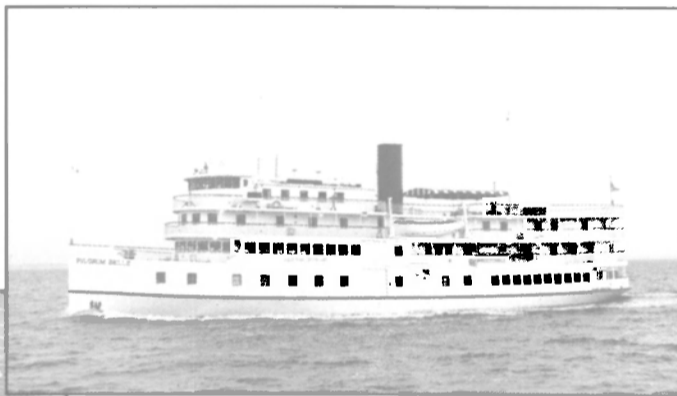
SPD Technologies is an international leader in the design, development and manufacture of advanced electronically controlled electrical protection equipment for military applications and other harsh operating environments. The company has service, repair and overhaul facilities across the U.S. and serves military markets throughout the world.

For free literature detailing the services of SPD,

Circle 82 on Reader Service Card

# INNOVATIVE

At Bender we don't just build boats. We build YOUR boat. Our engineers combine years of experience with one of the most advanced computer design systems in the industry to give you the custom boat that works for you.



# SERIOUS

At Bender we're serious about shipbuilding. Serious about quality. Serious about on-time delivery. Serious about new technology and innovative design. We're serious about building a better boat at a better price.

**BENDER**  
BENDER SHIPBUILDING & REPAIR CO., INC.  
OUR • 70th • YEAR

CONTACT: Art Hahn

P.O. BOX 42 • MOBILE, AL 36601 • (205) 431-8000 • FAX: (205) 432-2260 • TELEX: 505-457

Circle 147 on Reader Service Card



## Haller Appointed Associate Administrator For Ship And Shipbuilding Operations

Maritime Administrator **John Gaughan** recently announced the appointment of **Harlan T. Haller** to the post of Associate Administrator for Shipbuilding and Ship Operations.

Prior to joining MarAd, Mr. **Haller** held a variety of executive positions with American President Lines, Seatrain Corp., and the Bailey Refrigeration Co., where he was president and chief executive officer.

Mr. **Haller** is a graduate of the U.S. Merchant Marine Academy and holds a B.S. degree from the Massachusetts Institute of Technology. He is also a recipient of the Lauren McCready Award, and the Cornell Maritime Award.

## New German Shipping & Shipbuilding Consultancy Firm Formed By Jansen

**Ingo Jansen**, former co-owner of the closed Jansen Werft shipyard, has formed a new shipping and shipbuilding consultancy firm at the site of the Leer yard's former shipping department.

The new company, Ino Schiffahrtsgesellschaft GmbH & Co., KG, will offer services in newbuilding project management, advice and negotiating of orders, financing of ships and material package deals, and planning, organization and management advice for shipyards.

The address of the firm is: Ino Schiffahrtsgesellschaft GmbH & Co., KG, Schmiedestr. 6, D 2950 Leer, West Germany; telephone: (491) 63115; telefax: (491) 65389.

## First Of 39 Hopper Barges Launched At Reactivated Equitable Shipyards

Equitable Shipyards, Inc. has launched the first of 39 coal-carrying hopper barges for the Indiana Michigan Power Company, Ft. Wayne, Inc., signifying the rebirth of the shipyard which had closed since 1985. The 195-foot by 35-foot by 12-foot barge is the first of 15 of its size, which will be followed by twenty-four 175-foot by 26-foot by 11-foot barges.

The nearly \$8-million contract with the Trinity Marine Group, which includes Equitable, is significant because it reflects increased activity in inland waterways transportation, according to **John Dane III**, president of the Trinity Marine Group.

The Equitable/Madisonville shipyard (near New Orleans) was opened in the early 1940s. It produced approximately 7,000 barges and boats before its closure with the decline in offshore energy industries and inland waterway transportation. At its peak, approximately 600

persons were employed at the facility. Today, 171 people work at the shipyard.

**Edward L. Shearer**, president of Shearer and Assoc., the New Orleans naval architecture firm which designed the barges, said, "You are going to see more and more orders (for new barge construction) because the current fleet is eight to 10 years old and not economically useful due to repair and maintenance expense."

Mr. **Dane** said the Madisonville shipyard was reactivated because it was designed to produce barges efficiently and has the ideal equipment for barge construction, including special jigs; a 1,500-ton press; access to plasma arc metal cutting; panel line fabrication; and a hydraulically operated tipping launch system. At its peak, the facility can produce two hopper barges per day.

The Trinity Marine Group is owned by Trinity Industries, Inc.,

Dallas, Texas. It includes the Equitable Shipyards Inc. facilities at Madisonville and New Orleans, La., Halter Marine Inc., Moss Point, Miss., and Lockport, La., Moss Point Marine Inc. in Escatawpa, Miss., Aluminum Boats, Crown Point, La., and Gretna Machine and Iron Works Inc., Harvey, La.

For more information and free literature on the facilities and capabilities of Equitable Shipyards, Circle 59 on Reader Service Card

# CUMMINS MARINE



### CUMMINS DIESELS ...

### SETTING THE STANDARD FOR TODAY'S PASSENGER VESSEL POWER

- B Series — 4 and 6 cylinders — 76 to 250 hp
- 855 Series — 6 cylinders — 195 to 400 hp
- KT19 Series — 6 cylinders — 365 to 510 hp
- B series — Gen drives/Gen sets — 37 to 72 kW

Recent passenger vessels powered by Cummins quiet, dependable, fuel efficient diesels include:

Southern Belle  
Teche Queen  
Valley Voyager  
Valley Queen  
Vagabond  
Tahoe Queen  
Columbia Gorge  
Missouri River Queen  
Dutch Apple II  
Dixie Queen II  
Empress  
Mississippi Belle II

River Queen  
Rosie O'Shea  
Starlite Princess  
Fox River Queen  
Twilight  
Bay Lady  
The Pride of Rainy Lake  
West Virginia Belle  
Jean Nicolet  
Chicago Princess II  
Vista King  
Star of Louisville

And the "Caribe Tide," one of Maritime Reporter's most outstanding vessels of 1988.

Information: **Cummins Engine Company, Inc.**  
MC 60011  
Box 3005  
Columbus, IN 47202-3005



THE NEW WAVE IN DIESEL PERFORMANCE

## Karl Kieninger Joins Krupp Atlas Elektronik



Karl W. Kieninger

**Karl W. Kieninger**, former Chief of the Hydrographic Survey Branch, National Ocean Service at Norfolk, Va., has been appointed manager for marine systems of Krupp Atlas Elektronik's U.S. Division based at Clark, N.J. He assumes responsibility for the marketing of the company's hydrographic survey systems throughout North America.

Mr. Kieninger served with the

U.S. Navy for four years before transferring to the National Oceanic and Atmospheric Administration, from where he recently retired. His duties at NOAA included service aboard seven oceanographic and research vessels, three of which he commanded.

## \$12-Million Arco Alaska Module Contract Won By Seattle Union Contractor

The \$12-million Arco Alaska module construction contract has been won by union contractor Wright Schuchart Harbor Co. of Seattle, Wash. The project is already under way, since the modules are to be completed by July and loaded onto barges and sent to Alaska's Prudhoe Bay oil field.

The modules, which are being built at Swan Island, will be used for processing water unavoidably pumped out of the field along with oil. The modules weigh 300 to 1,500 tons each and will handle about 250,000 barrels of water a day.

## Crowley Maritime Names Sean G. Burke President, Atlantic Division

Crowley Maritime Corporation, a diversified marine transportation firm with worldwide operations, has named **Sean G. Burke** as president, Atlantic Division, according to a recent announcement by **Leo L. Collar**, Crowley's president and chief operating officer.

Mr. Burke was most recently senior vice president, legal and insurance, for Crowley Marine. In his new position as president of Crowley's Atlantic Division, he will be responsible for major domestic offshore and international liner services provided by several Crowley companies, including American Transport Lines (AmTrans), Crowley Caribbean Transport (CCT), and Trailer Marine Transport (TMT). The services offered by these three companies extend between the U.S. and the Caribbean, including Puerto Rico, Central and South America, Europe and the Far

East. In addition, Crowley's Atlantic Division provides contract transportation anywhere in the world, and ship assist, salvage and harbor services through Crowley Towing and Transportation.

## Techmatics Receives \$15-Million Navy Pact For Service Support

Techmatics, Inc., Arlington, Va., was recently awarded a five-year, \$15-million contract by the Naval Sea Systems Command to provide service support to the MK 41 Vertical Launching System office.

Under the contract, the largest in the company's history, the firm will provide engineering development and systems integration, production management, integrated logistics support, and management information system development and maintenance.

# RELIABLE, EFFICIENT, WRIGHT-AUSTIN GAS/LIQUID SEPARATORS



The quality, and performance of these gas/liquid separators has earned them "SPECIFIED" status on practically every Navy combatant vessel since WW 1.

- 99% efficiency
- We meet or exceed ABS, USCG, ASME and Naval specs.
- Designed for FV to High Pressure on air, gas or steam
- Highest efficiency over entire flow range
- They're self-cleaning, no maintenance
- Simple, easy to install

Write for Bulletin 811



MADE IN U.S.A.



## WRIGHT-AUSTIN COMPANY

3250 Franklin St., Detroit, Michigan 48207  
Phone (313) 259-1925 FAX (313) 259-1962

Circle 314 on Reader Service Card

## 1989 AWS Welding Show

WASHINGTON,  
D.C.

April 4-6



◆ The AWS Welding Show offers you the opportunity to find out what's happening in the welding industry. Meet with your peers. Review thousands of cost-saving products and services. Learn about the latest hi-tech developments. View live equipment demonstrations.

### And More

◆ Choose from a complete agenda of practical seminars and technical sessions to stay abreast of the advances in welding important to you.

### Plus

◆ A special pre-convention, in-depth conference March 29-31, 1989, on "Advanced Joining Technologies for New Mate-

rials" focusing on the joining of polymers, ceramics, advanced metals and composites.

### Engineers • Designers Manufacturers • Educators

◆ The 70th annual convention of the American Welding Society. It's the nation's largest Welding Show each year. And it's in the nation's capital at Cherry Blossom time. Plan now to make the Washington scene. Write or call today.

Send me a 1989 AWS Convention and Welding Show program with registration and hotel forms

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Area code, Business Telephone \_\_\_\_\_

Special! Advanced registration saves you time and money. Call or write before February 15, 1989

Check here for more facts on joining conference



### American Welding Society

550 N.W. LeJeune Rd., P.O. Box 551040,  
Miami, Florida 33155, (305) 443-9353,  
1 (800) 443-9353 in Fla. 1 (800) 423-9353  
Telefax (305) 443-7559, Telex AMWELD SOC 51-9245

Circle 129 on Reader Service Card

Maritime Reporter/Engineering News

**E.H. Wachs Introduces  
New Model HPS-15  
Hydrostatic Power Supply**

The E.H. Wachs Company of Wheeling, Ill., recently introduced its new Model HPS-15, Hydrostatic Power Supply which, according to the company, offers all the advantages of larger stationary hydraulic power stations yet is portable, lightweight, and designed for the most demanding needs.

The HPS-15 is completely self-contained in a compact package to ensure ease of movement in tight places and minimize vulnerability to component damage. The power unit is also lightweight compared to similar units. Its weight advantage, convenient handles and detachable caster cart make it possible for two people to effectively maneuver the unit.

The unit is well suited for power plant pipe cutting and end preparation work where variable output is required to power a wide range of hydraulic tools and equipment. It is also the right choice for fabrication shops and isolated field sites where a smooth, continuous power source is needed.

For free literature giving complete information on the Model HPS-15 from E.H. Wachs,

Circle 26 on Reader Service Card

**Wartsila Launches  
Baltic Cruise Ferry  
For Viking Line**

The Turku Shipyard of Finnish shipbuilder Wartsila Marine Industries, Inc., recently launched the second of five Baltic cruise ferries for operation by Viking Line on routes between Finland and Sweden.

Christened the M/S Athena, the 580-foot cruise ferry was named by **Marianne Myrsten**, daughter of Rederi Ab Slite president of committee **Lars Myrsten**. The christening ceremony for the Athena also included the initial plate cutting for her sister ship, which is expected to be delivered in the spring of 1990.

The Athena, with 573 cabins and 1,742 berths, will be able to carry about 2,200 passengers. She will have a capacity for 620 cars or 62 trucks and 145 cars.

The main particulars of the Athena include a breadth of 95 feet and draft of 19.6 feet. She will be powered by four flexible-mounted 7,965-hp Sulzer-Wartsila 9ZAL40S diesel engines to speeds of 21 knots. Auxiliary power will be supplied by four 2,250-kw Wartsila 6R32D diesel generator sets.

The three new luxury ferries being built by Wartsila Marine, the other two were ordered from Brodosplit of Yugoslavia, will all be fitted with the advanced navigation and command systems NACOS 25 from Krupp Atlas Elektronik GmbH. NACOS 25 was developed to ensure safe navigation of these ships on their routes between Stockholm and Helsinki. In particular the skerries between Stockholm and

Turku are among the most dangerous shipping waters in the world. NACOS 25 will offer the vessel's precise navigation in these difficult waters.

The M/S Athena is intended to operate in the 24-hour cruise traffic on the route between Stockholm and Mariehamn beginning in March or April of next year. She will offer passengers many amenities including 70 luxuriously appointed cabins,

an a la carte restaurant, a buffet restaurant, dance bar, piano bar, lounges, sauna, fitness center and disco.

The building of the Athena marks a milestone for Wartsila, which is utilizing a new production unit procedure for the first time. Wartsila Marine divided its shipyard into production units, with each being responsible for its returns. This has enabled the shipbuilder to better

utilize the special know-how in the different branches.

For free literature detailing the shipbuilding services of Wartsila Marine,

Circle 80 on Reader Service Card

For free literature detailing the features of NACOS 25 from Krupp Atlas Elektronik,

Circle 81 on Reader Service Card

# BUILT BY BLOUNT

## Another busy year



**SPIRIT OF CHICAGO** April 1988  
192' x 35' x 6' Steel Dinner Boat  
Owner: Spirit of Chicago Trust  
Norfolk, VA



**LA PINTA** June 1988  
92' x 22' x 5' Aluminum Passenger Ferry  
Owner: Puerto Rico Ports Authority  
San Juan, Puerto Rico



**ALEXANDRIA BELLE** July 1988  
87' x 32' x 8' Steel Dinner Boat  
Owner: Uncle Sam Boat Tours  
Thousand Islands, NY

**STOP BY OUR BOOTH  
AT THE  
NAPVO NATIONAL CONVENTION IN  
SAN DIEGO  
JANUARY 7-10**

Since 1949, the words "Blount built" have stood for quality marine design and construction. And every year we add to that reputation, building proud new vessels from elegant dinner boats to passenger/auto ferries to super-fast, low-wake, HITECH® commuter boats.

For innovative solutions to your transportation needs, make sure your next boat is "Blount built."

Send for our Buyer's Guide  
or call (404) 245-8300.

**Blount**  
Marine Corporation

461 Water Street, Warren, RI 02885

Circle 154 on Reader Service Card

## Schichau Seebeckwerft Delivers Gas Carrier

The Geeste yard of Schichau Seebeckwerft AG recently delivered the ethylene gas carrier Etagas to Slo-man Neptun, Bremen, West Germany.

The Etagas has an overall length of 439-1/2 feet, molded breadth of 61 feet, draft of 27 feet and dead-

weight tonnage of 8,500 tons. Her propulsion equipment consists of a single MAN B&W Diesel 7L52/55B diesel engine, which develops 6,000 kw (8,046 hp) at 450 rpm. The rest of the propulsion package consists of Renk-Tacke HSA-1000 C reduction gearing and a Liaaen EG 135 variable pitch propeller. Auxiliary power is provided by three SWDiesel 6FHD 240 diesel engine generator sets, which supply a total of 2,325 kw at 720 rpm.

Classed by Germanischer Lloyd, GL 100 A4 E2 Liquefied Gas Tanker Type 2g + MC E2 AUT INERT, the Etagas can transport liquefied gases such as ethylene, VCM and PO in three cargo tanks with a total capacity of 8,327 m<sup>3</sup>. The sophisticated gas carry can carry products to as low as -104 degrees C.

She will have a service speed of about 16 knots and be manned by a crew of 21.

For free literature detailing the

shipbuilding services of Schichau Seebeckwerft,

Circle 50 on Reader Service Card

## Gems Express Service Introduces Two New Annunciator Designs

Two newly designed annunciators, one with a digital readout and the other with a LED display, are being introduced in the latest edition of the Gems Express Service Catalog. These annunciators can monitor any normally open or normally closed dry switch closure, including switches for level, flow or pressure. They may also be used with a multiple switch sensor such as a Gems multi-station liquid level switch.

One annunciator is a Gems Cube featuring a 3-1/4-inch square shaped face and a four-digit liquid crystal display. The Gems mini-sized annunciator panel, designated as the "TAP-5," features LEDs that light up when their connected switches close.

The latest edition of the Gems Service Catalog gives full details. For a free copy,

Circle 22 on Reader Service Card

## Pacific Ship Awarded Repair Contracts Totaling \$5 Million

Pacific Ship Repair & Fabrication, Inc., a San Diego ship repair company, has been awarded two contracts for hull, mechanical and electrical repairs aboard the aircraft carrier USS Independence (CV-62). These contracts total about \$5 million and will run through March 1989. Pacific Ship Repair & Fabrication, Inc., also has approximately \$2 million in various repairs in progress from the Carrier Maintenance Package awarded earlier this year.

## B + H Ocean Carriers Takes Possession Of 9th Ship In \$50,255,000 Total Outlay

B + H Ocean Carriers Ltd. recently announced that it has taken possession of the Calga, a 35,000-dwt, \$6,609,000 bulkcarrier. This brings to nine the number of ships operating under the B + H Ocean Carrier banner. Total outlay for all nine ships was reported to be about \$50,255,000.

B + H Ocean Carriers Ltd. was formed in early 1988 and was brought public recently when it issued four million shares of common stock. Net proceeds of approximately \$55 million from the underwriting are being used to finance the purchase of eight bulkcarriers and six product tankers. The company has also obtained from a banking syndicate a \$35-million line of credit to facilitate these purchases.

Circle 300 on Reader Service Card →

## No ship is too small...

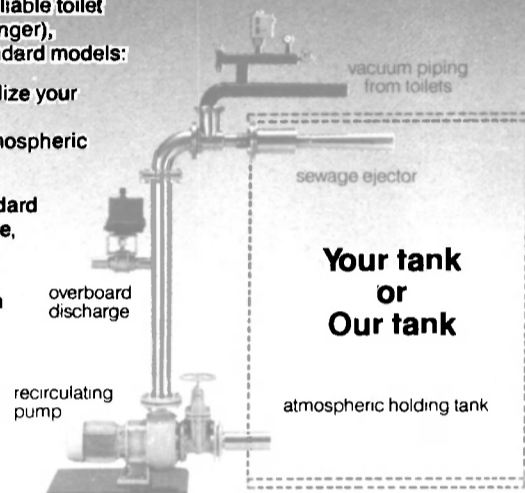
## to install an EVAC vacuum toilet system.

If you need an economical and reliable toilet system for your ship (50 feet or longer), choose EVAC. EVAC has two standard models:

- Model 0111 — allows you to utilize your ship's hull tank, and;
- Model 1111 — includes our atmospheric holding tank.

Both models have the same standard design and components; therefore, you do not pay for special design engineering. You do receive high quality components with a proven history of reliability.

EVAC vacuum toilet systems already exist in over 2,000 ships worldwide. Model 0111 and Model 1111, with one or two pumps, are available from stock to expedite delivery.



### Benefits for both models:

- low volume fresh water flush toilet (2 pints/flush)...  
10 man crew produces 15 gals. of sewage/day
- small diameter piping...  
1-1/2" and 2"
- piping layout flexibility...  
with vertical lift
- reduced holding tank size...  
80% smaller
- toilet vents eliminated

### ENVIROVAC INC.

1260 Turret Drive, Rockford, IL 61111 U.S.A.  
Telephone 815/654-8300, FAX 815/654-8306, Telex 257415  
Toll Free (USA & Canada) 800/435-6951 (ex. IL)

**EVAC** ENVIROVAC SYSTEMS

Circle 222 on Reader Service Card

## Move your career full steam ahead

Earn a master's degree in maritime management.

Our 45-credit-hour program in management was created especially for sea-going officers and middle managers ashore who wish to enhance their management skills and advancement opportunities.

Courses are scheduled in one-month modules to allow participants to carry on professional employment responsibilities while mastering a broad range of functional and managerial skills.

For more information, please contact the Department of Graduate Studies & Research, Maine Maritime Academy, Castine, Maine 04420 USA; 207-326-4311.

**MAINE  
Maritime  
Academy**

THE OCEAN-ORIENTED COLLEGE  
OF ENGINEERING, TRANSPORTATION, AND MANAGEMENT

Circle 263 on Reader Service Card

in 1989

## U.S. COAST GUARD RULES FOR CHEMICAL DRUG AND ALCOHOL TESTING OF COMMERCIAL VESSEL PERSONNEL . . .

. . . can affect 120,000 commercial vessel personnel on the 19,000 commercial vessels which are operated by Coast Guard licensed personnel . . .

### EMPLOYEE ASSISTANCE

**PERSONNEL DIRECTORS**—Learn more about individual private and confidential, as well as group out-patient treatment by experienced professionals for chemical substance abuse/alcoholism dependency.

### TREATMENT MODES

- CONFIDENTIAL INDIVIDUAL THERAPY
- GROUP COUNSELING
- SELF-HELP PROGRAMS
- EDUCATIONAL PROGRAMS
- INTENSIVE OUT-PATIENT CARE PROGRAMS

For full details, telephone or write in complete confidence

### CENTRAL RECOVERY SYSTEMS

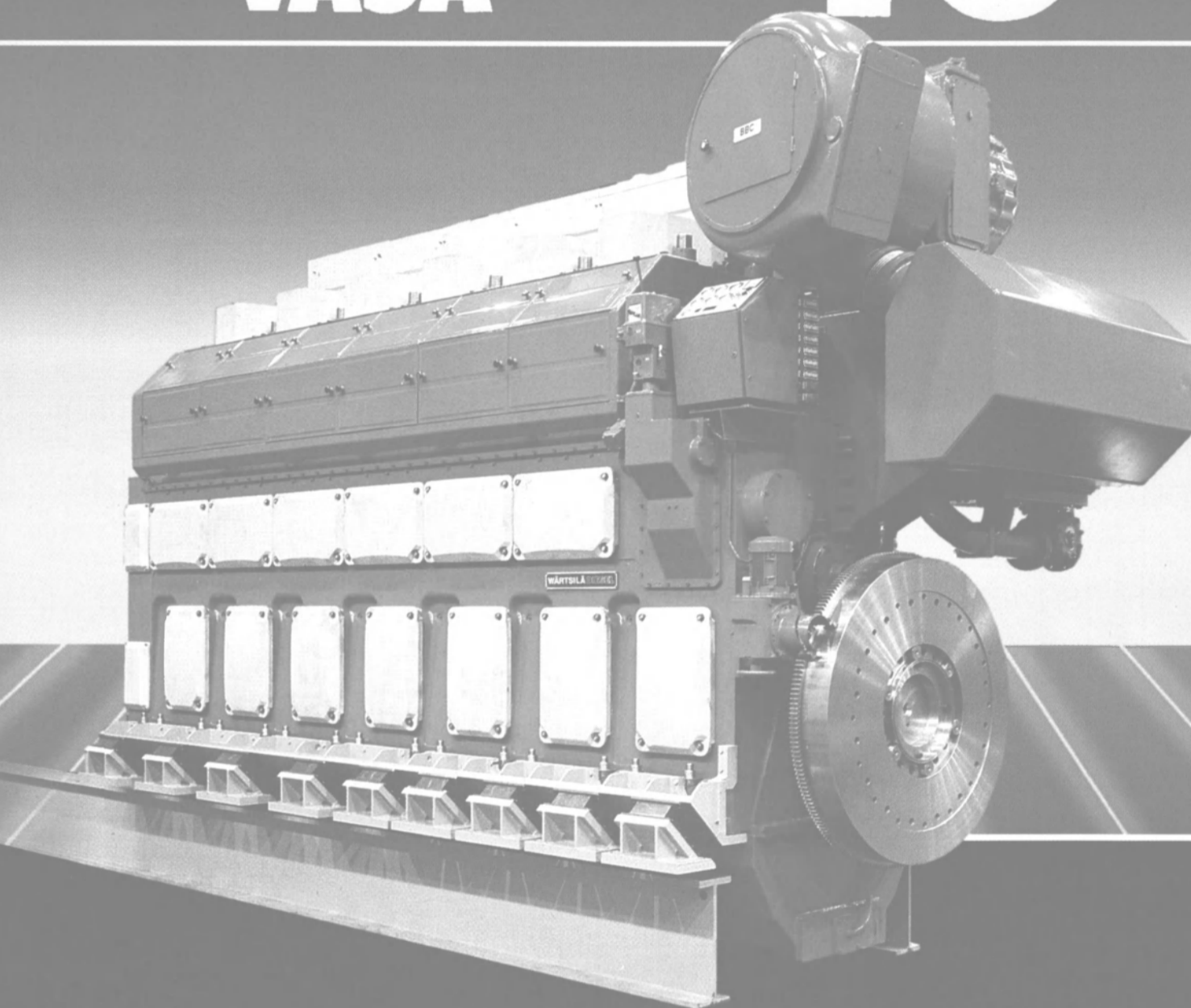
165 Froehlich Farm Blvd.  
Woodbury, NY 11797  
(516) 921-4404

FULLY LICENSED BY THE STATE OF NEW YORK

Circle 183 on Reader Service Card

# THE REALLY RELIABLE ENGINE

## WÄRTSILÄ VASA 46



- Thick-Pad bearing technology is the revolutionary concept for bearing reliability.

- Twin injection ensures the lowest fuel consumption and reliable combustion on really heavy fuels.

- SwirlEx turbo-charging provides for reliable low-load performance and low fuel consumption.

- Anti-Shake technology incorporates rigid engine structure, full balancing and an option for resilient mounting. All make for onboard comfort.

## WÄRTSILÄ DIESEL

Production plants in Finland, Sweden, Norway, France, Spain and Singapore

Wartsila Diesel, Inc.  
81 Holly Hill Lane - 2nd Floor  
Greenwich, Connecticut 06830  
Tel. (203) 661-4132  
Tlx. 147074 wdi ct  
Telecopier (203) 661-4174

Wartsila Diesel, Inc.  
5132 Taravella Road,  
Marrero (New Orleans), LA 70072  
Tel. (504) 341-7201  
Tlx. 810-951-6386 wartsila marr  
Telecopier (504) 341-0426

## 1989 SNAME Meeting To Feature Diversified Technical Papers— Small Craft To Icebreakers, CAD/CAM To Instrumentation

In a continuing effort to be responsive to the opinions of its membership, the Society of Naval Architects and Marine Engineers (SNAME) is planning a more diversified technical program for its 1989 Annual Meeting to be held in New York in November.

Through the efforts of the papers committee chaired by **Jack Abbott**, the Society solicited papers that would be particularly broad in scope, current in content and tied in to the maritime-related activities of each of SNAME's 17 local sections.

The overwhelming response has provided the papers committee with an opportunity to be creative in the scheduling of the technical programs. Mini-symposia are being planned for Thursday afternoon sessions, with subject matter that will include icebreaker technology, propulsion plant instrumentation or various phases of the commercial

small craft industry. Further, by reducing the traditional 90-minute technical paper sessions to 60 minutes, more diversified subject matter can be offered over the two-day program.

In addition to the theme-oriented mini-symposia, other areas of interest being considered include successful applications of CAD/CAM, new methods to reduce propeller vibration excitation on ships, the "whys" of the blistering encountered on the USS Midway, vapor collection systems for coastal and river barges and papers from Soviet presenters.

Anyone wishing to attend or exhibit at the 1989 SNAME Annual Meeting can obtain complete details from **Francis M. Cagliari**, deputy executive director, Society of Naval Architects and Marine Engineers, 601 Pavonia Avenue, Jersey City, N.J. 07306; telephone: (201) 798-4800.

### Lisnave Wins Contract For Re-Delivery Repair Operation On VLCC

A contract for the re-delivery repair operation on the 269,349-ton deadweight tanker British Norness has been won by the Portuguese shipyard Lisnave. The U.K.-registered tanker, which will be renamed Happy Norness, has been on bare-boat charter with BP for the last 15

years.

P&O Bulk Shipping, the owners, plan to bare-boat the tanker to Norman International, Norway, for a three-year contract with an option to buy at \$9.25 million after two years or \$6 million after three years.

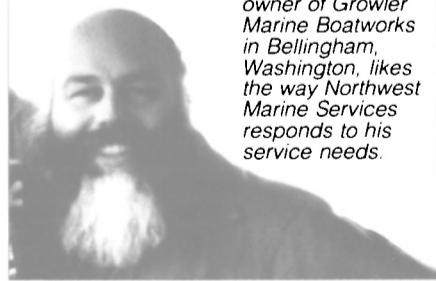
For free literature giving full information on the facilities and capabilities of Lisnave,

Circle 27 on Reader Service Card

## Northwest Marine Services? **OF COURSE!**

*"They went out of their way to make sure the whole system performed the way it's capable of performing. Anybody can sell you something, but I think their follow-up service was tremendous."*

*Gene Kester, owner of Growler Marine Boatworks in Bellingham, Washington, likes the way Northwest Marine Services responds to his service needs.*



Contact Northwest Marine Services for sales and service of these fine products:



(Sole U.S. service representative)  
• Controllable Pitch Propellers • Tunnel Thrusters  
• Compass Thrusters • Electronic Remote Control Systems  
• Integrated Maneuvering Systems



• High Thrust Marine Jet Propulsion Units



• Marine Cranes: Knuckle Boom, Straight Boom, Extendable Boom • Winches: All types, Capstans, Deck Fittings



• Mechanical Control Systems • Single lever and two lever multiple station systems



• Marine Controls—  
Pneumatic, Electronic, Mechanical

Authorized Distributors

**NORTHWEST MARINE SERVICES**  
*Responsive Worldwide*

6452 South 144th St. Tukwila, WA 98168 (206) 246-4204 TOLL FREE: 1-800-544-7982

Circle 169 on Reader Service Card

## Trinity Marine Group Awarded \$5-Million Contract To Build Two Washington State Ferries

The Trinity Marine Group has been awarded a \$5-million contract to build two high-speed 112-foot, 250-passenger ferries for the Washington State Department of Transportation.

The all-aluminum vessels are based on Trinity's proven monohulled designs that have successfully operated in sea and weather conditions worldwide.

The ferries, now under construction at Equitable Shipyards, Inc. in New Orleans, La., are both scheduled to be delivered in the summer of 1989 and begin passenger service shortly thereafter.

Upon completion of a new passenger ferry terminal at Vashon Island, ferry officials will inaugurate a passenger-only service between Vashon Island and downtown Seattle. Bremerton residents will also benefit with a high-speed commuter of their own between Bremerton and Seattle. In addition to commuter-hour service, both vessels will continue to operate their daily midday schedules as well as additional evening service to Bremerton and Vashon Island.

Each of the new high-speed ferries, with beams of 25 feet and drafts of 7 feet, will be powered by four Detroit Diesel 16V92TA diesel engines rated at 960 bhp at 2,100 rpm coupled to four ZF reverse reduction gears with a ratio of 2.5:1. They will provide a cruising speed of 25 knots under normal conditions at full load displacement.

The ferries feature two enclosed decks providing excellent visibility and accommodations for the 250 commuter passengers.

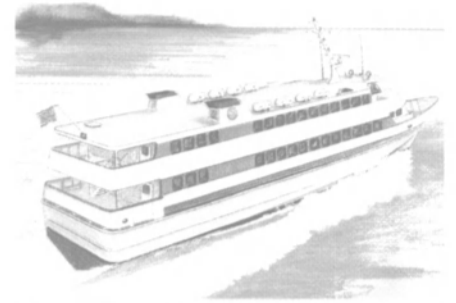
A Ruud air-conditioning system with two separate water-cooled units operating in a split system arrangement will add to passenger comfort.

The pilothouse and wing stations feature a full complement of electronic communications and navigation equipment including a Cetek Benmar autopilot; Danforth Constellation compass; Corsair dual trumpet air horn; Furuno 151 radar; Icom VHF radio; ITT Makay PA system; Alphone intercom system; and a Henschel sound-powered telephone.

The ferries will be equipped with a three-station hydraulic steering system, pneumatic engine controls mounted in the pilothouse and each bridge wing, and a Murphy engine alarm panel installed in the pilot-house control console.

Electrical power will be supplied by two 60-kw generators driven by two Detroit Diesel 4-71 diesel engines.

The boats will be built to U.S. Coast Guard requirements of subchapter "T", and certified under 100 gross tons. They will also be built to American Bureau of Shipping standards and will conform to Washington State and federal handicapped accessibility requirements.



Shown above is an artist's conception of one of the two Detroit Diesel-powered Washington State ferries being built at Trinity Marine Group's Equitable Shipyards in New Orleans.

### WASHINGTON STATE FERRIES Equipment List

Main engines (4)	Detroit Diesel
Reverse reduction gears (4)	ZF
Generators (2)	Detroit Diesel
Propeller shafts	Aquamet
Propellers (4)	Nibral
Rudder stocks	Aquamet
Fuel filters	Racor
Tachometer	Murphy
Steering system	Hydraulic
Engine controls	Pneumatic
Engine alarm system	Murphy
Bilge and ballast pumps	Jabsco
Fuel water separator	Halter
Pressure set	Myers
Air conditioning	Ruud
Navigation & search lights	Perko/Aqua Signal
Flood light	Hubbel
Loudhailer and PA system	ITT McKay
VHF	Icom
VHF antenna	Shakespeare
Radar	Furuno
Magnetic compass	Danforth
Rudder angle indicator	VDO
Life rafts	Switlik
Horn	Corsair

Equitable Shipyards, Inc., builder of the ferries, is a part of Trinity Marine Group (owned by Trinity Industries, Inc. of Dallas, Texas) which operates a total of six shipyards.

For free literature giving complete information on the facilities and capabilities of Trinity Marine Group,

Circle 52 on Reader Service Card

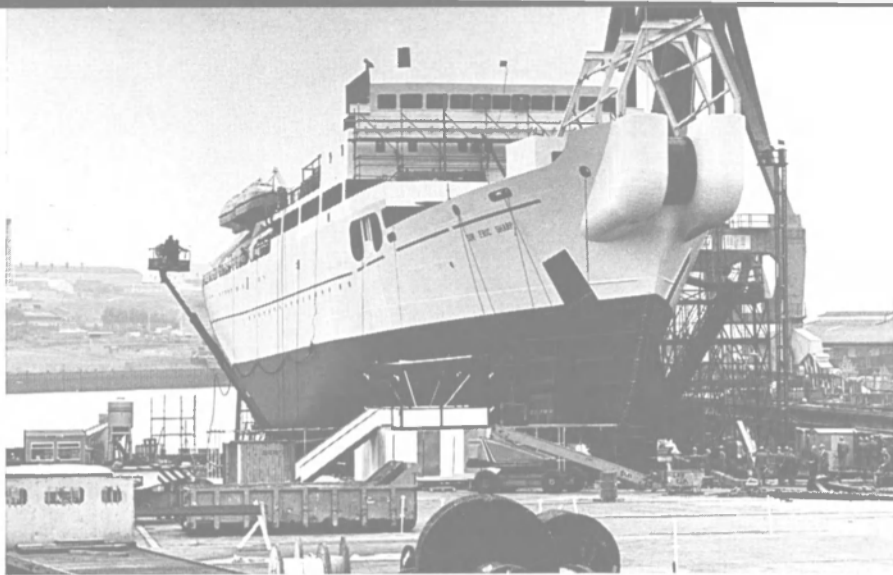
### TeamTec Offers Free New Literature On Golar Marine Incinerators

TeamTec A/S of Gjeving, Norway, produce Golar marine incinerators which are approved by all major classification societies and are now installed on more than 1,000 ships worldwide.

The Golar marine incinerator systems offer compact design and easy installation, efficient, economical operation and maintenance, and worldwide service and spares.

For free literature giving complete details on Golar incinerators from TeamTec,

Circle 33 on Reader Service Card



The U.K. shipyard Swan Hunter recently launched one of the world's most sophisticated cableships, the 377-foot Sir Eric Sharp.

## Sophisticated Cableship Launched At Swan Hunter's Wallsend Yard

One of the world's most modern and sophisticated cableships, the \$49-million Sir Eric Sharp, was recently launched at Swan Hunter's Wallsend Yard, only 14 months after the order was placed by Cable and Wireless (Marine) Ltd. (CWM).

Designed on computer, with the construction aligned by laser, the 377-foot-long Sir Eric Sharp is one of the most technologically advanced cableships afloat. When commissioned in spring 1989, the new vessel will take up station in Bermuda to provide CWM's new Atlantic Cable Maintenance Service in conjunction with the Mercury, another of CWM's cableships.

The two vessels will share maintenance responsibility for the PTAT system, which will be the first privately funded trans-Atlantic fiber optic telecommunications cable. The PTAT-1 will be jointly owned by

Cable and Wireless and its American partner and is scheduled to enter service in mid-1989.

The 6,133-grt Sir Eric Sharp is the first cableship ever designed with a permanent integral remotely operated vehicle (ROV) for buried cable maintenance and repair duties. The ROV Cirrus will be able to perform a variety of complex cable repair and maintenance tasks. Aside from the hydraulic thrusters which propel the craft, it can also be fitted with tracks enabling it to crawl along the ocean floor.

The Sir Eric Sharp has a breadth of 59 feet, depth of 33 feet and full load draft of 20.6 feet. Her propulsion equipment was provided by GEC Electrical Projects Ltd. The propulsion package consists of a Ruston main diesel engine fitted to a GEC Machines Ltd. generator with GEC Machines Ltd. propulsion motors. Auxiliary power is supplied

by an NEI Allen auxiliary engine driving a GEC Machines generator. Hill Graham Controls Ltd. supplied propulsion motor converters.

For maneuverability, the Sir Eric Sharp is fitted with bow and stern thrusters supplied by White Gill-United Technologies Elliott, Ltd., driven by GEC Machines thruster motors.

The vessel has full satellite communications and navigation facilities and is equipped with an advanced dynamic positioning system which enables it to automatically maintain a fixed position relative to its remotely controlled submersible on the seabed.

For free literature detailing the shipbuilding facilities of Swan Hunter,

Circle 39 on Reader Service Card

## Sohio Oil, Subsidiary Of BP America, Makes West Coast Acquisitions

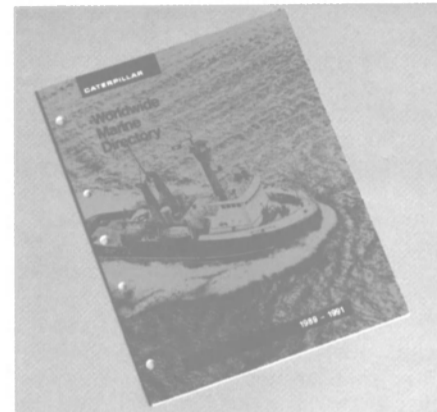
BP America recently announced that its subsidiary, Sohio Oil Company, has agreed to acquire a West Coast refinery and marketing assets from Mobil Oil. The action marks the company's first move to the West Coast as a refiner and marketer.

As part of the transaction, Sohio Oil is purchasing Mobil's 79,000 barrel-per-day refinery in Ferndale, Wash., and Mobil's approximate 30-percent ownership in the Olympic Pipe Line Company for \$152.5 million.

Separately, Sohio Oil and Mobil have also agreed to an exchange of marketing assets in which Sohio Oil will acquire four product terminals and Mobil's owned and leased stations in Washington, Oregon, and northern California. Sohio Oil will

offer supply contracts to Mobil dealers and distributors in those areas. In exchange, Mobil will obtain Sohio Oil's company-operated BP and Gibbs stations in the Northeast, Gas-n-Go outlets in Michigan, Gulf stations in Orlando and the west coast of Florida, and a product terminal in Tampa. The exchange is expected to be completed during the second quarter of 1989.

## New Caterpillar Marine Service Directory Available



Caterpillar's new 104-page Worldwide Marine Directory is divided by country and lists addresses, phone numbers, business hours, support services provided, terms of payment, etc.

Caterpillar has published a new, worldwide marine directory that provides listings for more than 640 Caterpillar marine parts and service locations throughout the world.

Directory information includes service locations, dealer names, addresses, phone numbers, business hours, engine models serviced, and more.

To obtain a free copy of the Caterpillar Worldwide Marine Directory,

Circle 53 on Reader Service Card

### SIR ERIC SHARP Equipment List

Main engine	Ruston
Generator engine	GEC Machines
Auxiliary engine	NEI Allen
Auxiliary generator	GEC Machines
Propulsion motors	GEC Machines
Propulsion motor converters	Hill Graham Controls
Bow & stern thrusters	White Gill
Thruster motors	GEC Machines
Thruster motor converters	Hill Graham Controls
Main & auxiliary diesel generator controls	Regulator Europa
Propulsion motor controls	GEC Electrical
Machinery alarm & monitoring	CSI
Navigation system	Racal Marine
Radar	Kelvin Hughes
Autopilot	Racal Marine
SatNav	SG Brown
Gyrocompass	SG Brown
Shallow water echo sounder	Marconi
Watchkeeper receiver	Marconi
Direction finder	Marconi
Deep water general purpose echo sounder	Honeywell
Deep water survey echo sounder	Ferranti ORE
ROV tracking	Simrad Albatross
Auto exchange phone system	Grundy
PA/intercom	Marconi
Radio/TV aerial	Marconi
Radio system	Marconi
VHF telephone	Marconi
SatCom system	EB Communications
Cable handling system	Dowty Bolton Paul
ROV	Slingsby Engineering

## THE MOST EFFECTIVE WAY TO COMPLY WITH THE LATEST ENFORCED MARPOL 73/78 REGULATIONS.



**ATLAS MAXI 25 S is the complete solid waste disposal unit, equipped with all the automatic regulating and safety devices which are necessary for perfect functioning year after year.**

ATLAS MAXI marine incinerators insure the most economical disposal of solid waste onboard ship.

VESTA incinerators come in different sizes which are capable of handling sludge oil and solid waste of ships ranging from smaller vessels to passenger liners.

The incinerators can also be delivered as a fully containerized unit, complete with all necessary connections and ready for operation.

Sylvestor-Hvid

27 Skudehavnsvej, DK-2100 Copenhagen, Denmark Tel.: +45 1 29 12 66, Telex: 19 730, Telefax: +45 1 29 60 90

Circle 164 on Reader Service Card

## Service Marine—A Full Service Yard For The Passenger Vessel Market

### Louisiana Yard Designs, Engineers & Constructs Variety Of Sophisticated Excursion Boats

Based in Morgan City, Louisiana, Service Marine Industries, Inc., is a complete yard that offers vessel owners a wide range of custom design, engineering, construction and interior decorating services to meet the needs of a particular operation.

Incorporated in December 1985, Service Marine Industries has rapidly built a reputation for quality workmanship and on-time delivery.

"Quality workmanship is one of our principles," said **Tom R. Hensley**, president of Service Marine Industries. "We stand behind our products 100 percent and we always do what we say we'll do," he added.

One shining example of Service Marine's workmanship is the 600-passenger dinner/cruise boat *Annabel Lee*, a replica paddlewheeler built for Heritage Cruise Lines, Richmond, Va.

Mr. Hensley called the *Annabel Lee* "a 90-day miracle," because that's how long the vessel took to construct. "We always deliver on or ahead of schedule," he said.

Although she is powered by a pair of rebuilt Detroit Diesel 8V-92 diesel engines rated at 310 hp at 1,800 rpm, the *Annabel Lee*'s charm stems from her 19th century paddlewheeler appearance. She features two fully enclosed decks and a partially covered open air top deck called the "Texas Deck." Fully carpeted and air conditioned, the *Annabel Lee* has an overall length of 108 feet, beam of 34 feet and draft of 3 feet 9 inches. She operates regularly on the James River, making 12 scheduled cruises per week, as well as special charters.

The enclosed decks of the *Annabel Lee* are accentuated by large arched picture windows which provide passengers with an excellent view of the scenery along the river. "The arched tops may be a small touch, but they complement the rest of the boat's design very well," said Mr. Hensley.

Naval architects and marine engi-

neers DeJong & Lebet, Inc., Jacksonville, Fla., who provided stability and structural engineering for the *Annabel Lee* and the *Spirit of Norfolk*, which is currently under construction at Service Marine, worked closely with the Morgan City yard on the conversion of the 600-passenger dinner cruise/excursion vessel *Cape Ann*.

Transformed from a utility vessel that was used in the offshore oil industry, the *Cape Ann* presented quite a challenge from an engineering standpoint, as a result of the limited amount of weight that could be added to the vessel due to its heavy workboat construction.

The conversion project took approximately four months to complete, with Service Marine performing the majority of work. Service Marine added new steel deckhouses, performed blasting and painting, miscellaneous piping and hull work and drydocked the vessel for underwater gear work.

Operated by A.C. Cruise Line, Inc. of Boston, Mass., the 116-foot *Cape Ann* carries a stability letter for 600 passengers on protected waters, and 400 passengers on partially protected waters. She features a fully enclosed main deck, an enclosed second deckhouse with an open deck all around the perimeter, and a completely open third deck. The vessel, with a beam of 26 feet, depth of 10 feet 6 inches and full load draft of 7 feet 3 inches, has a great deal more open deck space than most dinner cruise vessels. Operating on day-long excursion trips up the Massachusetts coastline from Boston to Gloucester, the *Cape Ann* has a dinner seating capacity of about 240.

In early 1988, the Louisiana boatbuilder delivered the elegant 600-passenger cruise boat *Bay Lady* (see this month's cover) to operator Baltimore Harbor Bay Tours, Ltd., Baltimore, Md., for dinner cruise/excursion service on the Chesapeake Bay.

Unlike the *Annabel Lee*, however, the *Bay Lady* has a sleek yacht-like hull shape and is designed for luxury harbor cruising. The 140-foot-long boat features fine interior appointments throughout, including custom bars with back lighting, polished brass fixtures and teakwood accents. A sophisticated atmosphere is created by the use of mirrors and an excellent sound system. Passengers are kept comfortable by Carrier air conditioning, and outside glare is reduced by the use of tinted glass.

A sub-chapter T vessel, she is powered by a pair of Cummins 300-hp NT-855 diesel engines, which are fitted with Nelson exhaust silencers to reduce engine noise.

The partially covered top deck of the three-deck *Bay Lady* can accommodate 275 passengers, while her lower deck can handle 320 persons.

Currently under construction at Service Marine is the *Spirit of Norfolk*, a dinner cruise/excursion boat based on a sleek megayacht design.

The new boat, which is being built for Cruise International, Norfolk, Va., will have an overall length of 175 feet, beam of 35 feet and will be able to accommodate almost 500 passengers.

The *Spirit of Norfolk* is based on the concept of **Richard O'Leary**, president and founder of Cruise International, who envisioned a vessel similar to Italian yacht design. Service Marine designers evolved his concepts into an ultramodern megayacht. She will be powered by two Caterpillar 3408 DITA B Series 430 diesel engines and cruise a speeds of about 10 knots.

"We design and build a variety of boats, both in style and size," said Mr. Hensley. "Our customers find us flexible and easy to work with and we are constantly searching for ways to better serve the passenger boat market," he added.

For free literature fully detailing the boatbuilding services offered by Service Marine Industries,

Circle 55 on Reader Service Card

## Newport News Awarded \$3.3-Million Modification To Yard Services Contract

Newport News Shipbuilding & Dry Dock Co., Newport News, Va., was recently awarded a \$3.3-million modification to a previously awarded contract for reactor plant planning yard services for the aircraft carrier *USS Enterprise* (CVN-65) and the cruiser *USS Long Beach* (CGN-9). Under the contract (N00024-85-C-4014), which was awarded by the Naval Sea Systems Command, Washington, D.C., work is scheduled to be completed September 30, 1989.

## Cosat To Provide Low-Cost Standard-C Messaging Service

Cosat Maritime Services recently announced its intention to provide a new, low-cost satellite data and messaging service, known as Standard-C, through its two coast earth stations and the International Maritime Satellite Organization (Inmarsat).

The company said it will equip its Santa Paula, Calif., and Southbury, Conn., earth stations by late 1989 so that it can offer global satellite communications to small yachts, fishing boats, and other commercial and offshore vessels through compact, portable, mobile terminals.

Cosat said that Standard-C is capable of providing store-and-forward data and messaging services and that its small size and low cost make it ideal for smaller oceangoing vessels or as a backup system on larger vessels. The system is all-digital, operating at transmission speeds of 600 bits-per-second, and allows for interconnection to the telex network and electronic mail services. It can also be used for position reporting, remote monitoring and control, and remote emergency alarm systems. It cannot, however, be used for standard telephone voice service.

For further information and free literature from Cosat Maritime Services,

Circle 20 on Reader Service Card

## Gotaas-Larsen Acquired By Barclay Brothers In \$670-Million Deal

The Bermuda-based shipping group of Gotaas-Larsen is being acquired by the British entrepreneurs David and Frederick Barclay in a deal said to be worth \$670 million.

The takeover by the Barclay brothers involves a modern fleet of 21 ships including LNG, LPG and oil tankers.

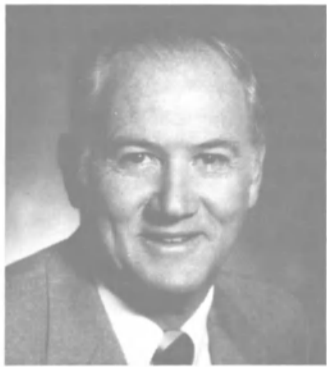
A spokesman for Gotaas-Larsen said the merger was approved unanimously by the directors, who also recommend that the cash deal be supported by the shareholders.



Photos, left to right: The 600-passenger, replica paddlewheeler *Annabel Lee*; the *Spirit of Norfolk* under construction at Service Marine Industries, Morgan City, La.; and the converted *Cape Ann*.



**Marriner Retires  
From Beth-Steel; Forms  
New Consulting Firm**



Gayne Y. Marriner

Gayne Y. Marriner, general manager of sales, marine construction division, Bethlehem Steel Corporation, recently retired, according to an announcement by David H. Klinges, president, marine construction.

Mr. Marriner completes 28 years of service with the company, all in shipbuilding. In his latest position with Bethlehem Steel, he was responsible for the division's strategic plan for marketing and sales where he directed and coordinated all marine construction sales efforts.

Mr. Marriner is currently establishing a consulting firm, Marriner & Associates, Marine Consultants, which will service the maritime industry. The firm will be located at 1750 North Drive, Bethlehem, Pa. 18015; telephone: (215) 867-7595.

**Alsthom Yard To Build  
Two 'Sovereign' Sisters  
For Royal Caribbean**

Royal Caribbean Cruise Line recently announced the signing of contracts worth nearly \$600 million to build two sister ships to its 74,000-grt luxury cruise vessel Sovereign of the Seas, the world's largest passenger capacity cruise ship.

The ships will be built by the St. Nazaire yard of Alsthom-Chantiers de l'Atlantique, which built the Sovereign of the Seas. The cruise vessels will increase Royal Caribbean's passenger capacity by almost 75 percent, to a total of 11,074 double occupancy berths.

The first ship is scheduled to be delivered in March 1991, followed by the second sister nine months later.

Both new luxury liners will serve the Caribbean market, where the Sovereign of the Seas already operates.

**Fjellstrand Delivers  
High-Speed Catamarans  
'Sea Cat' And 'Jetcat'**

The Norwegian-built high-speed catamarans Sea Cat and Jetcat have now been delivered by Fjellstrand a.s. to the recently established shipping company AW Line in the Finnish Aaland Islands.

The Sea Cat is serving the route

between the Aaland capital of Mariehamn and Nortalje in Sweden, a distance of 45 nautical miles including 21 in open sea, that is covered in 105 minutes. The Jetcat covers a route 52 nautical miles long, between Umeaa in northern Sweden and Vasa on the Finnish coast, in 120 minutes. While the Sea Cat can carry up to 230 people, the other catamaran takes 213 passengers.

Both vessels have a top speed of about 40 knots.

Designed for passenger comfort and low noise level, the "Cats" offer spacious seating, with sofa groups separated by green plants in the central section, a separate TV/video saloon, a multi-channel music system with headphones in each seat, and an efficient ventilation system.

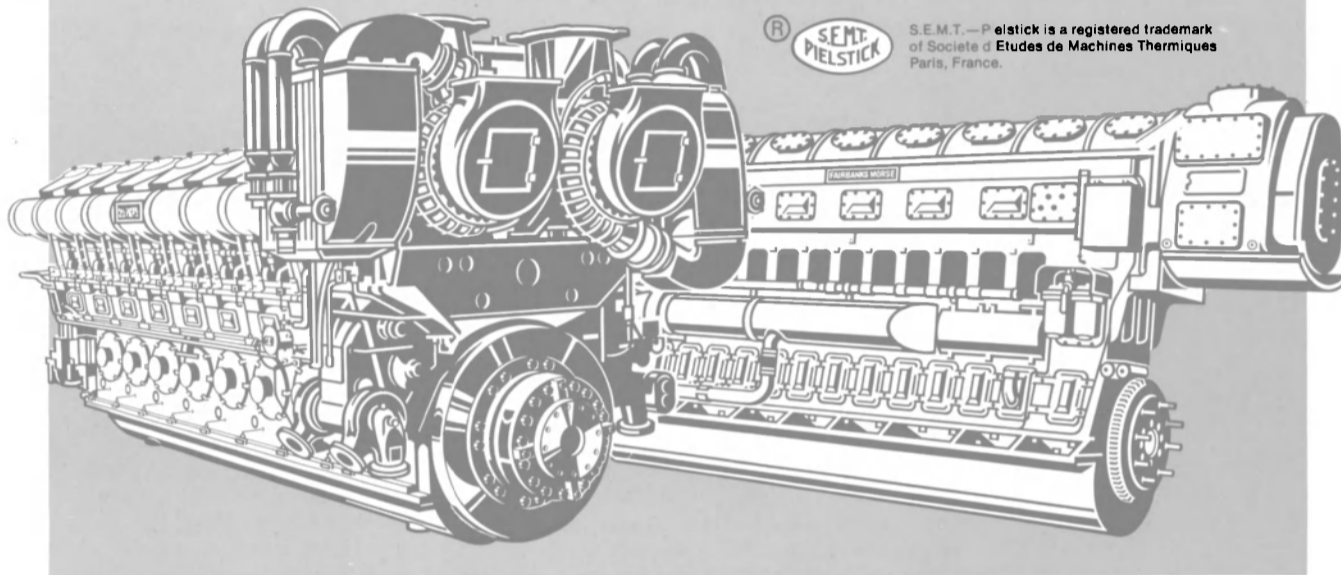
One of Fjellstrand's latest orders

comes from Dae Won Ferry Ltd. in South Korea. This vessel represents the first newbuilding sold from Norway to South Korea, while a total of 75 vessels have been built in the latter country for Norwegian owners.

For free literature giving complete information on the facilities and capabilities of Fjellstrand a.s.,

Circle 60 on Reader Service Card

**Colt-Pielstick® and Fairbanks Morse Diesels  
are in worldwide service...**



**and we intend to keep them running!**

- TROUBLESHOOTING
- TREND ANALYSIS
- DESIGN IMPROVEMENTS
- REPAIRS / OVERHAULS

**When you are looking for  
DIESEL ENGINE PERFORMANCE SPECIALISTS  
Phone: 608 / 364-4411**

Colt Industries Fairbanks Morse Engine Division is the nation's largest supplier of marine medium speed diesels. Our customers include the U.S. government and numerous commercial operators.

Colt Industries



**Fairbanks Morse**  
Engine Division

Circle 136 on Reader Service Card

## TFC Corporation Offers Full Line Of Trash Compactors To Meet New Annex V/MARPOL Rules

—Free Literature Offered—

With worldwide attention on cleaning up the marine industry environment because of the new Annex V-MARPOL 73/78 regulations, Pollution Packer marine trash compactors from TFC Corporation offer a cost effective solution that is both clean and safe to handle all types of waste aboard the vessels and rigs at sea.

TFC Corporation, Bloomington, Minn., offers a complete line of marine trash compactors to handle all types of onboard waste. The firm offers four models to meet the needs of the world shipping and offshore oil industry marketplace.

The company's best selling Fox Pollution Packer is the high-volume model 2400. The versatile and reliable unit has a 1/2-hp, two-stage hydraulic motor/pump unit which permits compaction forces up to 14,000 pounds at low amperage to allow operation on a 110 VAC, 60 Hz, 20 amp circuit. This unit requires only 10 percent of the kilowatt hours of 5 hp compactors with similar compaction forces.

The machine, which has a height of a little over 76 inches, width of 28 inches and depth of about 30 inches, performs four important functions: it cubes all types of waste in heavy-duty reusable plastic cubes (useful for easy handling of soggy or wet waste); it bales paper, cardboard and other baleable wastes; it bags lightweight mixed waste and refuse in heavy duty 4-mil plastic bags; and it boxes wastes such as animal, vegetable, surgical, etc., in polyvinyl waxed-lined cartons.

The model 2400 Fox Pollution Packer offers a number of excellent safety features. For example, the unit will not operate unless the key is inserted in the key switch and turned in the "on" position. Additionally, the Pollution Packer will stop operating if the loading or service door is opened during the compaction cycle. The model 2400 also features a patented pressure-release service door handle camlock which relieves pressure build-up in the compaction chamber prior to the service door being opened.



The model 2400 Fox Pollution Packer from TFC Corporation, Minneapolis, Minn., offers a cost-effective, clean and safe solution to handling all types of onboard waste.

Annex V of the International Convention for the Prevention of Pollution by Ships, 1973, as modified by the 1978 Protocol (MARPOL 73/78) is the third phase of the world maritime community's efforts to prevent the pollution of the ocean by ships. Annex V, which became enforceable January 1, 1989, prohibits the dumping of plastics at sea and severely restricts the ability of vessels to dump other types of ship-generated garbage both at sea and in the navigable waters of the U.S. Annex V applies to all vessels, from the smallest recreational craft to the largest oceangoing commercial ships.

Fox Pollution Packers are already in use aboard U.S. Navy and Coast Guard vessels, as well as offshore oil rigs, tankers and cruise ships.

American United Marine Corporation, Saugus, Mass., are the U.S. agents for Fox Pollution Packers.

For free literature fully detailing the features and options of the Fox Pollution Packer trash compactor line from TFC Corporation,

Circle 54 on Reader Service Card

### UK Yard Awarded \$14-Million Order To Build Two Tankers

The United Kingdom yard of Richards (Shipbuilders) of Lowestoft, a subsidiary of Tate and Lyle, was recently awarded an order worth about \$14 million to build two 3,000-dwt product tankers for FT Evarard Shipping.

The vessels, which will be classed by Lloyd's Register of Shipping, will have an overall length of 262 feet and a gross registered tonnage of less than 600 tons.

### NASSCO Awarded Pact Worth \$242.7 Million To Build Another AOE-6

National Steel & Shipbuilding Co., San Diego, Calif., was recently awarded a \$242.7-million contract by the U.S. Navy to build a second AOE-6 Class fast combat support ship. The work on AOE-7 is expected to be completed in June 1992. The Naval Sea Systems Command, Washington, D.C., is the contracting activity (N00024-87-C-2002).

## PROPULSION UPDATE

### Innovative Propulsion System From Krupp MaK Offers Smooth, Economic Service For Passenger Ships

—Technical Paper Available—

*Editor's Note: This article is based on a technical paper, "Reliable Economic Propulsion Systems With High Passenger Comfort," co-authored by R. Hafner, R. Gruhn and E. Gunther Kroos of Krupp MaK. The paper details the development of a flexible multi-engined propulsion system and the methods adopted to reduce structure-borne noise from the propulsion and auxiliary engines for the recently delivered Crown Odyssey.*

The new Royal Cruise Line 1,200-passenger ship Crown Odyssey required a multi-engined propulsion system which could be operated economically at three essential speeds—maximum, cruising and slow—and, at the same time, satisfy the ship's electricity demands, while still maintaining safety standards.

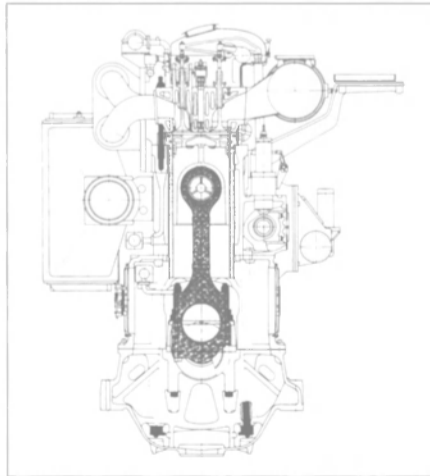
To meet the 40,000-grt Crown Odyssey's operational demands, Krupp MaK developed an innovative main and auxiliary diesel engine configuration which provided for considerable flexibility of operation. The cruise ship's propulsion system features two controllable pitch propellers. Each CP propeller is driven by two engines, a primary and a secondary, which are termed "father and son," according to their size. The "sons" have one generator tailored to their capacity and are similar in output to the two auxiliary engines in the electrical system. Additionally, they can be reduced through gearing to slow speed and can operate the CP propeller for silent running by themselves. There are two "fathers" (Krupp MaK 8M 601s) each with a capacity of 8,000 kw (10,728 hp), two "sons" (Krupp MaK 6 M35s) with a propulsion capacity of 2,650 kw (3,554 hp), and two generator engines (6 M35s)

which are independent of the propulsion engine with a capacity of 2,830 kw (3,795 hp). The gearing has two speed steps for the small engine, from 720 rpm to 90 rpm for silent running, and from 720 rpm to 130 rpm for maximum speed, together with the "father." The "son" has two clutches for the respective gear steps, and another to disengage and engage the "father" with the gearing system.

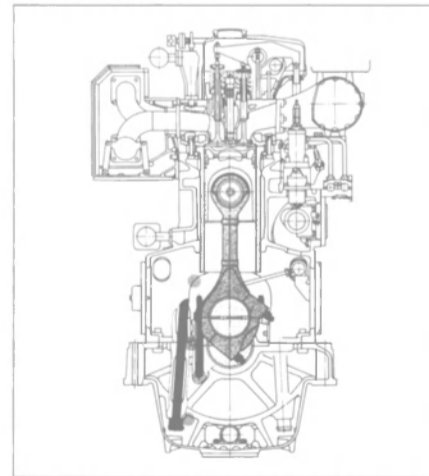
When the gears are engaged, there are four basic alternatives: (1) the "father" runs with minimum revolutions and is then engaged while the propeller is still set to pitch 0; (2) the "father" drives the propeller with any revolution and respective load. The "son" is engaged after synchronization and is subjected to gradual load; (3) "father and son" run with minimum revolutions; "father and son" are then engaged while the propeller pitch is set to 0; the "son" runs alone with minimum revolutions and is then adjusted to slow by the transmission and shifted to the propeller which is set to a pitch of 0.

During operation, there are three separate speeds—maximum, cruising and slow. At cruising speed, the main engine drives the CP propeller alone. At maximum speed, the "father and son" both drive the CP propeller and the "son" goes relatively fast because of its gear transmission. At slow speed, the "son" slowly drives the revolving CP propeller through the gear transmission.

In addition to a clear arrangement, the control of the system is simplified because no load is shifted



Cross section drawing of Krupp MaK's M601 diesel engine. Two eight-cylinder models were installed aboard the cruise ship Crown Odyssey as part of a "father and son" propulsion system.



Cross section drawing of the 6 M35 diesel engine from Krupp MaK. Four of these models were installed aboard the Crown Odyssey, two for propulsion and two for auxiliary application.

from one engine to the other, except in the cruising mode.

Either the "father" engine or the "son" engine has all the capacity or the capacity is distributed between the engines in proportion to their nominal capacity.

The speed step of the "son" is necessary to enable it to drive the heavy propeller alone, in spite of its low capacity and this also benefits the speed requirements mentioned earlier.

#### Resilient Mounting Of Engines

Passenger vessels, such as the Crown Odyssey, require a high level of comfort. Therefore, the structure-borne noise of propulsion engines has to be isolated from the ship's hull. Elastic mounting of the engines offers an excellent solution to the problem of structure-borne noise.

Resilient mounting of ship diesel engines is not a new technique. However, there is a difference between the direct elastic installation of main propulsion engines and the mounting of aggregates where engine and generator are placed on a common frame and the spring elements are arranged beneath the base frame. Aggregates have an advantage in that they do not reflect the torque, relative to the elastic mounting, to the outside. The engine transmits its torque through the shaft connection to the generator. Engine and generator support themselves on the same frame and generate an opposed reaction momentum which arrives at the frame as torsion and closes the circle of torsional momentum. The base frame therefore receives a certain torsion in the area between engine and generator. With rigid design and prevention of resonances, this can be well controlled and negligible reactions will be generated at the ship's foundation beneath the spring elements. Furthermore, aggregates generally run at a constant speed, which makes the design considerably easier. Finally, the higher spring-supported weight around the base frame, in contrast to direct mounting, is of considerable advantage.

The elastic mountings used aboard the Crown Odyssey were specially developed by Krupp MaK for the 140-ton 8 M601 engine. The mountings provide excellent vibration and structure-borne noise insulation for the ship, while maintaining safe vibration levels for the engines and propulsion system. In addition, the elastic mountings reduce strain on the engine frame and bed plate; limit engine motion due to heavy seas; and provide relatively easy cost-effective installation and maintenance.

It can be concluded that reliable engines can be adapted to meet the special requirements of passenger ships. The installation of several medium-speed engines, together with reduction gears and controllable pitch propellers, as in the case of the Crown Odyssey, provide for high efficiency, high reliability and quiet operation.

For a free copy of the complete technical paper, "Reliable Econom-

ic Propulsion Systems With High Passenger Comfort," along with brochures and literature detailing the full line of diesel engines offered by Krupp MaK,

Circle 47 on Reader Service Card

#### MHI Wins Order For LPG Carrier Worth \$50-Million

Japanese shipbuilder Mitsubishi Heavy Industries (MHI) has won its

third order this year for a large liquefied petroleum gas carrier. The order for a 78,000-cubic-meter-capacity carrier, which will be managed by Sanko Steamship, was placed by Mitsubishi Corporation under a contract said to be worth about \$50 million.

## BE WHERE THE BUYERS ARE

# IMEX-89

### INTERNATIONAL MARINE EQUIPMENT EXPOSITION

THE RIVERGATE / NEW ORLEANS

APRIL 20-22, 1989

Here's 5 good reasons why you should be at IMEX 89 — The new show for workboat, passenger vessel and shallow-draft military buyers!

**1 BUYERS.** Only IMEX gives exhibitors exclusive access to key buyers from the following major markets: oilfield service and supply; inland river transportation; passenger and specialty vessel operations; shallow-draft military buyers and specifiers; pollution control and clean-up.

**2 TIMING.** Set for April, 1989, IMEX responds perfectly to an industry on the upswing. No conflicts with other major shows - no "squeezing" IMEX into a busy holiday schedule. The industry will be "fitting out" and the weather will be fine.

**3 LOCATION.** New Orleans and The Rivergate - A winning combination. At the hub of the oilfield and river industries, New Orleans has the appeal to draw buyers from all IMEX markets. Plus, it's a great town for exhibitors - vacation, entertain, do some business. Only at IMEX.

**4 PRICE.** Exhibit space at IMEX is moderately priced at \$775 per standard 10x10 booth (well below comparable shows). Plus, IMEX exhibitors can save even more when they take advantage of generous early bird discounts. IMEX - The affordable show.

Official Publication  
of IMEX 89:  
MARITIME REPORTER

**5 RESULTS.** Sales and qualified sales leads. That's all that really matters, the rest is just window dressing. No where else in the next 12 months will you find a more effective and affordable opportunity to produce sales results. Let IMEX be your top producing salesman in '89.

MAIL TO:  
IMEX 89, P.O. Box 274, Deer Isle, ME 04627

YES, Send me more information about IMEX 89  
 EXHIBITOR INFO  ATTENDEE PACKAGE

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ST \_\_\_\_\_

ZIP \_\_\_\_\_

PHONE \_\_\_\_\_

FAX \_\_\_\_\_

CALL OR FAX SHOW OFFICES TODAY  
FOR MORE IMEX 89 INFORMATION:

PHONE: 207/348-9990 FAX: 207/367-2490

Circle 212 on Reader Service Card

# FOR MORE INFORMATION ON EQUIPMENT AND SERVICES ADVERTISED IN THIS ISSUE

CIRCLE THE APPROPRIATE NUMBER ON READER SERVICE CARD OPPOSITE →

ADVERTISER	EQUIPMENT CIRCLE /SERVICE NO.		
AMERICAN WELDING SOCIETY	ANNUAL MEETING/TRADE SHOW	129	
ASTILLEROS ESPANOLAS	SHIPBUILDING/REPAIR	184	
ATLANTIC MARINE	SHIPBUILDING	120	
ATLANTIC MARINE EXPO 89	TRADE SHOW	204	
BENDER	SHIPBUILDING & REPAIR	147	
BLOUNT	SHIPBUILDING	156	
CENTRAL RECOVERY SYSTEMS	TREATMENT PROGRAM	183	
COLONNA'S	SHIPBUILDING	174	
COLT INDUSTRIES/FAIRBANKS MORSE	DIESEL ENGINES, PARTS/SERVICE	136	
COMSAT	COMMUNICATIONS EQUIPMENT	205	
CUMMINS	DIESEL ENGINES	173	
DEL GAVIO	HYDRAULICS	155	
ENVIROVAC	E-VAC SANITATION DEVICES	222	
ENVIROVAC	ORCA SEWAGE SYSTEMS	192	
FERNSTRUM	GRIDCOOLERS	165	
GE MARINE & INDUSTRIAL	GAS TURBINE PROPULSION SYSTEMS	218	
HENSCHEL	NAVIGATION/COMMUNICATIONS EQUIPMENT	201	
IMEX 89	TRADE SHOW	212	
JIM'S PUMP	PUMP REPAIR	332	
KHD	DIESEL ENGINES	245	
KAHLENBERG	ELECTRIC HORN/NAVIGATION SAFETY EQUIPMENT	234	
KaMeWa	PROPULSION SYSTEMS	223	
LEEVA SHIPYARDS	SHIPBUILDING	256	
McELROY	DECK MACHINERY	138	
MAN B&W DIESEL	DIESEL ENGINES	267	
MAINE MARITIME ACADEMY	HIGHER EDUCATION	263	
MARCO	OIL/DEBRIS SKIMMERS	189	
MICROPHOR	HEADS/SANITATION DEVICES/OIL-WATER SEPARATORS	281	
MARINE INTERIORS	BOOTHS/TABLES/BENCHES	114	
T. MARIOTTI	SHIPREPAIR/CONVERSION	289	
MARITIME LONDON '89	CONFERENCE/TRADE SHOW	180	
MICHIGAN WHEEL	TOWMASTER	154	
L. Q. MOFFITT	BEARINGS/STAVES/SLEEVES	276	
NATIONAL SPECIALTY PRODUCTS	11/88	236	
NORTHWEST MARINE IRONWORKS	SHIPREPAIR	158	
NORTHWEST MARINE SERVICES	MARINE EQUIPMENT	169	
RACAL MARINE	COLOR RADAR SYSTEMS	262	
RAYTHEON MARINE	PATHFINDER RADAR	118	
RESEARCH PRODUCTS/BLANKENSHIP	ELECTRIC TOILET	272	
SERVICE MARINE	SHIPBUILDING	198	
SKIPPERLINER	SHIPOBUILDING	318	
SOUTHWEST MARINE	SHIP REPAIR	296	
SPACE MACHINE	WAVEGUIDES	322	
SPERRY	NAVIGATION EQUIPMENT	278	
STAL MARINE	AIRCONDITIONING/REFRIGERATION SYSTEMS	208	
TEXACO	MARINE FUELS/LUBRICANTS	260	
TRINITY/EQUITABLE	BARGE BUILDING	269	
TRINITY MARINE	SHIPBUILDING	305	
ULSTEIN	BERGEN DIESELS/NORWINCH WINDLASSES & WINCHES	323	
VSE	MARINE DESIGN SERVICES	287	
VESTA	INCINERATORS	164	
WARTSILA	DIESEL ENGINES	300	
WRIGHT AUSTIN	GAS/LIQUID SEPARATORS	314	
ZF OF NORTH AMERICA	PROPULSION EQUIPMENT	254	
ZIDELL	BARGE BUILDING	178	
ZODIAC OF NORTH AMERICA	RIGID HULL INFLATABLES	341	

## Far East Levingston Signs \$50-Million Contract To Build Cable-Laying Ship

Far East Levingston Shipbuilding (FELS) recently received a \$100-million (about US\$50 million) contract from American Telephone and Telegraph Company, USA (AT&T) to design and build a new cable-laying ship. Scheduled for completion in late 1990, the new vessel will install and maintain undersea communications cables in a project said to be the first of its kind in Asia.

The cable ship will incorporate state-of-the-art naval architecture and technology specially designed to enhance cable-laying and repair capabilities for the new undersea fiber-optic cable systems scheduled for service in the next decade.

The 8,000-ton ship, which will be 475 feet long and 70 feet wide, will be operated by Transoceanic Ship Cable Company, a subsidiary of AT&T.

## Pictou Industries Completes Third Enlargement Of Crandall Railway Drydock

The 2,000-ton-capacity Crandall railway drydock built in 1942 in Pictou Harbor at Pictou, Nova Scotia, for the Canadian Naval Service has now been enlarged to 3,000-ton-capacity at Pictou Industries Limited.

This is the third enlargement of the railway drydock, all of which were designed by Crandall Dry Dock Engineers, Inc. The Pictou shipyard played an important part

in much of the steel fabrication and equipment installation. The facility is currently under the management of Canadian Shipbuilding and Engineering Limited, who also manage facilities at Thunder Bay and Port Weller Dry Dock on the Great Lakes.

According to Crandall Dry Dock Engineers, if a railway drydock is initially well designed it not only allows security and longevity of dry-docking operations but also allows capacity expansion at considerably less expense. Rebuilding and expansion of facilities by Crandall have recently been successfully completed in Halifax/Dartmouth, Lunenburg and North Sydney, Nova Scotia, and in Jacksonville, Fla.

For further information on railway dry dock installations by Crandall Dry Dock Engineers,

Circle 21 on Reader Service Card

## Foss Maritime Changes Line Service Name To 'Foss Line Service'

Foss Maritime Company's Reliable Line Service in Seattle and Tacoma Line Handling Company in Tacoma have been renamed Foss Line Service to more closely identify these services with Foss, according to **Tim Brewer**, vice president of sales, Pacific Northwest harbor services.

"We want to make it clear that this is a Foss business and that our customers will get the same timely, reliable service that the Foss name stands for," he said.

For more information and free literature from Foss Maritime,

Circle 64 on Reader Service Card

We have built over 5000

# BARGES

Inland, ocean, and specialty service barges of all types.

If you transport—chemicals, petroleum, commodities, coal, hazardous materials, or whatever, we can build it to your design or ours. Up to 600 feet with ASME tanks.



Equitable Shipyards, Inc.  
A Trinity Industries Company  
P.O. Box 8001, New Orleans, La. 70182  
504-286-2500 Telecopy: 504-286-2554

Circle 269 on Reader Service Card

**VSE CORPORATION** SINCE 1959  
2,300 Employees, 30 Offices Nationwide

**MARINE DESIGN SERVICES**  
MASTER ORDNANCE REPAIR CERTIFIED

Join the professional marine design staff that keeps growing. You may qualify based on your experience and education in the following areas:

- NAVAL ENGINEERING
- NAVAL ARCHITECTURE
- COMBAT SYSTEMS
- COMPUTER AIDED DESIGN SERVICES
- MACHINERY CONDITION ANALYSIS
- MACHINERY VIBRATION ANALYSIS
- LOGISTIC SUPPORT SERVICES
- DIVER'S LIFE SUPPORT SYSTEMS
- OVERHAUL PLANNING SERVICES
- SHIP'S SELECTED RECORD SERVICES

Competitive salary and benefits  
Please send resume or call our Employment Office for consideration

1417 N. Battlefield Blvd.  
Chesapeake, Virginia 23320  
(804)547-8556

EOE M/F/V/H

Circle 287 on Reader Service Card



RIGID HULL  
INFLATABLE BOATS

ZODIAC OF NORTH AMERICA  
P.O. BOX 400  
THOMPSON CREEK ROAD  
STEVENSVILLE, MD 21666  
(301) 643-4141

Circle 341 on Reader Service Card

Maritime Reporter/Engineering News





# PROFESSIONAL

24 Hours  
A Day  
7 Days  
A Week



Marine  
Emergency  
Service

**ENGINEERING/CONSULTING SERVICES — SURVEYING**  
 \*LASER/COMPUTER ENGINE ALIGNMENTS  
 \*DIESEL ENGINES - STEAM - TURBINES - BOILERS  
 \*MACHINING - IN SHOP OR IN PLACE "METRIC" AND "INCH"  
 \*BEARING REBABBITTING - CLASS APPROVED  
 \*HYDRAULICS - PNEUMATICS - REFRIGERATION  
 \*STEELWORK - PIPE - MACHINERY - ELECTRICAL


2400 N.W. 39 Ave., Miami, U.S.A. FL 33142  
 (305) 871-4094 Telex: 512408 Telefax: (305) 871-3180 Cable: AMT MARINE  
 FACTORY AUTHORIZED Repairer and Spares Dealer for



**CAPTAIN ASTAD CO. INC. SHIPBROKERS**  
**PURCHASE & SALE OF ANY TYPE OF SHIPS**  
**PURCHASE AGENTS ENGINE & DECK SPARE PARTS**  
**OWNERS REPRESENTATIVE**

CAPTAIN ASTAD CO. INC.  
 P.O. BOX 1093  
 HOUMA, LA 70360  
 PHONE 504/529-4171  
 FAX 504/851-7084  
 TELEX 6821298 "ASTAD"  
 JODY M. ST. GERMAIN ESKINE, V.P.

CAPTAIN ASTAD CO INC.  
 P.O. BOX 350486  
 FORT LAUDERDALE FL 33335  
 PHONE 305/344-3502  
 FAX 305/771-5214  
 TELEX 705722 "OPMC" FTL  
 CAPT. A. J. ASTAD, PRES.



**ARTHUR D. DARDEN**  
 INCORPORATED

NAVAL ARCHITECTS & MARINE ENGINEERS  
 3100 RIDGELAKE DR. SUITE 101  
 METAIRIE, LOUISIANA 70002 (504) 832-3952

**PUSHBOATS, TUGS, CREWBOATS, TENDERS**  
**BARGES OF ALL TYPES, INLAND OR OFFSHORE**  
 WILLIAM T. BERGERON  
 BERGERON & ASSOCIATES  
 MARINE BROKERS  
 (504) 271-7171

P.O. BOX 726 CHALMETTE, LA 70044  
 "IF YOU NEED IT, WE CAN FIND IT"

**DESIGN ASSOCIATES, INC.**  
 M. KAWASAKI  
 14360 Chef Menteur Highway  
 New Orleans, Louisiana 70129

Naval Architects Marine Management  
 Marine Engineers Transportation Consultants  
 Phone: (504) 254-2012 TWX 810-951-5317

**advanced marine**  
 ENTERPRISES, INCORPORATED

**HEADQUARTERS:**  
 Suite 1300  
 1725 Jeff Davis Hwy.  
 Arlington, VA 22202  
 703 979-9200

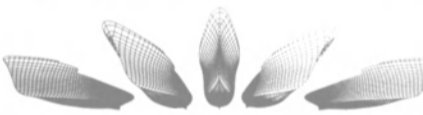
**SYSTEMS MANAGEMENT**  
 Acquisition Management  
 Logistic Support  
 Systems Integration  
 Charles H. Piersall Jr., Division President

**SHIP ENGINEERING & DESIGN**  
 Feasibility Studies through Detail Design  
 Alteration & Conversion Design  
 Systems Engineering  
 Dr. Robert S. Johnson, Division President

**FIELD OFFICES:**  
 Virginia Beach  
 Philadelphia

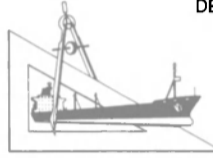
**PROJECT OFFICES:**  
 At Customer Sites

**FLEET SUPPORT & FIELD ENGINEERING**  
 In-service Engineering  
 Overhaul, Repair, and Test Support  
 Self-help & Alteration Installation  
 Gordon M. Green, Division President



**COI marine company**  
 PROFESSIONAL • EXPERIENCED • RESPONSIVE

SUPPORTING THE MARINE INDUSTRY WITH:  
 ENGINEERING SERVICES  
 DETAILED DESIGN  
 COMPUTER AIDED DESIGN  
 TECHNICAL PUBLICATIONS  
 LOGISTICS



JACKSONVILLE 904-738-9700 PHILADELPHIA 609-228-1853 NEWPORT NEWS 804-245-0516 PORTSMOUTH 606-397-6000 BREMERTON 206-479-8828

**DESIGNERS & PLANNERS, INC.**  
 Naval Architecture - Marine Engineering  
 Human Factors Engineering

Newport News, VA (804) 873-0830  
 Cherry Hill, NJ (609) 795-1170  
 Bayonne, NJ (201) 339-9446  
 Norwich, CT (203) 887-2501  
 Arlington, VA (703) 892-8200  
 2011 Crystal Drive ■ Arlington, VA 22202



**C.T. MARINE**  
 NAVAL ARCHITECT • MARINE ENGINEER

• TUGS  
 • TOWBOATS  
 • BARGES

18 Church Street, Georgetown, CT 06829  
 Telephone: 203-544-8110  
 Telex: ITT 4994761

**E.Y.E. MARINE CONSULTANTS**  
 NAVAL ARCHITECTS • MARINE ENGINEERS  
 SHIP SURVEYORS • OFFSHORE ENGINEERS

Dartmouth, Nova Scotia Tel: (902) 463-8940  
 Canada Fax: (902) 463-6319  
 Tlx: 019-22632  
 St. John's, Newfoundland Tel: (709) 722-5560  
 Fax: (709) 722-4880

**AmSEC** AMERICAN SYSTEMS  
 ENGINEERING CORPORATION

Marine Engineers • Port Engineer Services  
 Systems Analysts • Propulsion Plant Training  
 Qualified Manufacturer's Field Representatives

P.O. Box 8988 • Virginia Beach, VA 23452 • (804) 463-6666  
 Philadelphia, PA • Bremerton, WA • Virginia Beach, VA  
 Arlington, VA • San Francisco, CA • San Diego, CA



**CHILDS ENGINEERING CORPORATION**  
 WATERFRONT ENGINEERING • DIVING INSPECTION

BOX 333 MEDFIELD, MA 02062 (508) 358-8845

**ENCON** MANAGEMENT & ENGINEERING  
 CONSULTANT SERVICES


Marine Structures • Engineering Analysis • Marine Survey  
 Project Management • Loss Prevention • Naval Architecture

P.O. Box 7760 • Beaumont, Texas 77706  
 (409) 866-9158

**AMIRKIAN ENGINEERING CO.**  
 HARBOR AND DRYDOCKING FACILITIES

AMMI STABILIZER FOR MOORING &  
 FLOATING & SUBMERSIBLE STRUCTURES

P.O. BOX 15210  
 CHEVY CHASE, MARYLAND 20815  
 (301) 652-6903

**CRANDALL**  
 DRY DOCK ENGINEERS, INC.

Railway and Floating Dry Docks  
 Waterfront Structures • Consulting  
 Design • Inspection  
 Dry Dock Hardware and Equipment

11 Pottery Lane Dedham, MA. 02026  
 Tel. (617) 329-3240 Telex: 924406

BARGES - TUGS - TOWING  
 CHARTERS AND SALES

Jack Faulkner  
 Tug & Barge Sales

PROCUREMENT AGENTS  
 ON INLAND  
 AND OCEAN TOWING

(312) 798-2419  
 FAX (312) 798-1077



2419 Caddy Lane Flossmoor, Illinois 60422  
 "TOWING ANYWHERE THERE IS WATER"

COATINGS—CHEMICALS—GAUGES  
 International Paint (U.S.A.) Inc.  
 Henric-Vecom (U.S.A.) Ltd.  
 DeFelsko Corporation

**ARMORICA SALES INC.**  
 2 Marineview Plaza • Hoboken, NJ 07030  
 (201) 792-7682



**Crane consultants inc.**

15301 1st Ave. So. Seattle, Washington 98148  
 (206) 246-7962 TWX 910-444-2085  
 Crane hoist, materials handling specialists



**GIM**  
 INDUSTRIAL MEASUREMENT  
 CONSULTANTS

• Industrial Photogrammetry  
 • Theodolite Systems  
 • CAD Applications

P.O. Box 1836, Newport News, VA 23601 (804) 591-9244

**Ocean Engineering Centre**  
**SHIP-MODEL TESTING**

- Resistance Tests
- Flow Visualization
- Wake Surveys
- Towed Directional Stability Evaluations
- Seakeeping

For Information Contact:  
**B.C. Research**  
**Ocean Engineering Centre**  
 3650 Westbrook Mall,  
 Vancouver, Canada V6S 2L2  
 Telephone (604) 224-4331  
 Telex 04-507748



**C. R. CUSHING & CO., INC.**  
 NAVAL ARCHITECTS, MARINE ENGINEERS  
 & TRANSPORTATION CONSULTANTS

18 Vesey Street  
 NEW YORK, N.Y. 10007  
 TEL (212) 964-1180 CABLE CUSHINGCO  
 TX: 752481

**GIBBS & COX INC**  
 NAVAL ARCHITECTS & MARINE ENGINEERS

119 West 31st Street • New York, N.Y. 10001  
 (212) 613-1300




**DLI** MARINE  
 ENGINEERING CORPORATION VIBRATION ANALYSIS  
 NOISE CONTROL

253 Winslow Way West, Bainbridge Island, WA 98110  
 (206) 842-7656

Measurement, recording and  
 analysis of mechanical,  
 structural and electrical  
 phenomena.




**JOHN W. GILBERT ASSOCIATES, INC.**

Naval Architects  Marine Engineers

66 LONG WHARF  
 BOSTON, MASS. 02110  
 (617) 523-8370

Seattle, Washington  
 Phone: 206-624-7850  
 Telex: 882053

**THE GLOSTEN ASSOCIATES, inc.**  
 CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY



**MORRIS GURALNICK ASSOCIATES, INC.**  
 NAVAL ARCHITECTS MARINE ENGINEERS

620 Folsom St., Suite 300, San Francisco, CA 94107  
 Main Office: (415) 543-8650  
 Ventura Office: (805) 656-2322

**C. Raymond Hunt Associates, Inc.**  
**High Speed Powerboat Design**

69 Long Wharf - Boston, MA 02110  
 Tel: (617) 742-5669/FAX: (617) 742-6354

THE WORLD'S LARGEST NS&V FACILITIES

**H-TEST**

LABORATORIES, INC.

CORPORATE OFFICE	GOVT LIAISON OFFICE	TEST FACILITIES
P.O. BOX 226 BUCKINGHAM, VA 23821 (804)969-4264	CRYSTAL SQUARE 4 SUITE 300 1745 JEFFERSON DAVIS HWY ARLINGTON, VA 22202 (703)521-2511	P.O. BOX 87 ARVONIA, VA 23004 (804)581-3204

COMPETITIVE SCHEDULE

- Hi-Impact Shock Testing (MIL-S-901) Light/Medium/Heavy
- Environmental Vibration Testing Type 1 (MIL-STD-167) To 35,000 Lbs
- Internally Excited Vibration Testing Type II (MIL-STD-167)
- Airborne & Structureborne Noise Testing (MIL-STD-740)
- Pitch & Roll Simulation Testing (MIL-STD-16400) To 20,000 Lbs.
- Functional Testing, OA Testing (NDT) & Failure Analysis
- Fixture, Structure and Foundation Design & Fabrication
- Qualified Welding—Steel, Aluminum, SS, HY80, HY100, HY130, HSLA
- Finite Element Analyses (DDAM, Structural, Dynamic & Transient)
- Noise, Shock, & Vibration (NS&V) Field Testing and Shipboard Surveys
- NS&V Program Management Plans & Impact Studies (ECP's, Failure Mods)
- NS&V Data Review, Evaluation, Management & Coordination
- NS&V Test Plans, Procedures, Reports & Management Support
- State of the Art NS&V Measurement and Data Analysis Instrumentation

SUPPORTING THE MARINE INDUSTRY WORLDWIDE

**HYDROCOMP** Inc.

Consulting in Naval Architecture & Marine Engineering  
 Marine Design Computer Services  
 NavCad™ Marine Engineering Software

45 JAMES FARM - LEE  
 PO BOX 865  
 DURHAM, NH 03824  
 603-659-2660

MARINE SURVEYORS  
 ENGINEERS  
 CONSULTANTS

**INTRAMARINE, INC.**

P.O. BOX 53043 JACKSONVILLE, FL 32201  
 (904) 353-0828 TELEX: 56-8421  
 FAX (904) 353-1103

•HULL •MACHINERY •YACHT SURVEYS

**JJH Inc.**

A NAVAL ENGINEERING COMPANY

"Quality First"

CHERRY HILL, NJ 609-663-3020  
 CRYSTAL CITY, VA 703-920-3435

PORTSMOUTH, VA 804-399-4096  
 BATH, ME 207-443-1303

**J.A.V.** **R. D. Jacobs and Associates**  
 Naval Architects • Marine Engineers  
 Consulting Engineers

MARINE AND STATIONARY PROJECTS

Marine Surveyors; Project Specifications and Designs;  
 Energy Efficient Concepts

Owner Representation Services; Machinery  
 Casualty Investigations;  
 Practical Engineering Economics Analyses

11405 MAIN ST., ROSCOE, IL 61073 815-623-6760

**K.P.G.**

K.P.G. Integrated Engineering Pty. Ltd.

Manufactures and Distributors of special contouring roll presses for all compound curved shell plate development requirements.

P.O. Box 525 Cairns Qld. Australia 4870  
 Ph: Aust. 61-070-51 4424 or 55 3044 Fax: 070-31 1998

**JAMES S. KROGEN & CO., INC.**  
 NAVAL ARCHITECTS & MARINE ENGINEERS

Tel. (305) 642-1368  
 1515 N.W. 7th St., Suite 124, Miami, FL 33125

**RODNEY E. LAY & ASSOCIATES**  
 NAVAL ARCHITECTS

NAVAL ARCHITECTS • MARINE ENGINEERS

13891 Atlantic Blvd.  
 Jacksonville, Florida 32225  
 (904) 221-7447 TWX 810-828-6094

**MACPHERSON MARITIME SERVICES**

Marine Transportation Consultants  
 Shipping Economists  
 Business Planners

141 Jefferson Avenue  
 Westfield, New Jersey 07090  
 Telephone: 201/232-3636 Telex: 833231 (700)

**Alan C. McClure Associates, Inc.**  
 NAVAL ARCHITECTS • ENGINEERS

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

**Mc ELROY**  
 MACHINE & MFG. CO., INC.  
 A PREDCO COMPANY  
 ENGINEERING & DESIGN OF

ANCHOR HANDLING SYSTEMS  
 AND MARINE DECK MACHINERY  
 COMMERCIAL-OFFSHORE-MILITARY

P.O. Box 4454  
 Biloxi, MS 39535-4454  
 PHONE (601) 896-3736  
 TELEFAX (601) 896-0874  
 1-800-634-6478

**John J. McMullen Associates, Inc.**

**JJMA**

Naval Architects • Marine Engineers • Transportation Consultants

New York, NY • Arlington, Va • Newport News, Va • Houston, Tx  
 Ventura, Ca • Bath, Me • Seattle, Wa • Pascagoula, Ms

One World Trade Center/Suite 3000/New York, New York 10048/(212)466-2200

Speed & Propulsion Power Policy

**FENDALL MARBURY**  
 NAVAL ARCHITECT

9 NEAL STREET  
 ANNAPOLIS, MARYLAND 21401 (301) 266-8254

MAINTENANCE MANAGEMENT  
 FULL SERVICE SYSTEMS

**MMS**  
 MARINE MANAGEMENT SYSTEMS INC

- SPARE PARTS INVENTORY
- PLANNED MAINTENANCE
- CONDITION MONITORING

SOFTWARE • HARDWARE • ENGINEERING SERVICES

102 HAMILTON AVENUE • STAMFORD, CT 06902 • (203) 327-6404  
 TLX 996483 • FAX (203) 967-2927

THE PROFESSIONALS

Maintenance, Repair & Retrofit Specialists

**MPA**  
 MARINE POWER ASSOCIATES

1010 Turquoise St., Ste. 217, P.O. Box 99546  
 San Diego, CA 92109, (619) 488-7703

**MARITIME DESIGN, INC.**

NAVAL ARCHITECTS MARINE CONSULTING MARINE DESIGN

MARINE ENGINEERS COMPUTER PROCESSING MARINE SURVEYS

2955 HARTLEY RD • JACKSONVILLE, FL 32217 • (904) 268-9137

Worried about defending your license or yourself in a hearing conducted by the Coast Guard, National Transportation Safety Board or a State Pilotage Authority, which could result in license revocation, suspension or assessment of a fine/money damages against you personally?

Stop worrying. Insure yourself and your license with a Marine License Insurance Policy. For more information contact R.J. Mellusi & Co., 71 Hudson Street, New York, N.Y. 10013, Tel. (212) 962-1590 Fax (212) 385-0920

**H. J. Merrihue**  
 DIVING  
 and  
 MARINE SERVICES

All Underwater Needs  
 For Shipping  
 CRANE BARGE SERVICE  
 ANCHOR & CHAIN RETRIEVAL  
 INSURED MARITIME

**(504) 466-2800**  
 NEW ORLEANS

Telex 78 4294 FAX 504 466-9850

Telephones (212) 943-7070  
 (201) 984-2295  
 Night (201) 538-1789  
 TWX: 710-991-0290

**MOWBRAYS**

SPECIALISTS IN BUYING, SELLING AND RENTING TUG BOATS • BARGES CONTRACTORS FLOATING EQUIPMENT

TUG AND BARGE SALES CORP.  
 35 DE HART STREET, MORRISTOWN, N.J. 07960  
 YOUR MARINE CONSULTANTS

**NELSON & ASSOCIATES, INC.**  
 MARINE

SURVEYORS ENGINEERS CONSULTANTS APPRAISERS

610 N.W. 183 St., Miami, Fla. 33169 (305) 653-4884  
 Telex: 44-1869 Cable: NELSURVEY

**NORD-MARINE, INC.**  
 MARINE SURVEYORS-ENGINEERS-CONSULTANTS

153 KEMP AVE. FAIR HAVEN, NJ 07704  
 PHONE: (201) 741-4403 (24HR/7DAY) TELEX: 178323 NORD UT

• INSURANCE APPRAISING • PURCHASE AND SALE SURVEYS • MAINTENANCE AND REPAIR SUPERVISIONS OF HULL AND MACHINERY • DIESEL ENGINES • NEW BUILDING SUPERVISIONS • DRAFTING SERVICES • CASUALTY AND PERSONAL INJURY INVESTIGATIONS • CONSULTING IN ADMIRALTY CASES •  
 Languages: Finnish, Swedish/Scandinavian, German

**NORTHERN MARINE**

Naval Architecture - Marine Engineering  
 Marine Surveying

(616) 946-5959  
 P.O. Box 1169 Traverse City, MI 49685

**OCEAN-OIL INTERNATIONAL ENGINEERING CORPORATION**

3019 Mercedes Blvd., New Orleans, Louisiana 70114, U.S.A.

NAVAL ARCHITECTS • MARINE SURVEYORS  
 SALVAGE ENGINEERS

Hector V. Pazos, P.E.  
 Phone: 504/367-4072  
 Telex: 58364 NLN  
 FAX: 504/367-0122

**Q.E.D. SYSTEMS, INC.** VIRGINIA BEACH (804) 490-5000

MARINE ENGINEERS NAVAL ARCHITECTS  
 LOGISTICS ENGINEERS

ARLINGTON LAKEHURST  
 BREMERTON SAN DIEGO CHARLESTON  
 JACKSONVILLE PHILADELPHIA SAN FRANCISCO

**SARGENT & HERKES, INC.**  
 NAVAL ARCHITECTS • MARINE ENGINEERS

225 BARONNE ST., SUITE 1405  
 NEW ORLEANS, LA 70112  
 (504) 524-1612



# ELECTRONICS UPDATE

## Krupp Atlas Elektronik Introduces Atlas 8630 VTC Radar Designed For Vessel Traffic Control Applications

—Free Literature Available—

Atlas 8630 VTC, a new modular 16-inch Rasterscan radar with integral keyboard facilities specifically designed for vessel traffic control applications, was recently introduced by Krupp Atlas Elektronik.

Suitable for either stand-alone operation or installation as part of a network of VTC radar consoles, the system precludes any necessity for ancillary computer, display or other equipment functions, although for extended user requirements, it can be typically connected via standard interfaces to weather observation, communication and data base systems. Up to 100 targets can be tracked simultaneously with range measurements available for display in either nautical miles or kilometers.

All menu-controlled information is presented on a high-definition screen offering continuous true daylight viewing. VTC functions shown include anchor and fairway watches, target prediction and speed limits, which can be individually assigned to each tracked target according to vessel type and load as well as environmental factors.

Target tracking may be either manual or automatic inclusive of position, course and speed as well as TCPA and CPA values. Monitoring of individual TCPA and CPA values against those of other targets is continuous with provision for both visual and aural warnings whenever those for two vessels fall within predetermined limits. Bearings from two target VHF direction finders can also be superimposed on displays.

Up to 100 detailed maps can be compiled and stored via the radar indicator, any of which can be re-



The new Atlas 8630 VTC radar from Krupp Atlas Elektronik.

produced on the screen with adjoining land areas deleted as and when required. Consisting of some 10,000 separate elements, each also allows for creation of 20 symbols and line types for identification of individual buoys, wrecks or other chart-type markings. All maps are security-protected with access for storage and editing being restricted to authorized personnel only.

For extended coverage of particularly large operating areas, a network of four or more 8630 VTC consoles can be established and controlled by a Processor Controlled Interswitch Matrix (PCIM) facility for interchange and localized adjustment of target data, displays and maps as well as automatic target handover. Connection of remote installations can be via either microwave or coaxial, twin-wire or fiber-optic cable links.

Three slotted-array antenna configurations are optionally available for X-band (3cm) operation and one for S-band (10cm).

Introduction of the 8630 VTC follows recent installation of an X-band system at Dalian, China's largest foreign trade port with an esti-

mated annual traffic throughput of 45 million tons.

For further information and free

literature on the new VTC radar from Krupp Atlas Elektronik,

Circle 35 on Reader Service Card

(Advertisement)

## Understanding Marine Rope Specifications Increases Safety And Cordage Life

By John E. Richardson Jr.,  
Vice President, Columbian Rope Company



John E. Richardson Jr.

Rope, one of the oldest tools known to man, is also one of the most versatile tools available to man, but only in the hands of a professional user. In the hands of a novice, rope becomes a single purpose item, misused more often than used effectively. The objective of this article is to address the causes behind the misuse of rope by the professional—misuse that in many instances results in serious accidents—misuse that is all too frequent to be purely accidental—misuse that is all too common to be ignored.

As a salesman of rope for close to 40 years, I'm convinced that the misuse of rope by the professional can be traced in large measure to confusion in the interpretation of information provided by the manufacturer on breaking strength, tensile strength and work load for individual ropes. Comparing information published by two reputable rope manufacturers can be like comparing apples to oranges unless identical test procedures are used, which is not always the case.

I'd like to eliminate one area of confusion at this point. Since the same test is used to determine tensile strength that is used to determine breaking strength, and since tensile strength is established at the point where the rope breaks under tension, tensile strength and breaking strength are for all purposes, one and the same. Breaking strength/tensile strength is normally determined by certain laboratory tests that mechanically establish a point of or degree of failure. There are several methods by which this test procedure is carried out.

Federal Test Method Standard 191, Method 6015.1 covers testing three-strand and eight-strand plaited ropes that are spliceable. Three-strand tests are performed with eye splices made with a specified number of tucks (a method of splicing) in the specimen being tested, with predetermined variables including lengths and the specific rate of load or strain level to be applied. The eye-spliced ends are placed over a drum or bollard head on the testing machine. The rope specimen is then subjected to an even strain as the drums or bollard heads are separated by mechanical means.

Ropes that cannot be eye-spliced, such as braids, are covered by Federal Test Method Standard 191, Method 6016. In this test, the rope is wrapped around a drum and held by clamps as mechanical strain is applied. It is at this point that a manufacturer's published data on breaking/tensile strength can become confusing or misleading.

(continued)

**W/INCHES  
CRANES**

**HATCH  
COVERS**

**DEL GAVIO**

**MARINE HYDRAULICS, INC.**

SALES • SERVICE • CONSULTING • PARTS

Complete Repairs  
On All Types of Electro Hydraulic  
Steering Systems and Deck Machinery

Hydraulic Pump Testing,  
Rebuilding For Certification

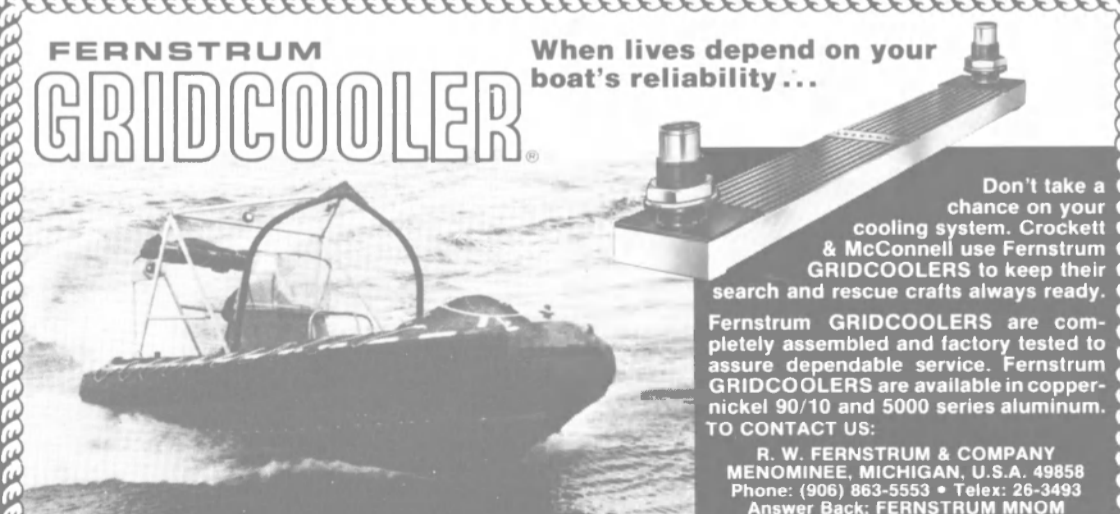
24 Hour Service, Worldwide  
207 West Central Ave., Maywood, N.J. 07607  
Telephone: (201) 843-4700  
Telex: 132610 DELMARINE

Circle 155 on Reader Service Card

**FERNSTRUM**

**GRIDCOOLER**

When lives depend on your  
boat's reliability...



Don't take a chance on your cooling system. Crockett & McConnell use Fernstrum GRIDCOOLERS to keep their search and rescue crafts always ready.

Fernstrum GRIDCOOLERS are completely assembled and factory tested to assure dependable service. Fernstrum GRIDCOOLERS are available in copper-nickel 90/10 and 5000 series aluminum.

TO CONTACT US:  
R. W. FERNSTRUM & COMPANY  
MENOMINEE, MICHIGAN, U.S.A. 49858  
Phone: (906) 863-5553 • Telex: 26-3493  
Answer Back: FERNSTRUM MNOM

Circle 165 on Reader Service Card

## Understanding Rope

(continued)

Rope, in use, must be tied, fastened or spliced in some manner, and in every case the knot, splice or bend then becomes the weakest place in the rope—the point where the breaking/tensile strength is at its lowest. Therefore, if the "test" used does not employ a "weak point," i.e.—jointure, knot or splice, the published result is not a true example of how the rope will perform in service.

Listed below are some of the more common variables, as well as mention of factors that may cause wide variation in test results.

1. A manufacturer may conduct numerous tests, but publish only the test that shows the highest strength. Reputable companies will conduct multiple tests, and their advertised strength will be an average of the highest and lowest break or tensile strength.

2. Some manufacturers, in an effort to straddle issues of strength, will distort data with a variance to the published strength, i.e.— $\pm$  5 percent or  $\pm$  10 percent.

3. Another variable the consumer must be aware of is the actual point testing from which a determination is made as to rope failure, i.e.—the point where the rope breaks in two, or one-strand breaks. The company with high integrity will establish rope failure at the point where one strand breaks, which is also the point that the rope ceases to be a safe, usable tool. It is possible to continue test procedure with two remaining strands intact to obtain higher readings.

4. Factors such as conditioning of rope before testing, i.e.—tempera-

ture and humidity control, whether the rope is wet, or dry, are variables that can influence test results.

5. The consumer should always be aware that all nylons, polyesters and polypropylenes are not the same. One major synthetic fiber producer markets over 40 grades of nylon and 75 grades of polyester. The qualities or raw material vary from manufacturer to manufacturer, application to application.

6. A sixth variable is rope construction. Normal stated figures are on regular or standard construction. Ropes with a loose twist or softer construction will be lighter and stronger than ropes with harder twists, but will not wear as well and resist abrasion as well. When in doubt as to the construction qualities of the rope he is buying, the consumer should determine the exact requirements needed for the rope he will use and then make sure that the manufacturers published specifications meet that need.

7. A final variable is that the buyer should understand that a manufacturer published breaking strengths/tensile strengths are based on new rope specimens only. Once a rope is used those strengths are not reliable.

Working loads are stated, in a majority of cases as a percentage of breaking/tensile strength, i.e.—5 to 1 or 20 percent, 10 to 1 or 10 percent. More and more often in today's markets, the manufacturer will not publish working load figures and percentages unless he knows and understands the exact requirements of the job to be done. Without all the facts, working load estimates are often an exercise in futility.

In closing, I would like to caution the buyer and user of ropes to know

his supplier, or his supplier's source. I'm proud to be able to state that my company, Columbian Rope Company, had never resorted to distorted or questionable specifications. I believe the same can be said about the majority of U.S. rope manufacturers, large and small.

But let the buyer beware, there are manufacturers who do not test their ropes, and simply use competitors data for their own purposes. It boils down to one simple fact. When

purchasing rope, a reputation for quality, a history of product integrity and a record of standing behind its products and the dealers who sell them are the buyer's main safeguard against false statistics and shoddy merchandise.

**COLUMBIAN ROPE COMPANY**  
P.O. Box 270  
Guntown, MS 38849  
Phone: 601-348-2241 in MS  
800-821-4391 Other

Circle 101 on Reader Service Card



The M.S. Europa, seen here on the Weser River in West Germany, is the first passenger vessel to be propelled by Schottel Pump-Jets.

## Schottel Pump-Jets Allow Passenger Boat To Operate Even In Shallow Water

Because low water levels frequently cause major problems for vessels navigating on inland waterways, the West German firm of Schottel developed a new propulsion concept, the Schottel Pump-Jet, which provides propulsion power even in shallow waters.

After extensive tests had been

conducted on the Rhine with a similar passenger vessel, two Schottel Pump-Jets, type SPJ 55, were installed on the passenger vessel M.S. Europa, built by Lux-Werft shipyard in West Germany.

The Pump-Jet is integrated into the bottom of the vessel and consists of a semi-axial centrifugal

## SEALED BID SALE!

### OFFSHORE PARTY BOAT

The RANGER V offshore party boat is equipped with twin screws, diesel power, flush deck, modified "V" bottom and all welded aluminum throughout. Dimensions are 117.6' long by 25' wide by 6.9' deep. Detroit Mdl. 16-V-149 engines rated at 2,200 HP with estimated speed of 18 knots.

### STEEL DIESEL PUSHBOAT

The CAPTAIN JOHN H. PALMER steel diesel pushboat equipped with twin screws, diesel power, flush decks, 3-tier deck-house, split level pilothouse. Dimensions are 102' long by 35' wide by 9' deep. GM Mdl. 12-645E2 engines rated at 1,500 BHP.

Vessels are located in Sabine Pass area, Texas. Inspections will be conducted by appointment only throughout January, 1989. Secured Party reserves the right to accept or reject bids and to waive informalities. To be sold "AS IS" and "WITH ALL FAULTS." Sealed Bids will be received up to 1:00 p.m. on Feb. 2, 1989, at which time they will be opened.

Contact PMI for Information/Bid Package at  
(713) 691-4401



**PLANT & MACHINERY INC.**  
AUCTIONEERS LIQUIDATORS APPRAISERS REAL ESTATE BROKERS

P.O. Box 24010 • Houston, TX 77229  
FAX (713) 672-7905 • TELEX #775572 (PMI HOU)

ENGINEERING

## SENIOR PORT ENGINEER

MARITRANS OPERATING PARTNERS L.P. has an immediate employment opportunity for a "hands-on" Port Engineer with at least 8 years marine engineering experience. Dedicated to the application of innovative technology and sound engineering practices, MARITRANS is the nation's leading independent marine transporter of petroleum products.

We offer challenge and responsibility to a results-oriented, self-starting professional. Our Port Engineers serve a key role in directing assigned maintenance and repair projects, managing vessel engineering and maintenance personnel, and applying ABS and USCG regulations. This position reports to the M&R Manager at our Eastern Fleet Center in Philadelphia, PA. Up to 50% travel is required.

The ideal candidate should be a licensed engineer with a BS Degree in Marine Engineering or equivalent experience in:

- Tug & Barge Industry
- Hull & Machinery Maintenance & Repair
- Diverse Fleet & Equipment
- Management By Objectives
- Budgeting & Expense Control
- Computer Applications

We are proud to offer our employees a competitive total cash compensation package along with an employee benefits program that is among the best in the industry. Relocation assistance is negotiable.

Please send us your resume and salary history if you'd like to confidentially explore this opportunity. Qualified candidates will be contacted immediately.

Senior Port Engineer

**MARITRANS GP INC.**

Three Parkway, 14th Floor, Philadelphia, PA 19102



Equal Opportunity Employer M/F/H/V

MARITRANS maintains a policy of zero tolerance of the possession or use of alcohol and/or illicit drugs aboard its vessels.

pump whose spiral housing ends in a nozzle. The centrifugal pump sucks in water from underneath the vessel and ejects it again under the bottom of the vessel at an angle of 15 degrees. This produces a propulsive force in a direction contrary to that of the jet flow. The jet itself can be rotated through 360 degrees, which makes the craft outstandingly maneuverable.

The Pump-Jets propelling the 128-foot-long Europa are driven by two MAN B&W Diesel engines, type D 2866 E, each with an output of 178 kw/242 hp at 2,100 rpm. A speed of 13 km/h was measured on

the Rhine with the vessel traveling upstream, this being equivalent to 19 km/h in still water. The jets are equipped with reversing gears, enabling the units to be cleaned without any special equipment when the vessel is operating in shallow water or in waters containing a large amount of coarse foreign matter.

For increasing maneuverability, the M.S. Europa is also equipped with an electrically driven Schottel Pump-Jet of type SPJ 20 in the bow.

For more information and free literature on the Schottel Pump-Jet,

Circle 37 on Reader Service Card

## Hopeman Brothers Named U.S. Representative For IMAC

—Free Literature Available

Hopeman Brothers of Waynesboro, Va., recently announced that it was named the exclusive U.S. representative and distributor for joiner products manufactured by IMAC of Helsingborg, Sweden.

IMAC, is one of the world's leading suppliers of joiner bulkhead panels, doors and modular wet space units. IMAC's products have been installed on ships in the Navy's auxiliary fleet, the Maritime Administration's Reserve Fleet, and Carnival Cruise Lines' fleet, as well as a large number of tankers, cargo

and containerships built around the world.

Hopeman Brothers is one of the largest suppliers and installers of joiner materials in the U.S. It has supplied these materials for a large number of the major commercial and military ships built in the U.S. in the last 10 years. IMAC's products will supplement Hopeman Brothers' present product line, and are all Coast Guard approved.

Added to Hopeman Brothers' present line will be: Rockwool soft core bulkhead panels; Navilite hard core bulkhead panels; Marine joiner doors; and one-piece modular wet space units.

For more information and free literature,

Circle 75 on Reader Service Card

## Universal Tankships Installs NTC Ship Manager Software System

Universe Tankships (Del.), New York, N.Y., a division of National Bulk Carriers, has installed a micro-computer "NTC Ship Manager" software system furnished by Nautical Technology Corp., also of New York City.

The multiship office system provides a fully integrated, self-contained materials management capability covering all spare parts, stores, consumables, etc., for UTD's fleet of eight tankships and two warehouses. The system is installed on a local area microcomputer network (LAN) so that the integrated database can be accessed and used as required by purchasing, engineering and accounting departments.

The "NTC Ship Manager" system originates and tracks requisitions, RFQs and purchase orders and maintains an up-to-date inventory status and record for each vessel in the fleet. UTD believes the system will significantly improve control of inventory costs and enhance operating efficiency for its fleet.

The system can be expanded to include additional ships and to incorporate an integrated M&R function. Individual shipboard systems can be linked to the office system by satellite communication. The office

system can also serve as an executive information system (EIS) to provide "on-line" status reports to support management decision-making.

Nautical Technology Corporation provides consulting services, systems analysis, planning, design, implementation and support of micro-computer-based management information systems for the maritime industry. For free literature giving full information,

Circle 34 on Reader Service Card

## Versatile Pacific Wins C\$35-Million Contract To Build Two Ships

Versatile Pacific Shipyards Inc. of Vancouver has been awarded a C\$35.1-million contract to build two Type 500 Search & Rescue vessels for the Canadian Coast Guard.

The vessels, which will each have an overall length of 164 feet, breadth of 36 feet and draft of 13 feet, are destined for service along the Canadian west coast. Delivery of the first vessel is scheduled for early 1990 and the second vessel some 20 weeks later.

For free literature detailing the shipbuilding and ship-repairing services of Versatile Pacific,

Circle 41 on Reader Service Card

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

New York City  
350 Broadway  
New York, NY 10013  
(212) 431-6900

San Francisco  
667 Mission Street  
San Francisco, CA 94105  
(415) 777-0500

Boston  
Philadelphia  
Washington, D.C.  
Newport News  
Charleston  
Norfolk

Bremerton  
San Diego  
Honolulu  
Oxnard

**M. ROSENBLATT & SON, INC.**

**GEORGE G. SHARP, INC.**

SYSTEMS ANALYSIS  
NAVAL ARCHITECTS - MARINE ENGINEERS

100 CHURCH STREET - NEW YORK, N.Y. 10007  
(212) 732-2800

WASHINGTON, D.C. (703) 892-4000  
VIRGINIA BEACH, VA. (804) 499-4125  
PHILADELPHIA, PA. (609) 772-0888  
TWX: 710-581-2758 CABLE: GEO SHARP NYK

**STURGEON BAY MODEL SHOP**  
SHIP MODELS SINCE 1941

Wm. L. Herbel  
187 N. Ninth Ave.  
Sturgeon Bay, WI 54235

phone  
414/894-2859  
414/743-2921  
414/744-3091

**DECK OFFICER COURSES**

USCG approved - RADAR OBSERVER COURSE  
USCG approved - FIREFIGHTING SCHOOL  
Also USCG Exam Prep Courses for CAPTAIN, MASTER, AB, ENGINEER, OMED

1-800-BEST-ONE

**T.W. SPRETTGENS**  
TORSIONAL VIBRATION SPECIALISTS  
OUR 42ND YEAR SERVING INTERNATIONAL CLIENTS

156 W. 8th Ave.  
Vancouver, Canada V5Y 1N2

(604) 879-2974  
Telex 0455188  
FAX: (604) 879-6588

*Trans-International Marine Services Corp.*

**TIMSCO**  
MAINTENANCE MONITORING SYSTEMS  
INVENTORY CONTROL SYSTEMS  
P.O. Box 91360  
Mobile, Alabama 36691 205/666-7121

*Seaworthy Systems, Inc.*

Marine Engineers and Naval Architects

P.O. Box 338  
Essex, CT 06426  
P.O. Box 205  
Solomons, MD 20688  
Telex: 517931 Seaworthysys

17 Battery Pl.  
N.Y. N.Y. 10004  
2 Skyline Place / Suite 311  
Falls Church, VA 22041

**R.A. STEARN INC.**  
NAVAL ARCHITECTS and MARINE ENGINEERS

253 N. 1st Avenue  
Sturgeon Bay, WI 54235  
Phone (414) 743-8282 TLX 753166, ESL 62388810

**Logistic Consultants, Inc.**  
INTEGRATED LOGISTIC SUPPORT SERVICES  
TRAINING, SUPPLY SUPPORT, TECHNICAL PUBLICATIONS  
RELIABILITY & MAINTAINABILITY STUDIES  
CONFIGURATION/DATA MANAGEMENT  
3008-C BIENVILLE BLVD., OCEAN SPRINGS, MS 39564  
PHONE: (601) 872-2766 FAX: (601) 875-6443  
MORGAN CITY, LA OFFICE PHONE: (504) 384-6120

**SENTEL**  
NAVAL SHIP ELECTROMAGNETICS

- Electromagnetic Compatibility Design
- Combat Systems Integration
- Topside Design / Antenna Arrangements
- Communication Systems Design

SENTEL CORP • 6713 Robinia Rd • Camp Springs MD 20748  
(301) 449-3630

Quality Management, Training, Technical Support, ILS and Marine Engineering Services

**SEACOR**  
15 Locations Worldwide

SYSTEMS ENGINEERING ASSOCIATES CORPORATION  
200 EAST PARK DRIVE  
MT. LAUREL, NEW JERSEY 08054  
(609) 866-2400

SEACOR is a subsidiary of Day & Zimmermann, Inc.

**VIBRANALYSIS ENGINEERING CORP**

- PREDICTIVE MAINTENANCE PROGRAMS
- VIBRATION ANALYSIS
- FIELD & SHOP BALANCE
- ACOUSTICAL CONSULTANTS
- COMPUTERIZED DATA COLLECTION
- MARINE APPLICATIONS

**VIBRANALYSIS ENGINEERING CORP**  
4380 S. Wayside, Suite 100  
Houston, TX 77087 713-643-1051

**WELDING CONSULTANTS USA**

- WELDING ENGINEERS
- DESIGNERS
- TECHNICIANS

10399 Paradise Blvd., St. Petersburg, FL 33706 (813) 367-7067  
FAX (813) 360-9417

Milwaukee, WI • Houston, TX • Chicago, IL • Norfolk, VA

# CLASSIFIED AND EMPLOYMENT ADVERTISING

**HOW TO PLACE CLASSIFIED ADVERTISING:** Mail clearly written or typed copy to: MARITIME REPORTER, 118 East 25th Street, New York, NY 10010. Include any photos, drawings or logos if required. Specify size of ad and number of insertions. Classified Advertising — Per Issue Rate: Classified advertising is sold at a rate of \$70 per column inch . . . MARITIME REPORTER'S classified section carries more advertising and sells more products than any other publication in the marine industry. Closing date for classified advertising is 20 days prior to the date of the issue. For further details contact John C. O'Malley at (212) 477-6700. Send all advertising material to MARITIME REPORTER And Engineering News, 118 East 25th Street, New York, NY 10010.

## TECHNICAL UNIVERSITY OF NOVA SCOTIA NAVAL ARCHITECTURE

Applications are invited for a tenure track position in **Naval Architecture**, a postgraduate degree program administered by the Mechanical Engineering Department. Highest priority will be given to individuals specializing in the area of **Ship Structural Analysis**. The successful candidate will be expected to teach courses in Ship Structural Analysis and Design; to supervise postgraduate student research; and to supervise undergraduate and postgraduate design projects.

The appointment will be made at a salary and rank commensurate with qualifications and experience. An earned doctorate in **Naval Architecture** or equivalent is required. Applications will be received until the position is filled.

Send Resume with names and addresses of three references to:

**Dr. C.C. Hsiung**  
Professor of Naval Architecture  
Department of Mechanical Engineering  
Technical University of Nova Scotia  
P.O. Box 1000  
Halifax, Nova Scotia  
Canada B3J 2X4

In accordance with Canadian immigration requirements priority will be given to Canadian citizens and permanent residents of Canada.

## LICENSED MARINE ENGINEER— 15 YEARS EXPERIENCE

Available for worldwide employment with or without complete welding/machine shop and experienced personnel. Industrial and marine repairs, power plant maintenance, certified welding-structural, pipe, and heliarc. Call (617) 598-3103 for details.

**HVAC/Refrigeration Designer/Estimator/  
Detailer** with mechanical/electrical background for worldwide industrial/marine market. Confidential data to P.O. Box 1547, Beaumont, TX 77704.

## SERVICE COORDINATOR

Large international company has opening for a service coordinator in our marine division located in Bergen County New Jersey. Excellent opportunity for individual who has experience in a service environment; with ship repair experience being preferred.

Responsibilities will include daily phone contact with our customers selling product service and spares. Additional duties involve scheduling and coordination of service jobs, dispatching field service engineers, expediting spares orders, invoicing, expense report validation, and maintaining customer files.

Your qualifications should include a working knowledge of hydraulic systems and an understanding of electrical controls. The ideal candidate would be a mature well organized self starter with excellent communication skills who can work with minimal supervision. A working knowledge of PC's is desirable.

Competitive salary and excellent benefits package. For consideration send resume and salary requirements to:

Box 101, Maritime Reporter, 118 East 25th Street, New York, New York 10010

## DESIGN & ENGINEERING

### HULL/STRUCTURAL DESIGN MANAGER

Degreed Naval Architect/Marine Engineer with minimum 3-5 years experience in new vessel designs and conversion modifications. Projects will include fishing vessels, research vessels, harbor service craft, passenger vessels, etc. Candidate must be familiar with arrangements, structures, foundations, habitability and damage control. Must be able to schedule and direct others.

### PIPING/MECHANICAL DESIGN MANAGER

Marine Engineer with minimum 3-5 years experience in new vessel design and conversion modifications. Must be familiar with machinery, piping systems, propulsion, HVAC, refrigeration, hydraulics, etc. Must be able to schedule and direct others.

Qualified candidates please submit resumes in confidence to:

R.I.C.  
P.O. Box 830  
San Pedro, CALIF 90733  
U.S. Citizenship Req'd



## THE TRINITY MARINE GROUP

Halter Marine - Equitable Shipyards  
Moss Point Marine - Gretna Machine  
Aluminum Boats

### IS EXPANDING!!

#### We Need:

**Naval Architects, Electrical Engineers,  
Mechanical Engineers, and Draftsmen**

*New Office Located on Gulf of Mexico  
(Gulfport, Miss.)*

*Large Backlog of Commercial  
and Military Contracts*

*Immediate Openings*

*Good Benefits Package*

Send resume to:



Trinity Marine Group  
P.O. Box 29266  
New Orleans, LA 70189  
(EOE/M/F)

## MARINE VIDEO

Take a video trip aboard a river towboat. Minnesota, Mississippi and Ohio Rivers. 1300 river miles. 95 minute video tape. To order send \$29.95 to:  
Marine Video, Box 300MR, Central, IN 47110.

## For Barge Rentals or a Complete Marine Package

## Call the Barge People.

Our experience and knowledge in serving a wide variety of industries enables us to provide the right size and type of barge and tow to make your marine operations profitable.

- Large, diversified fleet for inland, oceans and speciality service
- Experience in arranging and managing marine packages
- 20 convenient fleet locations along Gulf Coast and upper river

Rentals - Sales - Service

New Orleans  
(504) 949-7544  
Telex 58-4311  
Fax (504) 945-5513  
2300 Surekote Rd.  
N.O. LA 70117

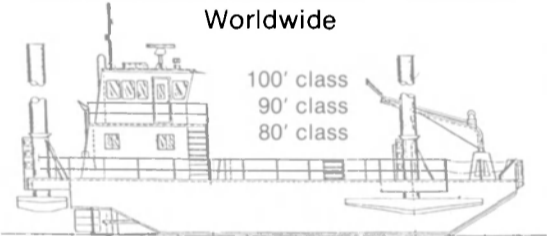
Houston  
(713) 452-5887

Parkersburg  
(304) 485-4494

St. Louis  
(314) 469-0510



## Lift Boat Rentals—Sales Worldwide



100' class  
90' class  
80' class

**Shoreline Fleet  
713-452-7910 Houston**



## BARGE MOUNTED CRANE

LIMA Model 2400 Combination Clam-Drum Machine S# 712B198, mfg. 1980, Cat D-398, 3 drums, 120' boom, (1) 6 yd. clam bucket, (1) 6 yd. drag bucket. Pedestal mounted on barge—39'6" x 140' x 8' deep with (2) 24" sq. x 40' long spuds, (1) 50' walking spud, 3-drum winch, (2) 60 KW generators, living quarters, (2) 25,000 gal. fresh water compartments, (1) 28,250 gal. fuel compartment.

## HAWKINS EQUIPMENT COMPANY

1475 Thomas Street, Memphis, Tennessee 38107  
(901) 525-5746 800-238-6574

## DRY DOCKS or BARGES

For new construction, prefabrication, repairs, and conversions :

call for your special needs



**CONRAD INDUSTRIES, INC.**  
504 384-3060, P.O. Box 790  
Morgan City, LA 70381



## ARCTEC OFFSHORE CORPORATION

An Offshore Scientific Company

### SUPPORTING THE MARINE AND OFFSHORE INDUSTRIES WITH:

- MODEL TESTING
  - RESISTANCE AND PROPULSION
  - MANEUVERING
  - SEAKEEPING
- SHIP TRIALS AND INSTRUMENTATION
- ARCTIC ENGINEERING
- COASTAL ENGINEERING

#### Office and Laboratory Facilities:

West Coast— East Coast—  
 578 Enterprise Street 9104 Red Branch Road  
 Escondido, CA 92025 Columbia, MD 21045  
 Tel: (619) 746-5511 Tel: (301) 730-1030  
 Fax: — (619) 746-3035 Fax: — (301) 730-0912

# DRYDOCK

2500 tons, built in 1982, located on the Texas Gulf Coast

## Hassell & Associates

12900 Preston Rd., Suite 500

Dallas, TX 75230

214-385-8319

214-980-7923 (Fax)



### TUGBOATS

"Brave", 1982 yr., 46'7"x20'1"x6'7", two Detroit 6-71s  
 "Papoose", 1980 yr., 47'6"x20'1"x6'7", one Detroit 8V-71  
 "Apache", 1980 yr., 61'5"x24'1"x8'7", two Cummins KTA-1150s  
 "Sioux"—same as "Apache" above  
 "Cheyenne", 1980 yr., 56'4"x24'1"x8'6", two Cummins KTA-1150s  
 "Shawnee"—same as "Cheyenne" above  
 "Comanche", 1979 yr., 56'8"x24'1"x8'7", two Cummins KTA-1150s  
 "Choctaw", 1981 yr., 63'x24'x9', two Cummins KTA-1150s

"Call for Prices"

### HAWKINS EQUIPMENT COMPANY

1475 Thomas Street, Memphis, Tennessee 38107  
(901) 525-5746 800-238-6574

# FOR SALE

60 Ton Clyde Model 28-DE-11 Floating Crane with 115" Magnet. Boom Length: 110' Barge Dimensions; 111' x 63' x 12'-1"

Contact:

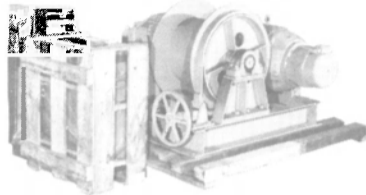
Jay Zimmern or  
Robert Kelman  
Prolerized Schiabo Neu  
(201) 333-3131



## SPECIAL OFFERING. Windlasses — Hatches — Doors — Large Oil Transfer Pumps — Electric Winch ALL UNUSED NEW AND SUBJECT TO PRIOR SALE

### GENERAL PURPOSE WINCH 3500 LBS AT 200 FPM

NEW  
UNUSED



EX  
U.S.N.

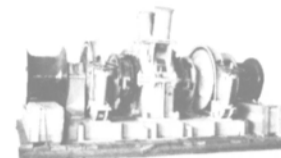
A.C. Motor drive — 25/12.5 HP — GE 440/3/60 — 40°C AB — 1750 RPM — type KR — full load amps 32. Motor drives winch through Falk reduction gear. Has compressor hand brake with controls.

SPECIAL PRICE: \$2950.00 F.O.B. Philadelphia, PA

### QUICK ACTING WATERTITE DOORS WHEEL OPERATED—ABS SPECS

36"x54" RH & LH — Wheel operated — \$648.00 each  
30"x69" RH & LH — Wheel operated — \$688.00 each

Weathertite — 2 Individual Dogs  
30"x69" RH & LH — \$495.00



**WINDLASS** - Heavy Duty for 1 1/2" Chain-below deck motor drive. Can handle two 7000 lb anchor & 60 fathom of chain at 7 fathoms per minute. 56" Wildcat centers - with extended warping heads - Total wt including Preselly 50 HP 230 volt DC motor drive & controls - 27,500 lbs. Drive-vertical shaft & worm drive Convert to Hydraulic or Charge motor to 440 volts AC.

\$30,000 Value for \$4750.00 F.O.B. Baltimore, MD

### HATCHES 24"x24" — 12" coaming = 3/8" Cover — 1/4" 4 Dogs — 2 Hinges \$795.00



Typical example, except ours have 16 Bolts

6 pieces — sizes 66"x72" - with 12" coaming \$1766.00  
4 pieces — sizes 58"x72" - with 12" coaming \$1566.00

1/2" Coaming & 5/16" Cover. Stainless Steel pins & washers & bronze wingnuts — 3 hinges on long side — 2 lifting handles

Above hatches are not spring loaded.

Weight = 66"x72" - about 1500 lbs weights are  
58"x72" - about 1300 lbs only approx.

### NEW WATERTIGHT DOORS

#### 6 Dog

6-Dog right and left hand hinged doors with frames. 1/4" panel and 5/16" frame meet ABS Specs.

#### Sizes

26"x48" RH & LH — \$365.00 each  
26"x60" RH — \$375.00 each  
30"x60" RH & LH — \$389.50 each



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

### MOTOR DRIVEN ROTARY HORIZONTAL PUMPS

WITH 4-SPEED 440/3/60 MOTOR

\$4750.00 F.O.B. Philadelphia, PA



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

# MARITIME POWER CORPORATION

200 Henderson Street • Jersey City, NJ 07302 • Telephone: 201-433-0870  
Fax: 201-433-1459 • Telex: 620533 MARPOW

## SERVICE • REPAIR • PARTS CONSULTING • DESIGN

### CUNNINGHAM MARINE HYDRAULICS CO., INC.

201 Harrison St. • Hoboken, N.J. 07030  
(201) 792-0500 (212) 267-0328  
FAX # (201) 792-7716

JACKSONVILLE, Florida 32202  
(201) 792-0500

TWX 710-730-5224 CMH Hoboken, NJ



## PROUDLY SERVICING THE MARINE AND OIL INDUSTRY



WITH



### FACTORY NEW

- SCUTTLES
  - HATCHES
  - SINGLE BOLT MANHOLES
  - INDIVIDUALLY DOGGED DOORS
  - QUICK ACTING DOORS
  - BOLTED PLATE MANHOLES
  - FIXED LIGHTS
  - PORTLIGHTS
  - LADDERS
  - PLATFORMS
  - HANDRAILS
  - STRUCTURAL FABRICATION
- Fabricating In  
★ Steel  
★ Aluminum  
★ Stainless

ALSO, ALWAYS IN STOCK:

• CHAIN • ANCHORS • MARINE HARVE.  
• WINCHES • WINDLASSES • CAPSTANS

WE ALSO HAVE A BIG SELECTION OF USED AND RECONDITIONED DOORS AND HATCHES IN STOCK NEXT TIME YOU HAVE A NEED. GIVE US A CALL.

P.O. BOX 596 Wilmington, CA 90748  
Phone: (213) 436-4288 • Telex 65-6466  
• Fax (213) 495-1045

• STOCKS IN THE WEST COAST AND THE GULF



## A New Source For CP Propeller And Control System Service —Literature Available

A new firm, MCR Engineering Company, based in East Walpole, Mass., founded in July 1988 by **Stuart Robinson** and **Tom Mack**,

### S.S. UNITED STATES RADIO ROOM

Complete, as new condition HF, MF, low freq., telegraph, radio telephone transmitter and operating console. FCC approved. Call **P.J. Plishner Marine** 203-755-6478.

#### FUEL OIL TRANSFER PUMPS

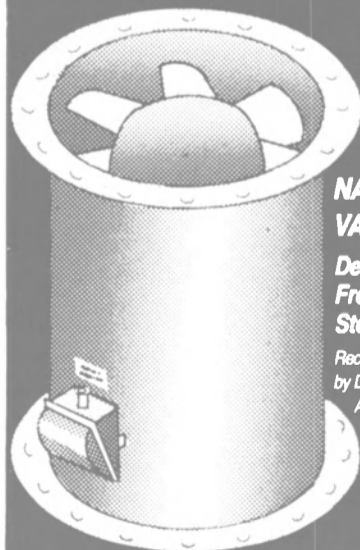
2 ea. identical. Complete. Operating when taken out. DeLaval Turbine Pump Mfg., Model 323AVX337, with GE 60 HP 60-motor. Pumps 250 or 500 gpm. Like new. New price \$24,000. Will sell for \$7,495. Consumer Fuels, 205-837-5660.

## Pile-Gard® Protection Installed on Piles for Less Than 10% of Replacement Costs.

Pile-Gard **STOPS** destruction of timber by Marine Borers and controls corrosion of steel with no expensive downtime. Call or write for free case histories. Toll Free 1-800-241-0240.

Osmose Marine Division  
P. O. Box 117, Griffin, GA 30224-0117 404-229-1537

**JON M. LISS ASSOCIATES, INC.**  
411 BOREL AVENUE, SUITE 505 • SAN MATEO, CALIFORNIA 94402



**NAVY STANDARD  
VANEAXIAL FANS**

Delivery  
From  
Stock

Reconditioning and Rewinding  
by Dahl Beck Electric.  
Available with Warranty.

**(415) 573-9191**

TELEX 17-2655 GOJON SMT  
FAX (415) 572-8458

now provides service and parts support for CP propellers, thrusters and control systems. **Herb Reinert** and **Bob Bergquist** have since joined the company.

**Mr. Mack**, **Mr. Robinson** and **Mr. Reinert** were the training coordinator, assistant manager and deputy manager, respectively, for the Marine Service Department of a large manufacturer of CPPs, and bring many years of propeller service experience to the new organization.

**Mr. Bergquist**, a seasoned parts specialist well known in the industry, manages parts sales, contracts and purchasing activities.

With the goal of providing a unique brand of personal service to the industry, MCR Engineering offers complete on-site and off-site overhaul and repair, including parts support, system troubleshooting, control system design, retrofit and repair for all types of controllable pitch propellers and bowthrusters.

For more information and free literature,

Circle 19 on Reader Service Card

### Inspection Service Founded To Meet New Offshore Platform Inspection Requirements

Marine and Offshore Inspection Services, Inc., a new inspection service, has been established to fill the void created when responsibility for inspection of fixed offshore structures was shifted from the U.S. Coast Guard to rig/platform owners and operators.

**Peter J. Hill**, president of the New Orleans-based company, said the need for the new service now exists because many companies do not have the expertise or the desire to perform the required annual inspections. He added that some companies which do have the resources such as safety and training departments, prefer a third party inspection because of the inspector's independence and liability considerations.

The company offers services meeting the new regulations to owner/operators of facilities located on the U.S. Outer Continental Shelf, including the Gulf and West Coasts and Alaska. Following the inspections, the company reports its findings to the owner/operator of the rig or platform, who submits a report to the Coast Guard.

For more information and free literature,

Circle 18 on Reader Service Card

### Quality Shipbuilders Changes Name And Revamps Structure; Jack Edwards Named President

**Mark Partin**, chief executive officer of Quality Shipbuilders, Inc., Moss Point, Miss., recently announced the following changes within the shipbuilding firm.

**Jack Edwards** is now president and co-owner of the firm which has changed its name to Homeport Marine Services, Inc. **Mr. Edwards** joined Quality Shipbuilders as a vice president after his resignation as president of Halter Marine in Moss Point last year.

**Mr. Partin** said Homeport Marine Services has new construction capabilities of vessels up to 275 feet in length. He said the new firm is in the repair business and is capable of any type of marine and industrial repairs. He also said the restructured firm will continue to build vessels for the oil and fishing industry, but has broadened the scope of its operations to include equipment rentals and repair services for homeport-related industry or marine service companies.

Another feature of the revamped business is a general contractor division. Under its new division, **Mr. Partin** said the firm does a wide variety of general construction work for industry and business, including the erection of new buildings and renovation and remodeling work.

Quality Shipbuilders, founded by **Mr. Partin's** father, **Carl Partin**, has been in business in Moss Point for the past 17 years.

### Morrison-Knudsen Appointed EMD Distributor In 17-State Area And All Of Caribbean



Morrison-Knudsen Company Power Systems Division offers a complete line of EMD Series 645 engines to meet requirements of marine propulsion and marine generator set applications.

Morrison-Knudsen Company, Inc., Power Systems Division was recently appointed an authorized distributor by the Electro-Motive Division of General Motors Corporation. The division will sell and service the EMD Diesel Engine Power Products exclusively in a 17-state U.S. East Coast area and all of the Caribbean.

Power Systems offers a complete line of EMD Series 645 engines to meet requirements for marine propulsion and marine generator set applications. A complete power package with engine, reduction gear or generator and accessories is available.

Propulsion drives are also available with two, three, or four engines driving a common reverse-reduction gear, or with a straight-reduction gear when controllable-pitch propellers are utilized.

The GM 645 line of engines is available in 8-, 12-, and 16- cylinder Roots blown and 8-, 12-, 16-, and 20-cylinder turbocharged models. The horsepower ranges from 800 to 4,400.

For further information and free literature,

Circle 44 on Reader Service Card

### HYDRAULIC CRANES

Aerial Baskets  
Knucklebooms  
Digger Derricks  
Pressure Diggers  
HiRail Equipment  
80 Used Units in Stock  
sold as is or  
reconditioned

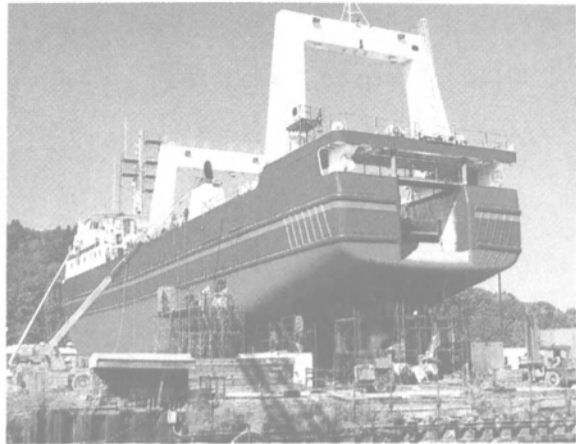
Wanted - listed used equip.

**OPDYKE'S** Trucks & Equipment  
Hatfield, PA 19440  
(PHILA. AREA) (215) 721-4444

**O.M.S.**  
**OCEAN MARINE**  
BROKERAGE SERVICES  
COMMERCIAL VESSEL BROKERS

PHONE (407) 631-6659 FAX: (407) 631-6673  
P.O. Box 1257 PORT CANAVERAL, FL 32920  
TELEX: 9102409743 OCEAN MARINE BR UQ  
Specializing in commercial vessels

## SWDiesel-Powered 'Arctic Storm' Is Largest U.S. Factory Trawler



The M.V. Arctic Storm undergoing conversion into a factory trawler for processing pollock into surimi.

The Arctic Storm, originally a U.S. Navy tanker built in 1943 in Tacoma, Wash., has been converted into what is now the largest U.S. factory trawler.

The 5,000-gross-ton vessel, 328 feet long with a 48-foot beam, was converted by Wright-Schuchart Harbor Company of Seattle in combination with a Korean shipyard which built the entire stern section with machinery plant.

The vessel relies on SWDiesel for its power generation from propulsion to electricity and

hydraulics. Propulsion machinery consists of a turbocharged, intercooled 16 SW 280, 750 rpm, 6,100-hp diesel engine which drives a single, free-rotating CP propeller in a Kort nozzle and the main shaft generator. The auxiliary plant consists of a six-cylinder SW 280 diesel engine, while the standby generator is powered by SWDiesel's six-cylinder FHD 240 engine.

The 13.7-foot propeller is powered through an Ulstein 2400 AGSC 35/85 vertical gear with hydraulic clutch. A PTO on the Ulstein gear drives a Reliance SDG-8 5004.4 shaft generator of 1,800 kw at 1,800 rpm.

SWDiesel supplied the complete engine modules including duplex oil filters and Alfa-Laval purifier system for the lube oil system of the main engine as well as the complete monitoring system with replaceable monitor modules.

The Arctic Storm, with its crew of 80-85, is now fishing in Alaska's Bering Sea, where it catches pollock and processes it into surimi. The trawl winches and net reels are powered by a low-pressure hydraulic system of Hydraulik Brattvaag. The trawler can handle up to 300 tons of pollock per day, processing it into 60 tons of surimi with fish meal as a by-product.

Both the fish meal plant and the water desalination system, capable of distilling 350 tons of water in 24 hours, were provided by Atlas Danmark.

Det norske Veritas supervised the reconstruction of the stern trawler.

For further information and free literature on engines from SWDiesel,

Circle 45 on Reader Service Card

## ASMAR Delivers MaK-Powered Cargo/Passenger Vessel To Chilean Navy

The Chilean shipbuilder ASMAR recently delivered the 2,767 light-displacement-ton transport vessel Aquiles, the largest vessel ever built in Chile, to the Chilean Navy. At the same time, ASMAR also announced that it has received a contract to build three fishing vessels for Guanyay, a member of the Copec Group of companies.

The Aquiles, a cargo/passenger vessel, is powered by two diesel engines—MaK 8M 453 of 3,600 hp each at 600 rpm and allowing maximum speed of 18 knots.

Electric power is provided by one 500-kw and one 75-kw generator.

Construction of the three new fishing vessels will start immediately, and they are due to be delivered by the last quarter of 1989.

For free literature giving full information on the facilities and capabilities of ASMAR,

Circle 72 on Reader Service Card

## 'Starship Atlantic' Undergoing \$6.5-Million Conversion At Lloyd Werft In Bremerhaven

The Starship Atlantic, Premier Cruise Lines' U.S. cruise vessel, is undergoing a \$6.5-million conversion at Lloyd Werft in Bremerhaven, which will increase its capacity 25 percent by raising the number of berths to 1,652. The vessel's casino area will be reconstructed, and new lifeboats will be installed.

The Starship Atlantic and the Homeric were both bought by Holland-America Line some six months ago. Starship Atlantic was when switched to Premier on a long-term lease. HAL will operate the Homeric, which will undergo a \$65-million lengthening at Meyer Werft within the next year.

For free literature giving full details on the facilities and capabilities of Lloyd Werft,

Circle 77 on Reader Service Card

## Marinette Marine Completes Yard Patrol Boat Contract



The YP's mission is to supplement classroom student training by providing essential hands-on experience in ship maneuvering, communication and navigation.

Marinette Marine Corporation recently delivered the last of 20 Yard Patrol (YP) training boats to the Naval Sea Systems Command. Thirteen of the YPs were delivered to the Annapolis Naval Academy in Annapolis, Md., and seven were delivered to the Naval Education and Training Center in Newport, R.I. The YP's mission is to supplement classroom student training by providing essential hands-on experience in ship maneuvering, communication and navigation.

The original contract for six YPs was awarded to Marinette Marine in August 1984. A modification to the contract for seven additional YPs was awarded in December 1984, and another option for seven more vessels was awarded in September 1985, bringing the total to 20.

The Yard Patrol training craft are of wood hull construction with an aluminum superstructure, overall length of 108 feet, a beam of 22 feet 9 inches, and full load draft of 5 feet 9 inches.

Marinette Marine also has under construction at its Wisconsin-based shipyard, three U.S. Navy Mine Countermeasures (MCM) ships.

Marinette Marine Corporation, founded in 1942, is a firm of engineers and construction specialists providing commercial and government clients with the latest state-of-the-art ship design and construction.

For free literature giving full information on the facilities and capabilities of Marinette Marine,

Circle 71 on Reader Service Card

## OMI Announces Acquisition Of Two Product Carriers By Rubicon Tankers Ltd.

OMI Corp., New York, N.Y., recently announced the acquisition of two 30,000-dwt product carriers by Rubicon Tankers Ltd., which is jointly owned with The East Asiatic Company Ltd. of Denmark. The two tankers, one a new-building and the other built in 1984, were delivered to Rubicon last month. The OMI joint venture has also chartered-in for several years two sister ships to the newbuilding acquisition.

Reflecting these additions, OMI's operating fleet totals 33 vessels, aggregating 2.1 million dwt. The company also has on order four new-buildings, totaling 509,000 dwt, scheduled to be delivered through 1991.

## Curry & Associates To Handle Ameron Marine Coatings

Tom Curry & Associates, Inc. has been appointed manufacturer's representative for the Ameron Marine Coatings Division in the New Orleans area.

As the Ameron representative, Curry will offer a comprehensive line of the company's internationally recognized protective coatings systems for the marine industry. Coatings for bottoms, topsides and tank linings include: Amercoat®, Dimetcoate®, Amerlock®, Amershield® and a recently introduced EPA-approved tin-free, self-polishing antifoulant developed by Ameron.

For more information and free literature on Ameron Marine Coatings,

Circle 68 on Reader Service Card



# SHIP'S STORES




**Quality Products For The Worldwide Marine Industry**

**Microflush Marine Heads** in stainless steel or vitreous china use only two quarts of water per flush. Options include rear or downward discharge, internal or remote flush activators.

**Marine Sanitation Devices** have no moving parts, no power requirements and low maintenance. Discharge by gravity or sump/pump. Accommodates crews from 3 to 100 men. IMO approved. USCG certified.

**Oily/Water Separators** in seven models: .15-5.0 cu. meters per hour. Coalescing technology means no replacement filters required.

**MICROPHOR. Quality Products**

Microphor, Inc. PO Box 1480, 452 E. Hill Rd Willis, CA 95490, U.S.A. Telephone: (800) 358-6280 In California: (707) 459-5563 Telex: 271283 (MICROPHOR WLLT) FAX: (707) 459-6617	Microphor Export Corp. 2 South Street Hythe Southampton, SO4 6EB England Telephone: 703/849495 Telex: 47288 (PCSUPP G)	Microphor Europe GmbH Postfach 80 03 59 Hültenstrasse 45 4320 Hattingen West Germany Telephone: (0 23 24) 29-5449 Telex: 8229974 (THH D)
---	--	--

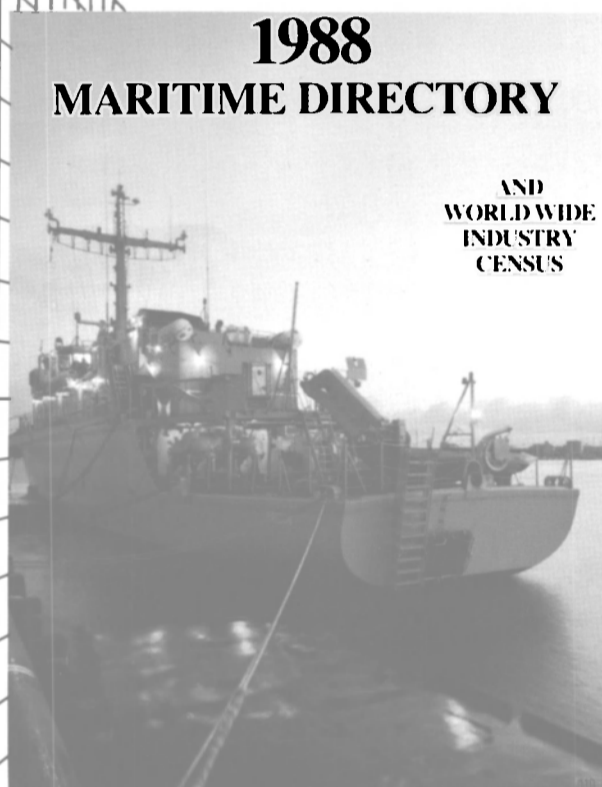
Circle 281 on Reader Service Card

ALL NEW  
OVER 400 PAGES!

# The *Who's Who* of the **U.S. Maritime Industry!!**

## **Everything You Need...**

*It is the world's only complete directory of  
U.S. ship owners and builders.*



### **It Includes:**

Names and titles of key personnel in every major vessel operating company and shipbuilding and ship repair company in the United States. From the smallest single boat operator and inland repair yard to the largest merchant fleet owners and major shipbuilders.

The Maritime Directory provides you with every conceivable detail.

### **Plus... The Worldwide Industry Census**

Thousands of details and statistics on vessel operations (ocean going, inland, harbor, offshore), offshore drilling, U.S. and foreign Navies, shipbuilding and ship repair (commercial and military). A review of the census reveals the major role played by the U.S. ship owners/operators and the U.S. Navy in our industry.

Order  
Your Own  
Personal Copy  
Today!

**MARITIME  
REPORTER**  
AND  
ENGINEERING NEWS

MAIL TO: MARITIME REPORTER, 118 East 25th Street, New York, NY 10010

NAME \_\_\_\_\_

POSITION \_\_\_\_\_

COMPANY \_\_\_\_\_

BUSINESS \_\_\_\_\_

ADDRESS \_\_\_\_\_

Enclosed is my remittance of \$110.00 per copy for \_\_\_\_\_ copies of the Maritime Directory and Worldwide Industry Census.

Please bill me.     Please bill my company.

Circle 125 on Reader Service Card

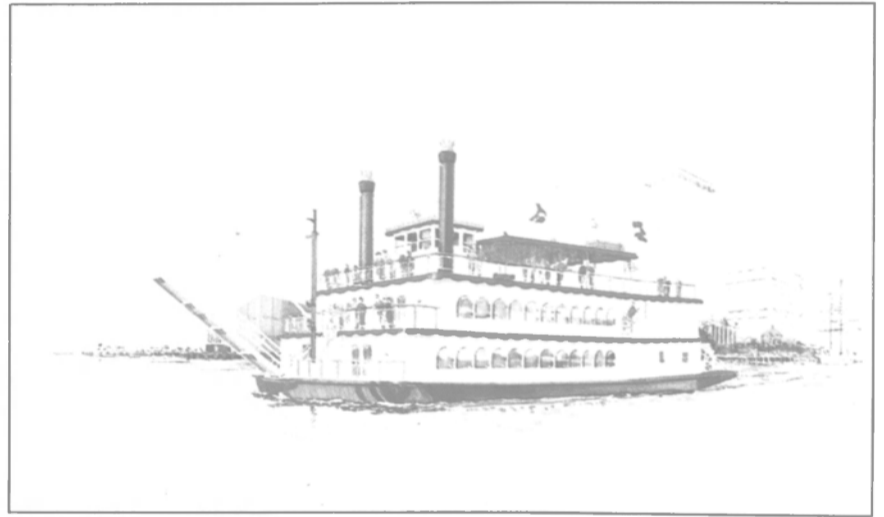


# **AWARD WINNING DESIGNS—1988** **from** **SERVICE MARINE INDUSTRIES, INC.**



**A very sophisticated lady—she's the M/V BAY LADY, and she's 140' of total luxury: custom bars, super galley, soundproofed, air-conditioned for comfort of 600 passengers. She's the pride of Baltimore Harbor Cruises.**

**A charming but thoroughly modern lady. She's the M/V ANNABEL LEE, a 600 passenger, 108' built for Heritage Cruises of Richmond, Virginia. Complete galley, two bars and dance floors, air-conditioned, sophisticated sound and PA system; old fashioned luxury brings customers back again and again.**



**A sleek mega-yacht for dinner and excursion. A totally new sophisticated look for the 1990s, the M/V SPIRIT OF NORFOLK is 175' of air-conditioned, whisper-quiet comfort for her 490 passengers. Haute cuisine galley, custom bars, and space for show and dance review fit the needs of Cruise International like a kid glove.**

**SERVICE MARINE INDUSTRIES, INC. IS A FULL SERVICE SHIPYARD — DESIGN, ENGINEERING, CONSTRUCTION, INTERIOR DECORATING — MODULAR DESIGN OR CUSTOM BUILDING TO YOUR SPECIFICATIONS.**



## **Service Marine Industries, Inc.**

P.O. Box 3606 • Morgan City, LA 70381 • (504) 631-0511 or (504) 764-1817

Circle 198 on Reader Service Card

---

# WORLD CLASS.

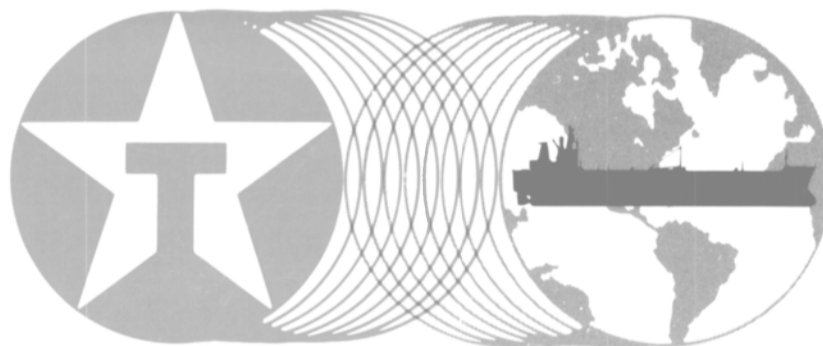
Texaco continues to be a dedicated supplier of quality bunker fuel and marine lubricants to ships around the world. Our premium marine engine oils, including TARO Special, DORO AR 30, TARO XD, TARO DP and TARO XL, are all proven performers. And our staff of experienced marine representatives is ready to help you with technical advice on lubricant selection and use.

To supply your bunker fuel and lubricant needs, our computerized system helps us process your orders quickly and accurately. And prompt deliveries allow you to maintain critical sailing schedules.

Add up all of these factors, and you'll agree that Texaco International Marine Sales is a "World Class" operation. And that's to your advantage the world over.

---

## TEXACO



## WORLDWIDE MARINE FUELS • LUBRICANTS

---

**For complete information and to place your order, contact:**

**Texaco Inc.**

International Marine Sales  
2000 Westchester Avenue  
White Plains, NY 10650

Phone: (914) 253-4000  
Cable: TEXMAROIL  
HARRISON NEW YORK STATE  
Telex: New York 791144

**Texaco Ltd.**

International Marine Sales  
1 Knightsbridge Green  
London SW7 1RU

Phone: 01-584-5000  
Cable: TEXMAROIL LONDON SW1  
Telex: London 8956681  
Ask for the 'Bunker Desk.'