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ENGINEERING NEWS



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OCTOBER 1989 ISSUE

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Before You Buy 567 A & B Engine Parts, Compare

Their Invoice

VS

The Hatch & Kirk Invoice

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October 1, 1989

Qty	Part No.	Description	Unit	Total
				\$1,007.50
8	8159354	Rod, Fork		\$8,060.00
8	9544257	Rod, Blade		\$3,744.00
16	8409499	Piston		\$5,616.00
16	8135330	Washer		\$241.28
16	8367800	Carrier		\$4,929.60
16	8269842	Pin		\$2,204.80
32	8159340	Bolt Assy.		\$152.00
16	8341192	Bearing		\$1,944.80
16	8059699	Ring		\$50.72
		Total		\$26,943.20

Hatch & Kirk Inc.
DIESEL PARTS SPECIALISTS

ABC Marine Company
111 Water Front Drive
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October 1, 1989

Qty	Part No.	Description	Unit	Total
16	8081272-HK	Washer		\$9.50
		Total		\$152.00

When you call your EMD representative for a set of carrier thrust washers for your 16 cylinder 567 A or B engine you are told the item is no longer available and has been superceded by the component parts on their above invoice. When

you call Hatch & Kirk with the same request you get a four word reply — "We will ship today". If you call us for heads, liners, pistons, carriers, connecting rods or any of the component parts common to the 567 A and B series engines you get the same reply — "We will ship today".

So, if you cannot afford the costly modifications recommended by EMD and are tired of having to rely on "used" parts, call Hatch & Kirk and be assured that a new, government approved part will be shipped to you immediately.

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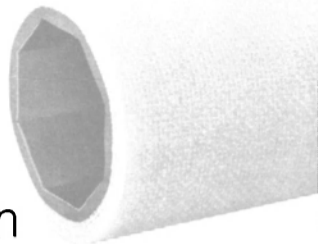
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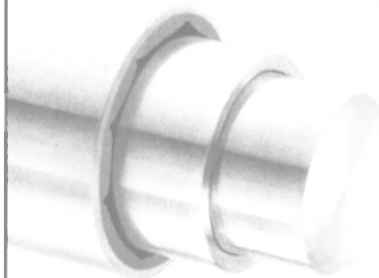
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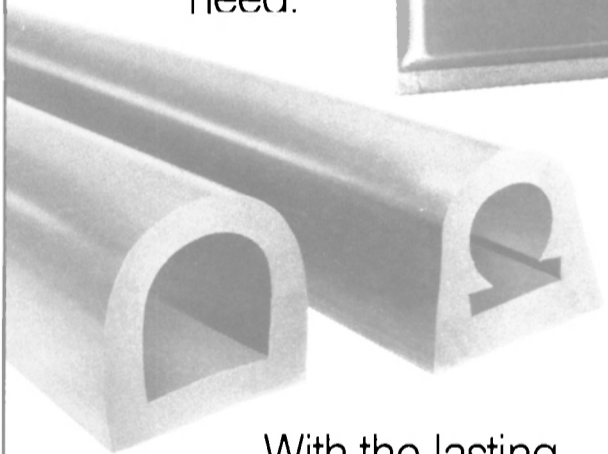
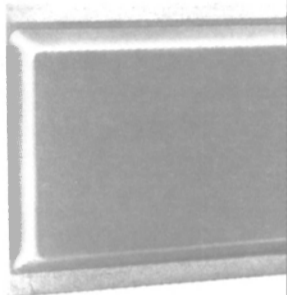
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ON THE COVER

The MARCO-Seattle-built Frontier Spirit, a 135-foot freezer longliner owned by Alaska Frontier Co., an American-Japanese joint venture firm that plans to sell the vessel's catch in established markets in Japan. *Photo courtesy of Lewis VanDeMark, MARCO-Seattle.*

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**Deck Machinery/
Cargo Handling Review**
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GE Awarded \$88.6-Million Pact

General Electric, Government Electronics Systems Division, Moorestown, N.J., was recently awarded a \$88,555,249 cost-plus-fixed-fee contract for engineering support services for the Aegis combat system on DDG-2313, a Japanese Self-Defense Force ship. The work will be performed in Moorestown (93 percent) and Japan (7 percent). The contract (N00024-87-C-5107) was awarded by the Naval Sea Systems Command.

MSC Awards Central Gulf \$6.4-Million Contract For Barge Charter

Central Gulf Lines, Inc. of New Orleans, La., has been awarded a \$6.4-million contract for charter of the Caps Express, a semisubmersible barge chartered by MSC to preposition Army equipment. The contract period is 17 months with two 17-month options. It is funded by the Department of the Army, and the Army will have operational control.

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HydroComp Offers New Ship Propulsion Design Software

Since 1984, marine professionals worldwide have chosen NavCad software as one of their principal design tools for the analysis and selection of engine, gear and propeller systems. HydroComp, Inc., Durham, N.H., has produced NavCad

2.0—the most powerful NavCad software to date.

The PC.-based NavCad system has been built around three main calculation routines: (1) vessel resistance; (2) propulsive coefficients and shaft power; and (3) propeller selection and analysis. Analysis methods are available for displacement vessels, planing craft, and barge trains. A comprehensive propeller analysis and an optimum pro-

peller selection can be performed for a variety of open-wheel and ducted propellers.

NavCad 2.0 also represents a new look and direction for NavCad software. An integrated, menu-driven data entry system provides the control for the calculations—with data checking, context-sensitive help screens, and logical file handling. Also, NavCad 2.0 adds comparative analyses, graphing capabilities and

report generating to its other features.

The flexibility and power of NavCad 2.0 are evident the moment one enters the first screen. Even a new user will find that they can instantly perform all of NavCad's functions through the pull-down menu system and data entry screens.

NavCad 2.0 requires an IBM PC or compatible computer operating MS-DOS 3.0 or greater, with 640K RAM, and a hard disk drive. A numeric coprocessor, and EGA or VGA video are recommended. NavCad supports 5-1/4- and 3-1/2-inch formats.

For free literature detailing NavCad 2.0 ship propulsion design software,

Circle 69 on Reader Service Card

Rockwool Panel Systems Installed Aboard Fantasy —Literature Available

The 70,000-grt M/S Fantasy has been supplied with some of the most sophisticated joiner systems available—Rockwool TNF Panel Systems—tailor-made for this huge, sophisticated passenger luxury liner.

Over 330,000 square feet of TNF Wall Panels, delivered on pallets in 75 large trucks, have been installed in 1,003 different combinations, to make installation fast, safe and noise resistant in all passenger areas. During manufacture, transport and installation, the vast array of different colors and dimensions could only be managed by using a large computer program, from the moment the first steel sheet was ordered, until the last finished wall panel was in position.

To fit the Fantasy properly, panels were delivered in 21 different colors, 49 different heights, 23 widths and utilizing 11 special shaped corner types.

To insure successful installation, each individual panel was clearly marked, from the start of production until the people on site positioned the panel according to installation drawing.

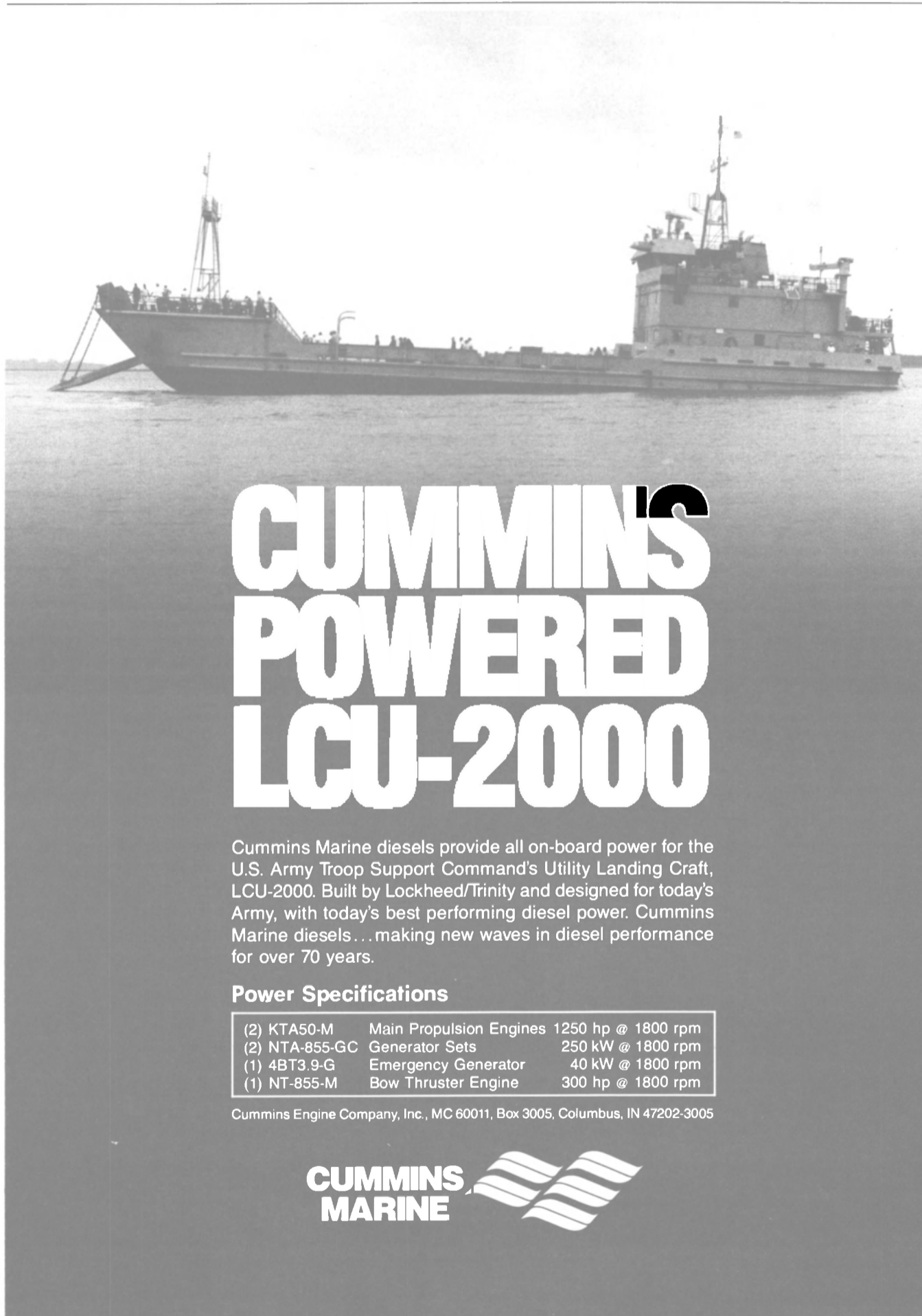
Rockmont A/S, whose Rockwool TNF products are represented in the U.S. by the Waugh Co., Jacksonville, Fla., has some of the most modern computer technology available to help manage large projects.

For free literature on Rockwool TNF Panel Systems,

Circle 71 on Reader Service Card

GD-Electric Boat Receives Modification To Seawolf Contract

General Dynamics, Electric Boat Division, Groton, Conn., was recently awarded a \$26,980,723 modification to a previously awarded cost-plus-fixed-fee contract for steam and electric plant development for SSN-21 Class submarines. The work will be performed in Groton. The contract (N00024-87-C-4086) was awarded by the Naval Sea Systems Command.



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Electrode Products Now Markets Full Range Of Metal-Coated Electrodes —Literature Available

Electrode Products, Inc., a new affiliate of Electrocatalytic, Inc., has begun marketing a full range of state-of-the-art metal-coated electrodes.

Mark J. Geusic, newly appointed as vice president in charge of Electrode Product's sales, said the new company's technical service group will place special emphasis on "developing customer-specific solutions to lower operating costs, maximize product selectivity and reduce environmental problems."

Special emphasis will be placed on electrodes for use in electroplating,

electroalvanizing, electrowinning and electrochemical synthesis processes. The electrodes will complement Electrocatalytic's emerging electro-organic synthesis technologies for the manufacture of specialty chemicals.

For more information and free literature,

Circle 49 on Reader Service Card

Seaworthy Systems Opens West Coast Branch Office In San Francisco Bay Area

Seaworthy Systems, Inc. recently announced the opening of their West Coast branch office in the San Francisco Bay area.

Seaworthy is a full-service firm offering significant capabilities, both technical and managerial, in the fields of marine engineering, naval architecture, industrial power, financial analysis and computer services.

The West Coast office is managed by Samuel J. Oncea, a licensed professional engineer who has been involved in nearly all of the various types of projects Seaworthy gets involved with. He has been in charge of work that ranges from shipboard energy audits and operational surveys on both steam and diesel vessels to systems design and control systems work. He has a comprehensive computer background, particularly with shipboard and process applications.

The address of the new office is: Seaworthy Systems, Inc. Suite 210, 1305 Franklin Street, Oakland, Calif. 94612, phone (415) 465-3893, telex 517931, fax (415) 465-0492. The capabilities available from the Oakland location can provide the responsiveness, expertise and experience necessary to meet customers' existing or emerging West Coast requirements.

For further information on Seaworthy's services,

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Atlantic Marine Delivers Caterpillar-Powered 123-Foot Longliner

Atlantic Marine, Inc. of Jacksonville, Fla., recently delivered the F/V Aleutian Chalice to Chalice Trawlers Corporation of Edmonds, Wash. The 123-foot by 32-foot longliner processor was designed by Rodney E. Lay & Associates of Jacksonville, Fla.

The longliner is powered by two Caterpillar 3408 engines driving through Twin Disc 516 reduction gears with a 6:1 ratio. Auxiliary power is supplied by two Caterpillar 3306 TA 185-kw engines. The power train swings two Coolidge 60 x 63 four-blade propellers.

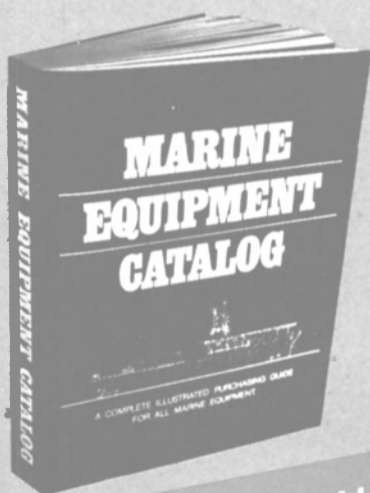
The Aleutian Chalice has joined her sister ship Silver Chalice for fishing in the Bering Sea. Atlantic built the Silver Chalice in 1979.

Located at the intersection of the St. Johns River and Intracoastal Waterways in Jacksonville, Fla., Atlantic Marine, Inc. constructs a variety of vessels, such as fishing vessels, ferry boats, cruise boats, patrol boats, tugs, barges in sizes of up to 350 feet.

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

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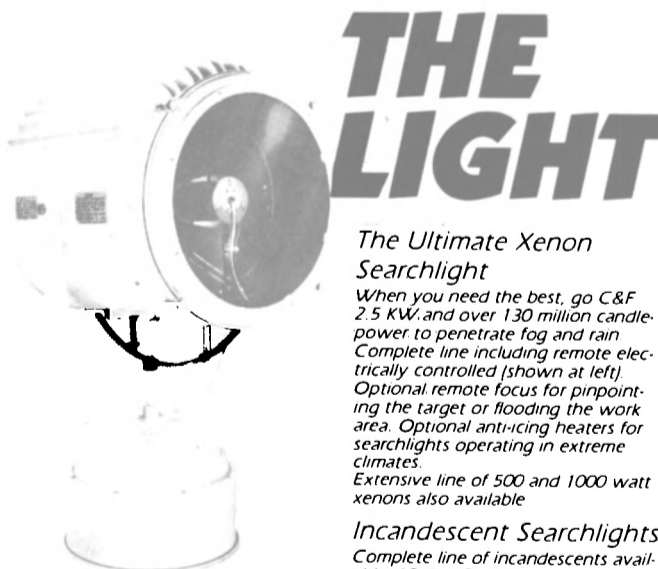
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**JJH Establishes Small Boat Engineering Department—
J. Koelbel Named Director**



Joe Koelbel

Richard R. Hopkins, president of JJH Inc., recently announced the establishment of the small boat engineering department at the Arlington, Va., office of JJH Inc. This group has the responsibility of providing engineering services to the small craft industry using both the existing resources of JJH Inc., a well-established naval architecture/marine engineering firm, and the new resources of the department.

Joe Koelbel, a naval architect with 40 years' experience in the field, has been appointed technical director. He has experience with a wide range of boat types, including yachts, fast patrol boats, hydrofoils, auto ferries, and oceanographic vessels. He has particular expertise in the design and analysis of high performance hulls and has authored several papers on the subject.

Using the latest computer technology, the new department offers a complete range of design services to owners, operators, and builders of yachts, subchapter "T" boats, military craft, and workboats. The services of the small boat department complement those that JJH has offered in the past and extend the scope of the company's interest to vessels of practically all sizes and types.

For more information and free literature,

Circle 84 on Reader Service Card

HHI Constructing Specialized RO/RO For United Baltic Corp.

Since her keel was laid on December 15, 1988, construction of a 12,830-dwt roll-on/roll-off vessel ordered by United Baltic Corp. has been in full swing to meet the delivery due for November this year at Hyundai Heavy Industries (HHI) Ulsan shipyard.

When delivered, the vessel will transport containers, roll trailers, paper reels and other Ro/Ro cargoes between U.K. east coast ports and various European countries on the Baltic shores.

The vessel will have three cargo decks including tank top, and one shelter deck to be used for loading of empty containers by shore crane. She is capable of carrying up to 781 TEUs.

For efficient cargo loading/unloading, one set of stern door/ramp will be provided. The ramp has an anti-slip surface of fish-bone type

and is operated hydraulically and electrically from the vertical position up to approximately 8 degrees below the horizontal position.

The vessel is powered by two non-reversible, four-stroke turbocharged Wartsila engines, developing a total MCR output of 13,575 kw at 900 rpm. The 9R46 engine provides 8,145 kw of this total, and the remaining 5,430 kw is by the 6R346 engine.

Trial speed using both engines will be 19.1 knots at 80 percent MCR (total 10,860 kw), with a service speed of 18.5 knots.

Classified by Lloyd's Register of Shipping +100A1, roll-on/roll-off ship and +LMC, UMS, Ice Class 1AS, she will have an overall length of about 151 feet, breadth of 82 feet, depth to upper deck of 57 feet, and design draft of 23.6 feet.

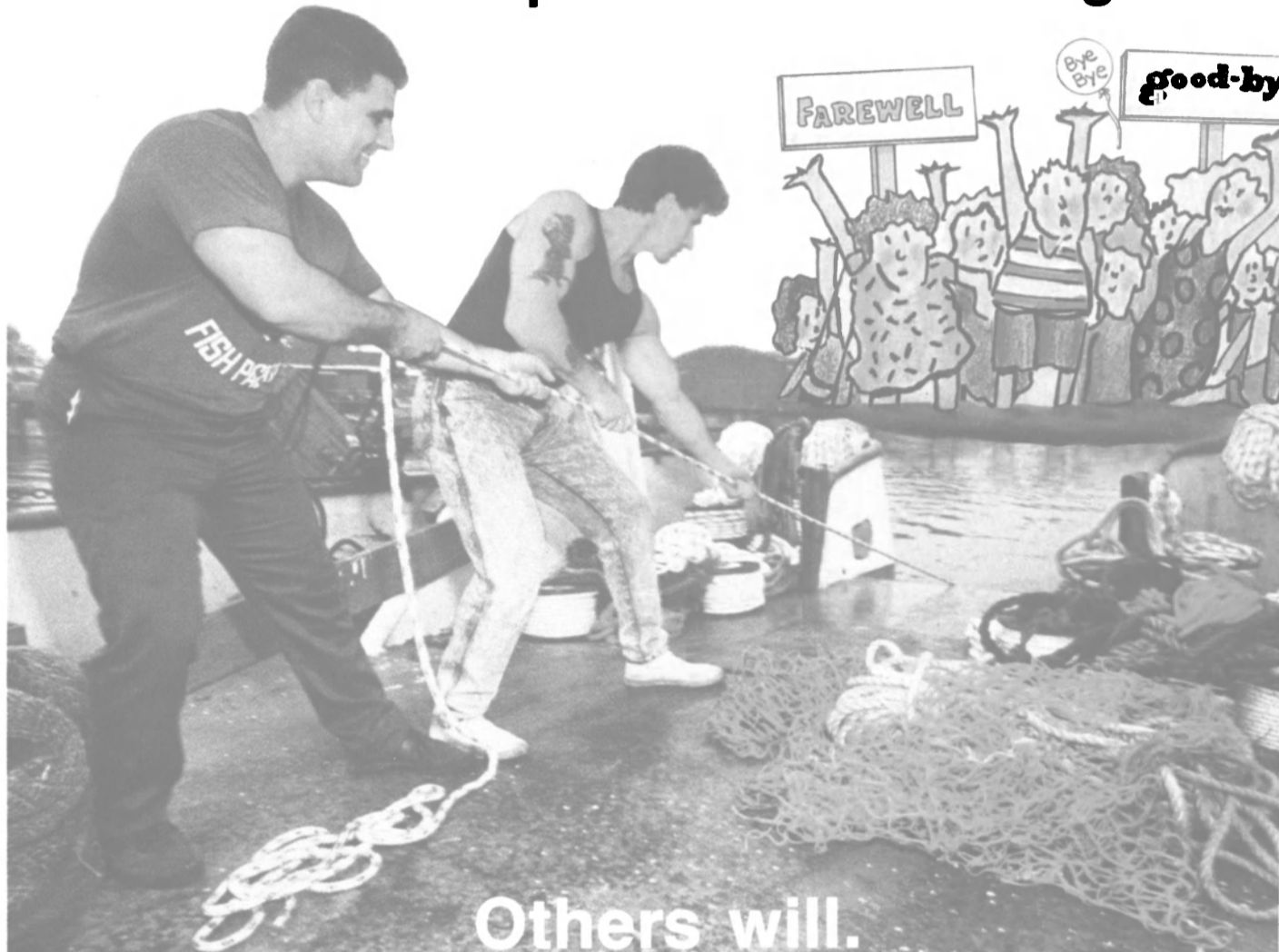
Since its shipyard operation in

1973, HHI has so far delivered a total of 14 Ro/Ro ships to their respective owners including Barber Blue Sea Lines (BBS), which took delivery of their identical 2,400-TEU Super Carriers in early 1984.

For free literature giving full information on the facilities and capabilities of Hyundai Heavy Industries,

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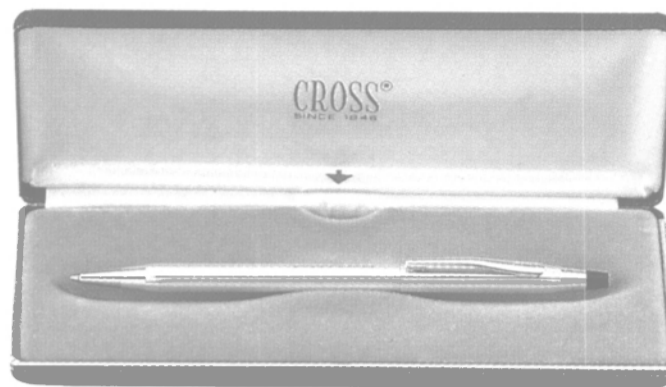
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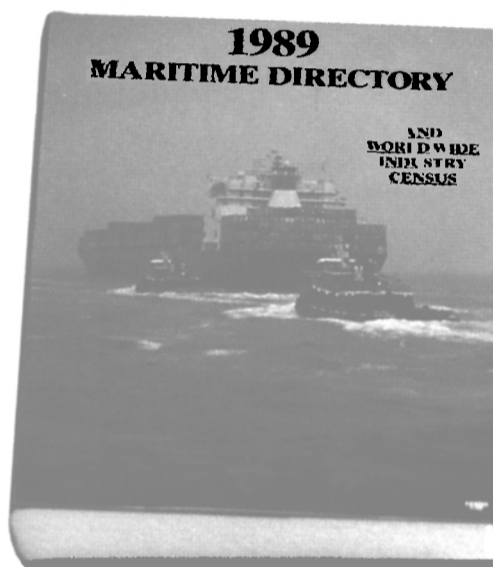
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The first of four 370,000-cubic-foot reefers being built by the Sevilla shipyard of AESA, the Del Monte Planter will be powered by a single MAN B&W-AESA 6L60MC engine. Eight other Del Monte reefers being built by the yard will feature the same engine.

Astilleros Espanoles Delivers First Of Four Del Monte Reefers

Spanish shipbuilder Astilleros Espanoles S.A. (AESA) recently delivered the first of four 370,000-cubic-foot reefer vessels for Del Monte under construction at its Sevilla yard.

Classed ABS A1 E AMS +RMC ACCU, the Liberian-flag reefer Del Monte Planter has an overall length of 462-1/2 feet, length between perpendiculars of 426-1/2 feet, beam of 73 feet, depth of 42 feet and draft of 30 feet. Like her sister ships, the Planter is powered by an AESA-built MAN B&W Diesel 6L60MC engine, which has a specific fuel oil consumption of 124.5 grams/bhp/hr, with a maximum continuous rating of 13,750 bhp at 117 rpm. The 10,000-mt refrigerated cargo vessel will be able to obtain a speed of 20 knots at her design draft of 22-1/2 feet, and 18 knots at her full draft of 30 feet.

Each of the four 370,000-cubic-foot reefers has four holds optimized for the carriage of palletized cargoes, with single hatches. All the holds have similar cubic capacities.

Deep fuel oil tanks are arranged fore and aft of the holds aboard the 8,990-gross-ton vessels. Even though the machinery space and accommodations are located aft, the

machinery space and uptakes are not integrated with the accommodation block. There are 16 single crew cabins on board.

The 124-FEU (forty-foot equivalent-unit) Del Monte Planter has three tweendecks, with 16 refrigerated spaces divided into eight thermally independent parts. She is fitted with two sets of 19-mt lifting capacity twin cylinder topped electrohydraulic cranes. A single 3-mt cylinder topped electrohydraulic crane has been installed for stores and provisions.

Furthermore, the Del Monte Planter will feature computerized Spare Parts Inventory Management (SPIM), Planned Maintenance (PMS) and Condition Monitoring (CMS) systems from Marine Management Systems, Inc. (MMS) of Stamford, Conn.

The fully integrated systems were installed under a contract awarded by Del Monte Fresh Fruit International of Hamilton, Bermuda, to MMS.

According to **Don Logan**, MMS vice president, the systems will be installed on the eight other Del Monte reefers under construction at AESA.

The shipboard systems will inter-

face with MMS's SPIM and PMS systems being installed at Del Monte's operation office in Hamilton, as well as at an additional shore office expanded to support a warehouse system. Working together, these systems will provide full inventory and maintenance management control for the Del Monte fleet of vessels.

AESA is also constructing five 580,000-cubic-foot reefers for Del

Monte. These vessels will each have an overall length of 520 feet, breadth of 77 feet, and draft of 30 feet. Like the smaller reefers, these five vessels will each be powered by a single AESA-built MAN B&W Diesel 6L60MC engine.

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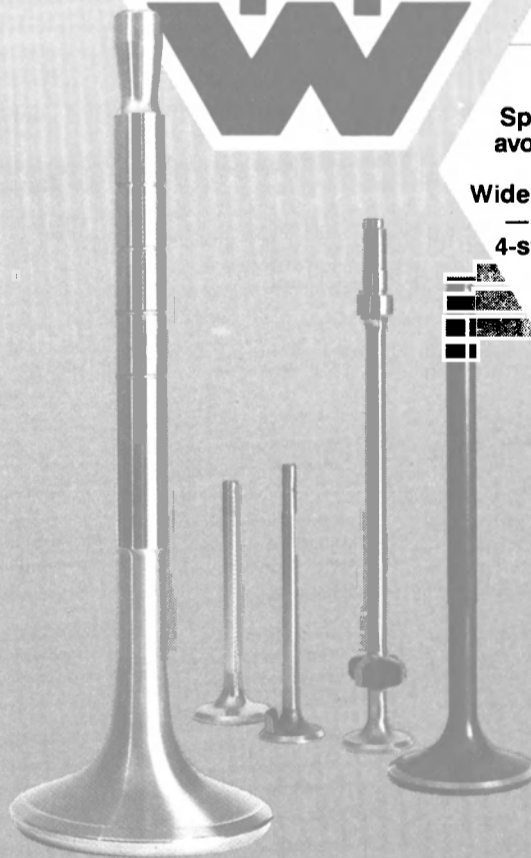
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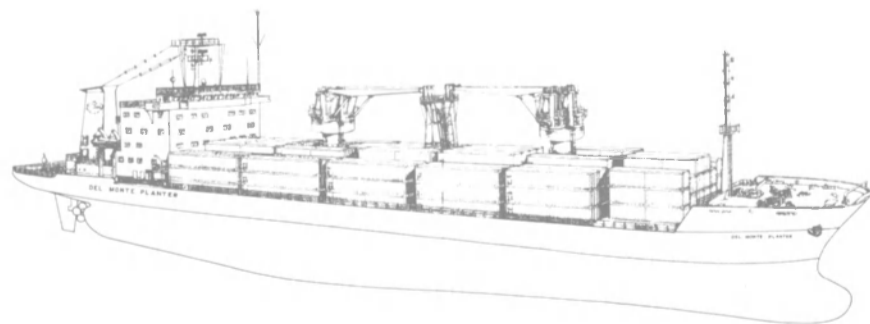
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Drawing of the Del Monte Planter illustrating how she will look when loaded with containers.



FISH EXPO '89

October 18-21, Seattle, Washington

A record number of visitors and exhibitors are expected to turn out for Fish Expo '89, one of the world's largest commercial fishing expositions, when it is held at the Seattle Center in Seattle, Wash., from October 18-21, 1989.

For the first time in its 23-year history, the show will utilize five buildings at the Seattle Center. Sales and marketing director **Stephen McDonough**, said, "This is the first time exhibits have filled five buildings. We knew we were going to use the Coliseum, the Flag Pavilion, the Exhibition Hall, and the Northwest Rooms, but now the demand is so high, we've added the NASA building. In the early eighties, during the height of the king crab boom, the show used four buildings. This show is going to be even bigger."

Early visitor pre-registration figures indicate that records will be broken for visitor attendance as well. The last time Fish Expo was held in Seattle, two years ago, 23,000 visitors attended the show. **Mr. McDonough** expects the show will draw around 25,000 visitors this year.

What attracts so many industry professionals is the reputation Fish Expo has gained as being the best place for commercial fishermen to see and buy the latest in commercial fishing equipment and gear. Manufacturers and suppliers of vessels,

engines, electronics, deck machinery, refrigeration equipment, life and safety equipment, financial services, insurance, and other products and services will exhibit to the commercial fishermen and industry professionals.

Along with the opportunity for the visitor to see the latest product or service, it is also an excellent opportunity for commercial fishermen to see how changes in the industry may affect them during the many seminars held at Fish Expo. Produced by the editors and staff of *National Fisherman*, the seminars deal with topics crucial to fishing professionals.

In 1987, many of the seminars were presented to standing-room-only crowds, and this year's topics are sure to be just as interesting. One seminar will deal with lessons learned from the Valdez oil spill. In this session, scientists, seafood marketers and environmental experts will examine several aspects of the disaster, including the future of Prince William Sound and how to prevent future spills. Other seminars include targeting by catch and a look at limited entry in ground-fisheries.

Because of the packed schedule of seminars and nearly 1,000 exhibit booths in five buildings, people visiting Fish Expo '89 should plan on spending two or more days at the show. Visitors should also make their hotel reservations early since hotel space is at a premium.

Fish Expo '89 is sponsored by *National Fisherman* magazine and

produced by National Fisherman Expositions, Inc. For more information on the exhibition, seminars, travel or hotels, contact: National Fisherman Expositions at 5 Milk Street, P.O. Box 7437 DTS, Portland, Maine 04112; telephone: (207) 772-3005; telefax: (207) 772-5059; and telex: 322721 NATFISHEX-PO.

Scheduled Seminars

Wednesday, October 18

10:30 a.m.—"Space, Satellites and Fishermen."

1 p.m.—"Limiting Entry in Groundfisheries."

3 p.m.—"Fish Farming: What's in it for Me?"

Thursday, October 19

10:30 a.m.—"Countering the Politics of Sport Fishing."

1 p.m.—"Living with the Exxon Valdez Oil Spill."

3 p.m.—"New Rules on Marine Mammals."

Friday, October 21

10:30 a.m.—"Trawl-Mounted Electronics."

1 p.m.—"The Onshore/Offshore Allocation Issue."

3 p.m.—"Jets, Turbines and High Tech Power."

Saturday, October 21

10:30 a.m.—"The Bycatch Pie & Full Utilization."

1 p.m.—"Offshore Driftnets Bad Press for Fishermen."

Also, the Women's Fisheries Network and Fish Expo will be sponsoring "Trawl Crawl: A Run for the Halibut," on Saturday, October 21.

The event will be held at the Fishermen's Memorial at 9 a.m. For more information, contact the Women's Fisheries Network at (206) 742-2810.

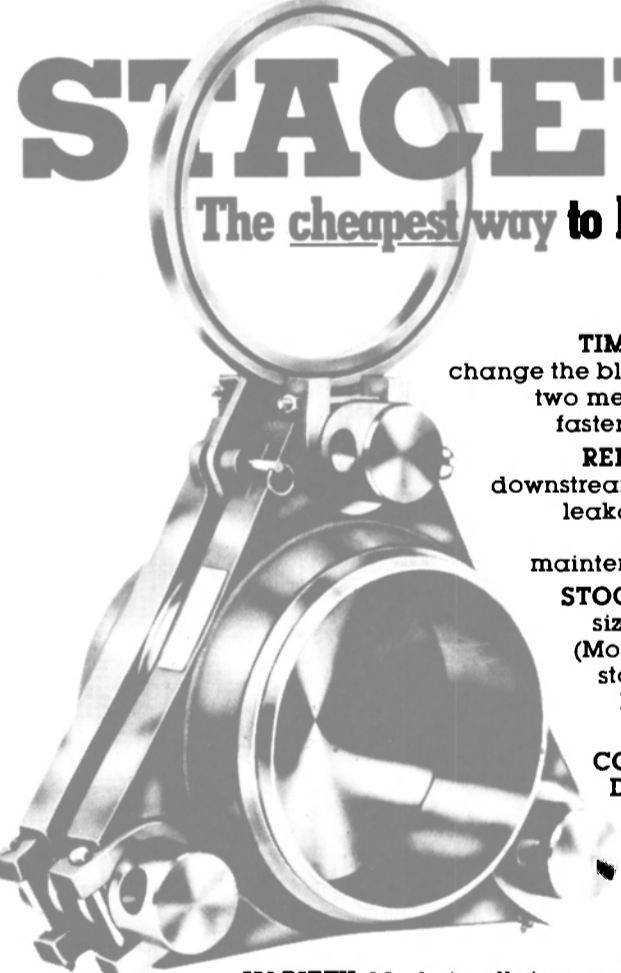
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ACR Electronics	2243
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Alden Electronics	336
Alfa Laval	6109
Alkota N.W.	2118
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American Air Filter	2302

Photo: The steel combination fishing vessel Cindria Gene, built by Fred Wahl Marine.

American Cyanamid	6316	Crosby Group	6400,6401	Harco Mfg.	88W	Interstate Production Credit Assn.	26
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American Equipment	6501	Custom Embroidery	6533	Harris RF Communications	75,76	JM Martinac Shipbuilding	944
American Manufacturing	5126,5128	Custom Sea-Gear	5142	Harvey's	2304	JW Berg	6109
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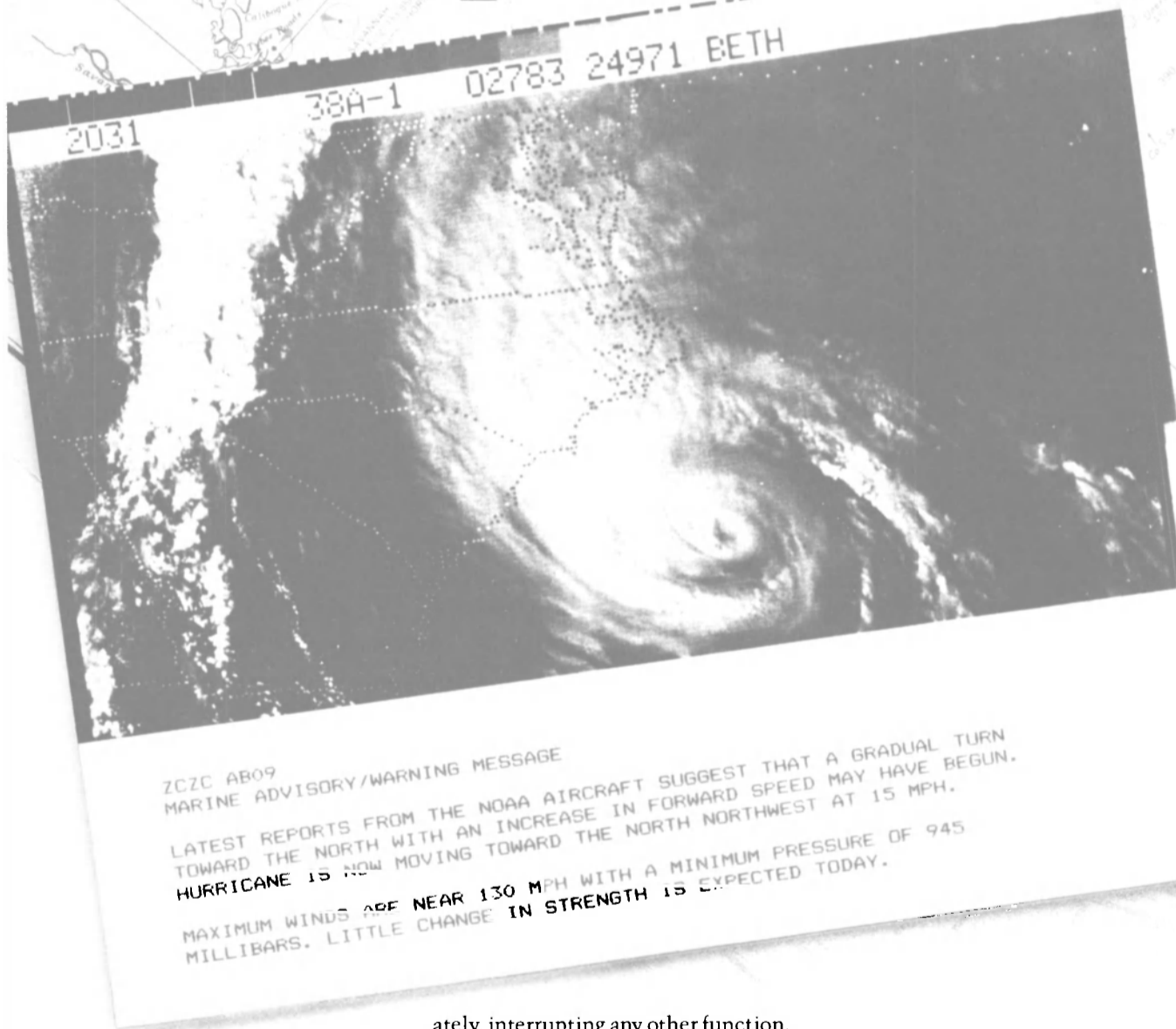
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Fish Expo '89

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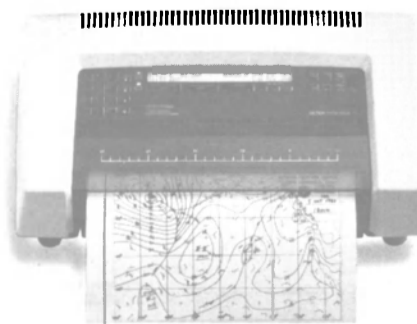
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Building On A Proud Tradition

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.



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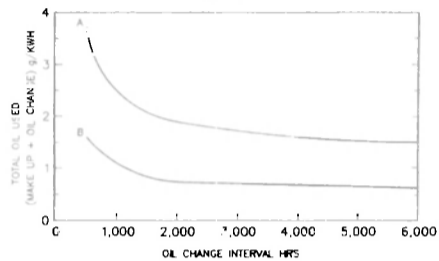
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The Cost Of Lubricating Trunk Piston Engines

Special to Maritime Reporter from BP Marine

Over the past 25 years, the specific fuel consumption for marine trunk piston engines has reduced and an increasing number of such engines are designed for residual fuel operation whether they are for main propulsion or auxiliary purposes. The cost of fuel varies widely as the spot market price of fuel oil fluctuates. Also the cost of lubricant is an expense, which while it is not generally subject to such price variations, may be converted to a fuel equivalent value in order to better understand the running costs of a trunk piston engine.

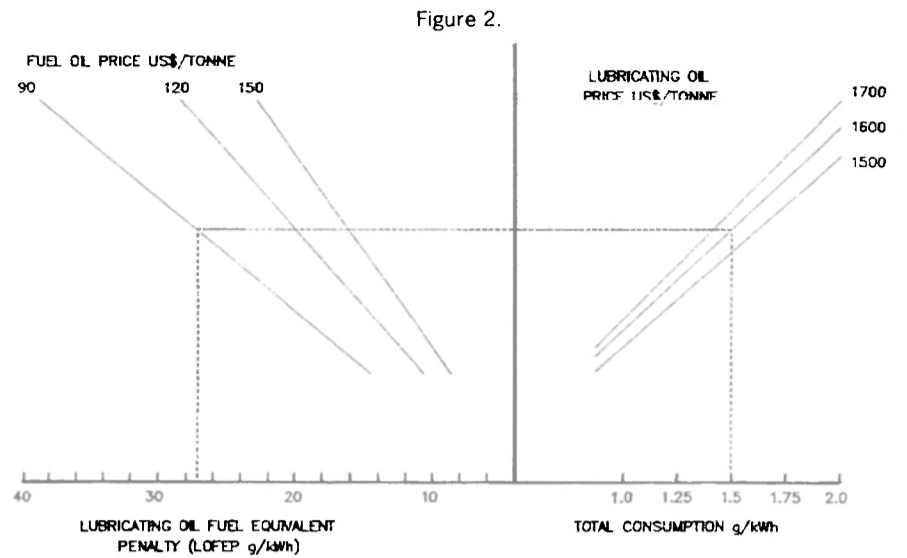
Figure 1.



The reduction in specific fuel consumption has taken place through evolutionary design stages and has been achieved by a general increase in pressure and temperature in the operating cycle, so making greater demands upon the ring pack. The function of the lubricant in such engines is multipurpose, it has to lubricate the cylinder to minimize wear, lubricate the bearings and running gear and cool the under-piston crown. As a result of the first function, debris from the ring pack is transported to the circulating oil

and this carbonaceous matter is seen as insolubles. Treatment of the oil is carried out by periodic make-up, filtration and also often by suitable centrifuging of the charge. Even after all this, there is sometimes a definite trend for the insolubles burden to continue to increase so that partial or total renewal of the charge is necessary to enable the lubricant to satisfactorily perform the functions defined above. In addition, other trends have taken place which also have an effect upon the lubricant. These are the reduction of the oil charge in some designs, when expressed on a kg/kw basis and also a reduction of the lubricating oil consumption by attention to the ring pack design. These trends have a significant effect on the oil in circulation with respect to alkalinity reserve, expressed as Total Base Number TBN mgKOH/g, and insoluble burden. After a period of time the alkalinity reserve will stabilize at a value which is a function of the engine design, sulphur level of the fuel burnt and the oil consumption rate.

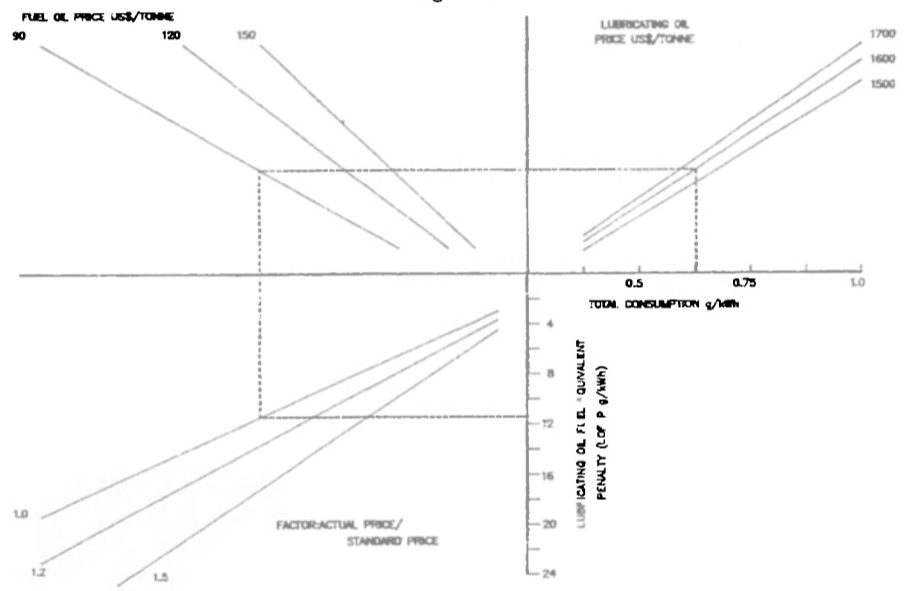
The total oil consumption related to oil change interval is shown in Fig. 1. It should be noted that the total consumption is the addition of the make up oil used and the oil used to replenish the charge when expressed on a g/kwh basis. By way of illustration two conditions are shown, condition A, which is for a design charge of 1.2 kg/kw and consumption of 1.3 g/kwh, and condition B, which is for a charge of 0.5 kg/kw and consumption of 0.6 g/



kwh. Experience has shown that for condition A oil changes under normal operating parameters are infrequent and hence the total consump-

tion can be approximated to that of the make up consumption. While for condition B, oil changes are required.

Figure 3.



The lubricating oil used, being a consumable item, can be related to fuel and this associated cost or penalty can be determined from Fig. 2 or Fig. 3, depending on whether the engine has a high or low consumption. Usually marine lubricating oil is purchased under term contract and hence is not subject to severe price fluctuations, its price being determined by the component cost and market forces. On the other hand, fuel oil is purchased on the spot market and is subject to wide price variation. In this decade the fuel price has fluctuated in the range of \$35-\$220/ton. Such a variation has a significant effect on the lubricating oil fuel equivalent penalty (LOFEP) for trunk piston engines.

Determination of LOFEP is illustrated by the plotted example in Fig. 2 where the following values have been used: Total oil consumption 1.5 g/kwh; lubricating oil price, \$1,600/ton; and fuel price, \$90/ton.

Using these values, the procedure for determining LOFEP from Fig. 2 is as follows: (1) construct a vertical line representing 1.5 g/kwh to intersect the lubricating oil price (\$1,600/ton); (2) from this intersection, construct a horizontal line to intersect the fuel price line (\$90/ton); drop a vertical line to the horizontal axis to determine LOFEP.

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In Fig. 3 which is for a low consumption condition the procedure is similar to that for Fig. 2. This is illustrated with the values 0/625 g/kwh, lubricating oil price \$1,600/ton, fuel price, \$90/ton, and a cost factor of 1.0. This procedure is identical for the first two steps as described for Fig. 2. At the third step the vertical line is taken to the intersection of the cost factor line (in this case 1.0). Then from this intersection construct a horizontal line to the vertical axis for determining the LOFEP under the plotted conditions.

The factor line, third quadrant (bottom left) in Fig. 3, allows the cost of alternative lubricants to be examined. This may be due to a change in cost because of a variation in TBN or consideration of another lubricant. The LOFEP value obtained, whether it be from Fig. 2 or Fig. 3, should be added to the specific fuel consumption in order to take account in fuel terms the effect of a particular lubrication regime.

For further information on marine lubricant products from BP Marine,

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Fish Expo '89

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IMODCO To Provide Petrobras With World's Deepest CALM Terminals

IMODCO, the Calabasas, Calif.-based developer of offshore marine terminal systems, has been awarded a contract by SETAL Engenharia e Construcoes S.A. of Sao Paulo, Brazil, for the design and development of the deepest catenary anchor leg mooring (CALM) terminals ever undertaken.

The IMODCO-designed terminals, to be constructed by Setal for Petroleo Brasileiro (Petrobras), Brazil's national oil company, will be installed in a record 400 meters

of water in the Marlim Field, offshore Brazil in the Campos Basin of the country's southeastern coast.

Each CALM terminal will permanently moor a 120,000-dwt storage tanker while loading crude oil through a fluid swivel. Shuttle tankers of up to 120,000 dwt will moor periodically in tandem to the storage tankers and offload crude for shipment to shore-based facilities.

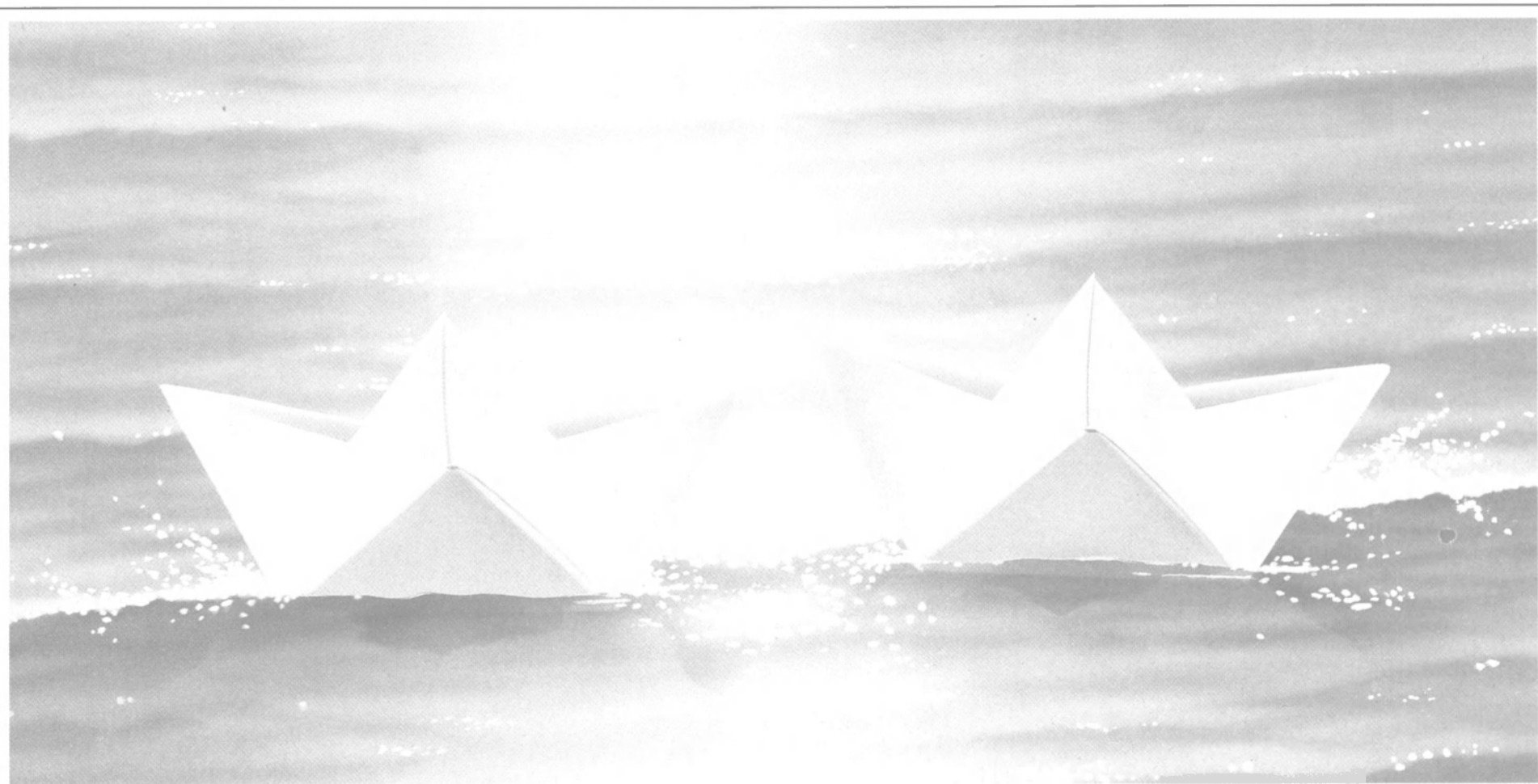
The contract to IMODCO is specifically to supply design engineering, construction drawings and key components, along with construction and installation assistance, states **Steven Mostarda**, vice president-marketing. Installation is scheduled for next spring.

The originator of single point mooring technology, IMODCO has designed and developed CALMs for most of the leading national and corporate oil companies of the world.

IMODCO is a unit of AMCA Internation, a broad-based corporation providing manufactured products and engineering/construction services in the areas of energy production and steel fabrication.

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EURO PORT '89

The maritime industry now views the future with greater confidence than it has done for many years. The shipping and shipbuilding sectors are now making a slow but steady recovery. For the first time in many years, the number of orders for the construction of new vessels has risen, thereby confirming that confidence in the future of the industry is increasing. This is apparent among other things from the great interest generated by the international maritime exhibition Europort 89, which will be held at the RAI International Exhibition and Congress Center in Amsterdam, the Netherlands, from November 14 to November 18.

By as early as mid-May of this year over 400 firms and organizations from the Netherlands and around the world had registered to take part in the exhibition.

Amsterdam's RAI International Exhibition and Congress Center is ideally suited to house and present one of the world's largest marine industry exhibitions. The Multi-lingual staff are trained to assist at every stage of stand design, construction and dismantling. The RAI restaurant service can undertake cocktail parties, supply light meals or even a full business banquet.

In addition, Amsterdam itself is at the heart of the European road and railway network and served by one of the world's largest international airports—Schiphol.

Held biennially, the Europort show has acquired a reputation over the years as one of the most important maritime exhibitions in the world. Among the main items in the exhibition program are materials and equipment for ships, systems and technology for the design, construction, operation and inspection of ships. The program also covers fishing and inland shipping.

Over 500 firms from 21 countries took part in the 1987 Europort, which attracted around 47,000 visitors from 56 countries. The visitors' assessment of Europort 87 was extremely favorable. No fewer than 95 percent stated that they were satisfied with the exhibition program.

The new technologies of the late 20th century already play a major role in the design and planning of modern ships. The computer, microchip and space satellite feature

prominently now in shaping the pattern and performance of every type of vessel whether cargo coaster, RO/RO carrier, oil tanker, container-ship, ferry boat, tug or dredger. Modern aids to ship design and naval architecture will be shown at the exhibition.

The range of equipment and materials used in modern shipyards to build and trial the ships of the future—many varieties of steel, welding systems, cranes, benders, cutters, grinders, etc.—will also be exhibited.

Other aspects of marine industry covered at the exhibition will include operations (ship propulsion, navigation, communication, fueling, etc.), inspection (yards and classification societies), and repair and maintenance (welding, forging, piping, etc.).

The 1989 exhibition will be accompanied by various important conferences. One of the most important elements of the conference program will be the events organized by the Central Dredging Association (CEDA). On Tuesday, November 14 there will be what is known as the CEDA Dredging Day, the theme of which will be Aggregate Dredging. And seminars on Dredging and the Environment will be held on November 15, 16, and 17. These seminars, which, as the name suggests, will deal with environmental aspects of dredging, are intended for graduates and other people with comparable qualifications who are involved in some capacity of dredging activities. In addition, the Dutch Association of Shipping Technicians will once again be organizing various events as part of Europort 89.

Daily admission to Europort 89 will be from 10 a.m. to 5 p.m., except on Thursday, November 16, when the exhibition will be open from 10 a.m. to 9 p.m.

For further information on attending or exhibiting at Europort 89, contact: RAI Gebouw bv, Europaplein, 1078 GZ Amsterdam, the Netherlands; telephone: (020) 549-1212; telex: 12443; or telefax: (020) 464-469. In North America, contact: Ad-Expo Marketing International, 16151 Cairnway, Suite, Houston, Texas 77084; telephone: (713) 463-0502; or telex: 3787754.

The RAI Hotel Service holds a

limited amount of accommodations at a number of hotels in Amsterdam for the nights of November 13-15. Delegates requiring a reservation should contact: **Nicola Hindle** at the Financial Times Conference Organization; telephone: (01) 925-2323; telex: 27347 FTCONF G; and fax: (01) 925-2125.

WORLD SHIPPING CONFERENCE PROGRAM

Chairmen: **Henk Rootliep**, chairman, Royal Nedlloyd Group, and **Paul J. Vogt**, chairman, the Baltic Exchange.

"Prospects for the World Shipping Industry—Is there Light at the End of the Tunnel?" by **Hans Jakob Kruse**, chairman, Hapag-Lloyd AG, and **Erik Tonseth**, president, Kvaerner Group.

"Growing Demand of Third World Countries to have their own Fleets," by Dr. **Rainer Vogel**, Deputy Director, Shipping Division, United Nations Conference on Trade & Development (UNCTAD).

"An EEC Perspective of the Industry," speaker to be announced.

"Long-Term Outlook for Rates in Shipping Markets," by Dr. **R. Martin Stopford**, vice president and senior shipping economist, Chase Manhattan Bank NA.

"Innovative Ways of Financing New Tonnage—the New Relationship between Owners and Charterers," by **Paul Slater**, chairman, First International Financial Corporation.

"The Second-Hand Ship Market," by **Alan Kennedy**, chairman, Global Ocean Carriers Limited.

"The Growth of Open Registers," by **Jeremy M.S. Smith**, general secretary, Liberian Shipowners Council Ltd.

"Better Navigational and Communication Aids for Modern Shipping," by **Keith Thacker**, general manager, Maritime Services Division, International Maritime Satellite Organization (INMARSAT).

"Pollution and the Environment—Problems Facing Europe's New Shipping Laws," by Dr. **Thomas A. Mensah**, assistant secretary-general, International Maritime Organization.

"Shipowners and Classification," by **Sir Roderick MacLeod**, chairman, Lloyd's Register of Shipping.

"The Importance of Specialist Vessels to North American and European Owners," speaker to be announced.

"International Strategies for the Future," by **Jens Ullveit-Moe**, chairman, Knutsen

OAS Shipping AS, vice president, Norwegian Shipowners' Association, **Ernest Fong**, managing director, Marine Navigation Co. Ltd., and **Hiroshi Takahashi**, managing director, NYK Line.

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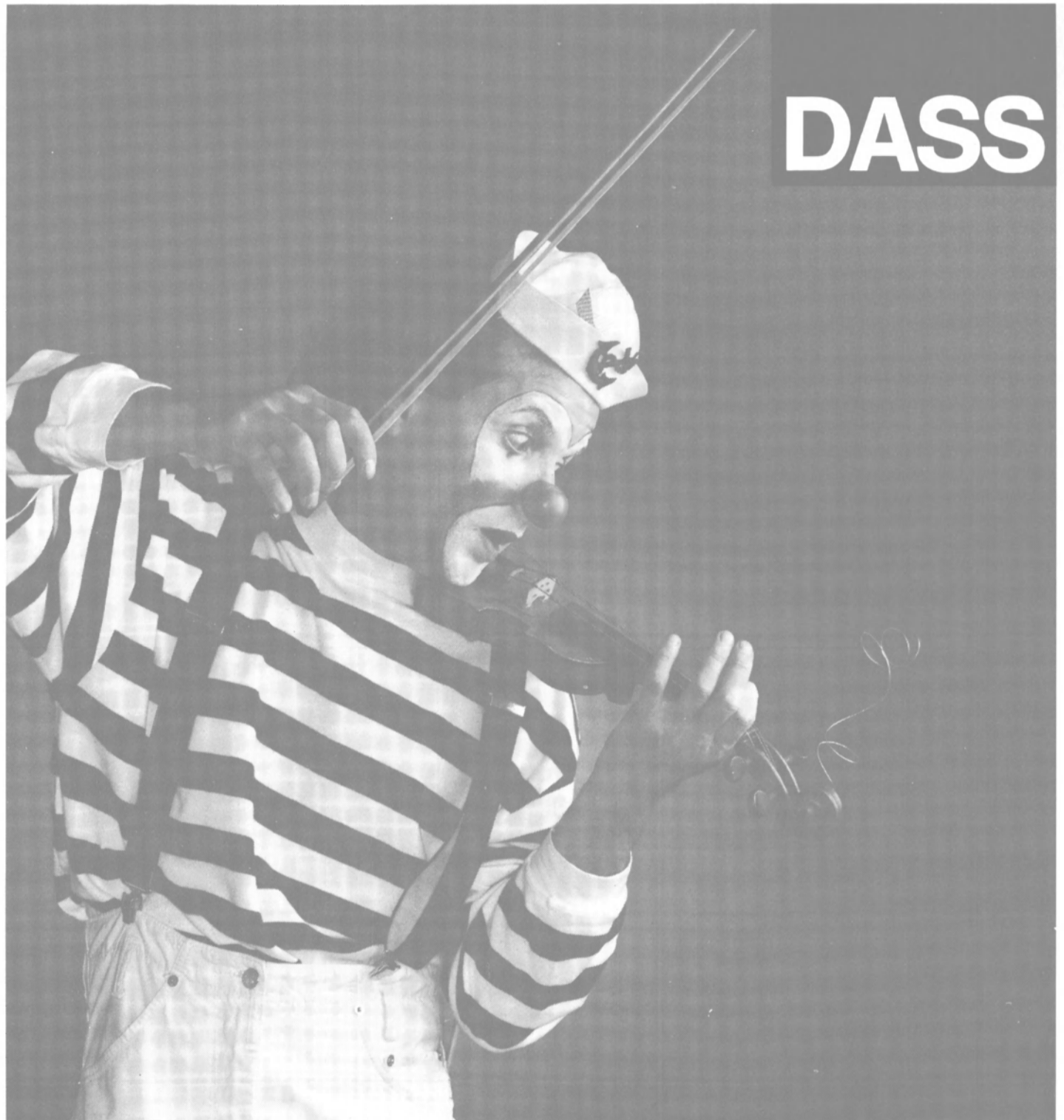
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PROPULSION UPDATE

Wartsila Diesel's Vasa 32 Sets A New Record: Passes The 1,000 Engine Milestone

Wartsila Diesel's Vasa 32 engine type has set a new record. With an 18-engine contract from the Odense Steel Shipyard of Denmark for a new container feeder vessel series, the number of Vasa 32s ordered now exceeds 1,000. This is, according to the company, more than for any other medium speed engine in the same output range.

The new order includes auxiliary engines for the six container feeder vessels ordered by A.P. Moller, one of the leading shipping companies in the world. Each vessel will have three four-cylinder Vasa 32 auxilia-

ry engines, each with an output of 1,320 kw at 720 rpm.

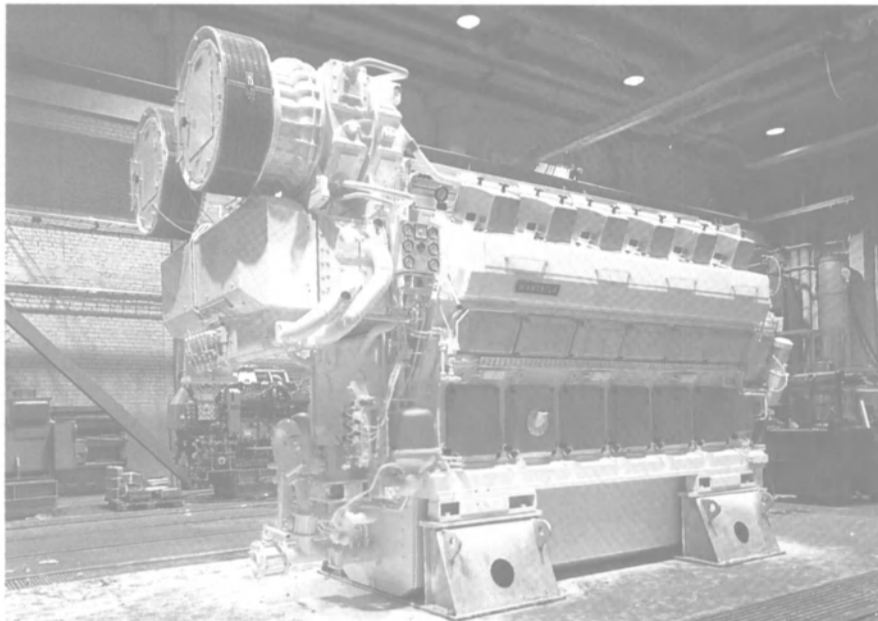
Since its introduction in 1978, the Vasa 32 has become one of the most popular diesel engines in its output range. The Vasa 32 was the first medium speed diesel engine designed and developed exclusively for operation on cheap low-quality heavy fuels. With the Vasa 32 it became possible to burn the same heavy fuel in both the vessel's main and auxiliary engines—a concept that offered entirely new potential for savings in fuel costs.

The Vasa 32 is widely used both

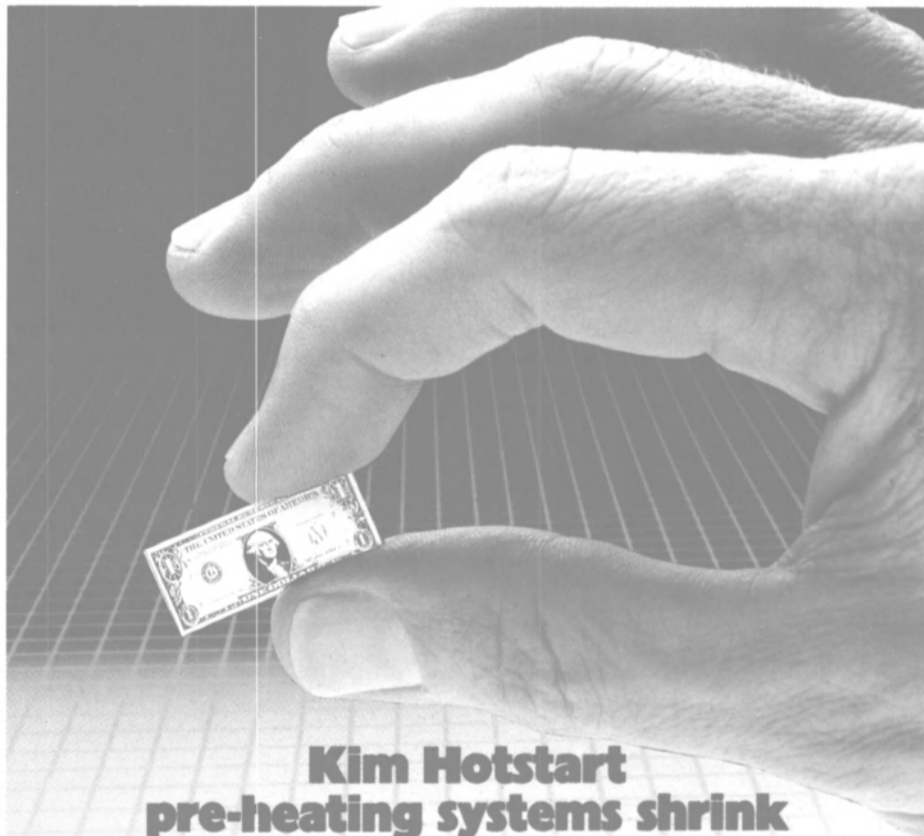
as a main and auxiliary engine in a great variety of ships, and also for power generation in offshore drilling rigs and land-based power plants.

For free literature giving full information on Wartsila Diesel's Vasa 32 engine,

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Wartsila Diesel's Vasa 32 has passed the 1,000 engine milestone. This picture shows a 12-cylinder V-version of the Vasa 32.



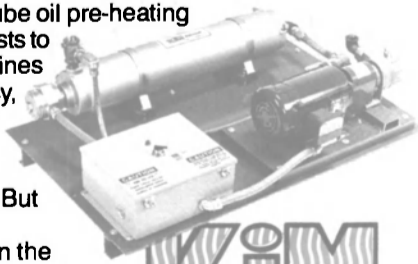
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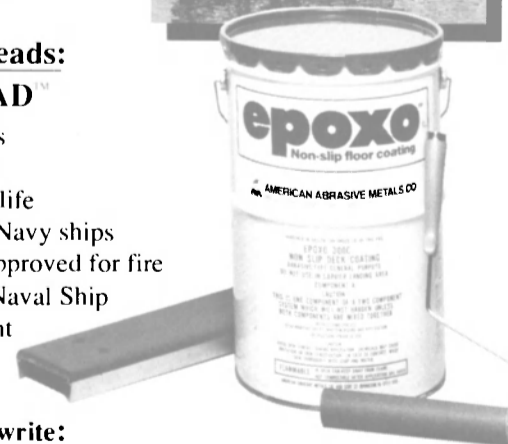
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Hydromarine
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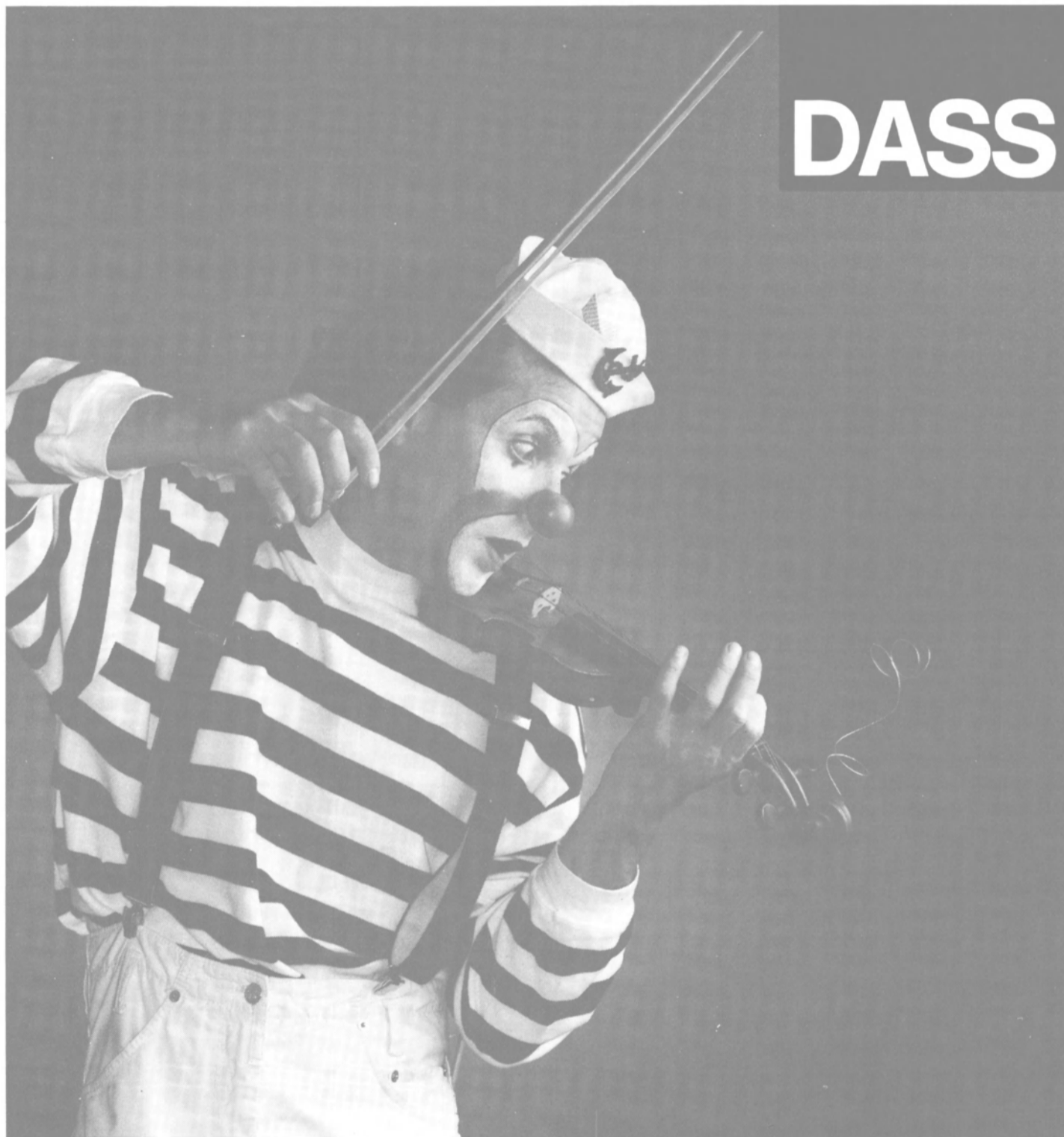
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Diesel After-Sales Service for
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PROPULSION UPDATE

Wartsila Diesel's Vasa 32 Sets A New Record: Passes The 1,000 Engine Milestone

Wartsila Diesel's Vasa 32 engine type has set a new record. With an 18-engine contract from the Odense Steel Shipyard of Denmark for a new container feeder vessel series, the number of Vasa 32s ordered now exceeds 1,000. This is, according to the company, more than for any other medium speed engine in the same output range.

The new order includes auxiliary engines for the six container feeder vessels ordered by A.P. Moller, one of the leading shipping companies in the world. Each vessel will have three four-cylinder Vasa 32 auxilia-

ry engines, each with an output of 1,320 kw at 720 rpm.

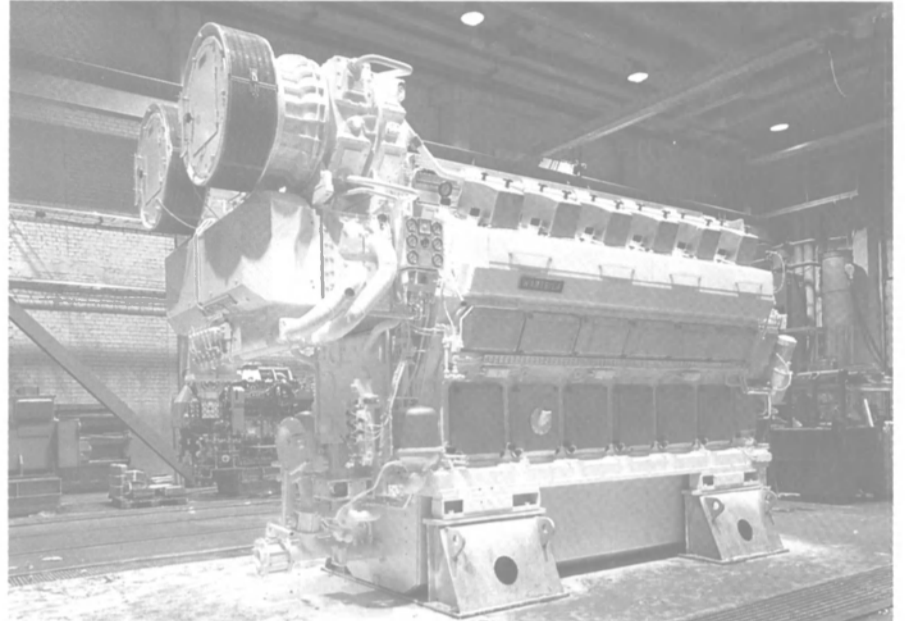
Since its introduction in 1978, the Vasa 32 has become one of the most popular diesel engines in its output range. The Vasa 32 was the first medium speed diesel engine designed and developed exclusively for operation on cheap low-quality heavy fuels. With the Vasa 32 it became possible to burn the same heavy fuel in both the vessel's main and auxiliary engines—a concept that offered entirely new potential for savings in fuel costs.

The Vasa 32 is widely used both

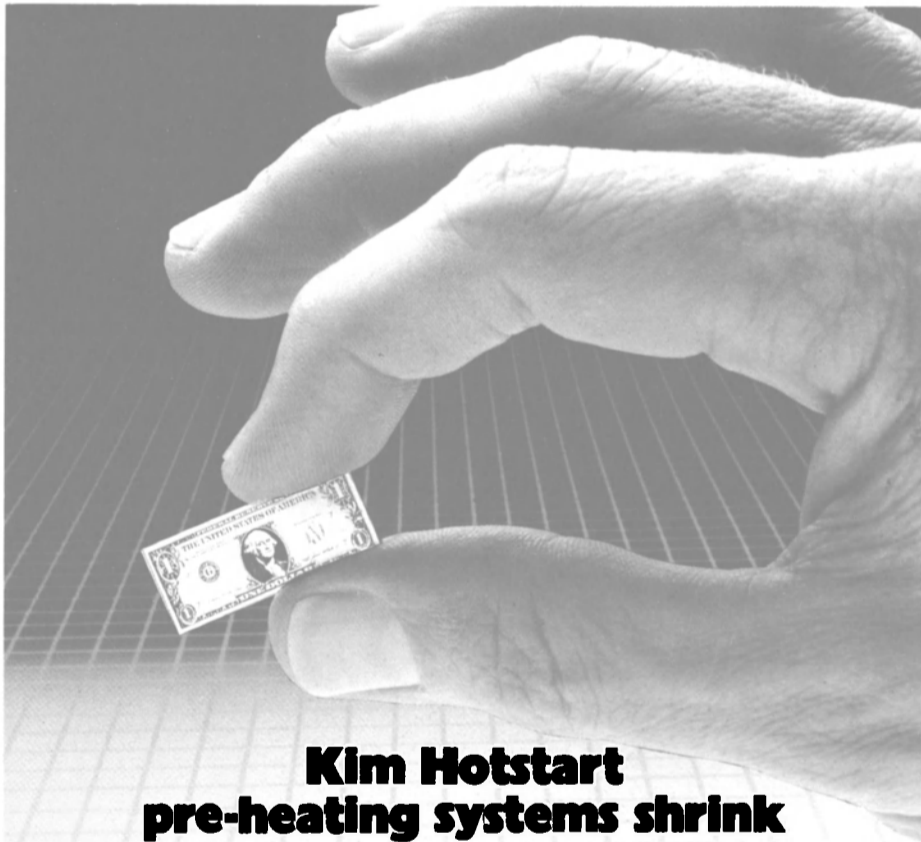
as a main and auxiliary engine in a great variety of ships, and also for power generation in offshore drilling rigs and land-based power plants.

For free literature giving full information on Wartsila Diesel's Vasa 32 engine,

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Wartsila Diesel's Vasa 32 has passed the 1,000 engine milestone. This picture shows a 12-cylinder V-version of the Vasa 32.



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Maritime Reporter/Engineering News

**Newpark Shipbuilding
Names Earl Hatfield
Assistant Repair Manager**



Earl Hatfield

Newpark Shipbuilding & Repair, Inc., Houston, Texas, has promoted **Earl Hatfield** to the position of assistant repair manager, according to **James H. Sessions**, president.

Mr. **Hatfield** joined Newpark in 1980 after eight years with Todd Shipyard, Houston. His previous assignments at Newpark include that of pipe foreman and repair superintendent.

Newpark Shipbuilding & Repair, located on Brady Island on the Houston Ship Channel, offers a variety of new construction, conversion and repair services to the inland tank barge, offshore support vessel and small merchant vessel market sectors. Newpark's state-of-the-art gas-freeing/cleaning plant provides customers with technologically advanced and environmentally safe services. Newpark Shipbuilding & Repair, Inc. is a subsidiary of Newpark Resources, Inc., Metairie, La.

For free literature describing the facilities and capabilities of Newpark Shipbuilding & Repair,

Circle 6 on Reader Service Card

**Marotta Scientific Controls
Wins Aegis Shipbuilding
Excellence Award**

The U.S. Navy and Ingalls Shipbuilding Division of Litton, Pascagoula, Miss., jointly recognized **Marotta Scientific Controls, Inc.**, Montville, N.J., for excellence in their production of superior quality, high-performance air/gas-reducing valve manifolds for use on board the Ticonderoga (CG47) Class Aegis guided missile cruisers.

The recently commissioned USS Princeton (CG59) is the newest Aegis cruiser that went to sea carrying Marotta valve manifolds. Ranging from such uses as sonar dome pressurization, main gas turbine engine start, torpedo tube firing, and 15 other applications presently aboard Aegis ships at sea, Marotta products have consistently operated with extreme dependability and reliability.

During a formal ceremony, Rear Adm. **James B. Greene Jr.**, presented **Thomas S. Marotta**, Marotta's president, with the Aegis Shipbuilding Excellence Award. At that time, Adm. **Greene** stated, "Such performance and achieve-

ment reflect with pride the dedication of the management and employees of Marotta in helping the Navy get Aegis to sea onboard the 13 cruisers presently in service with the fleet."

For free literature giving full information on Marotta Scientific Controls.

Circle 50 on Reader Service Card

**MAN GHH To Supply Deck
Cargo Barge To USSR**

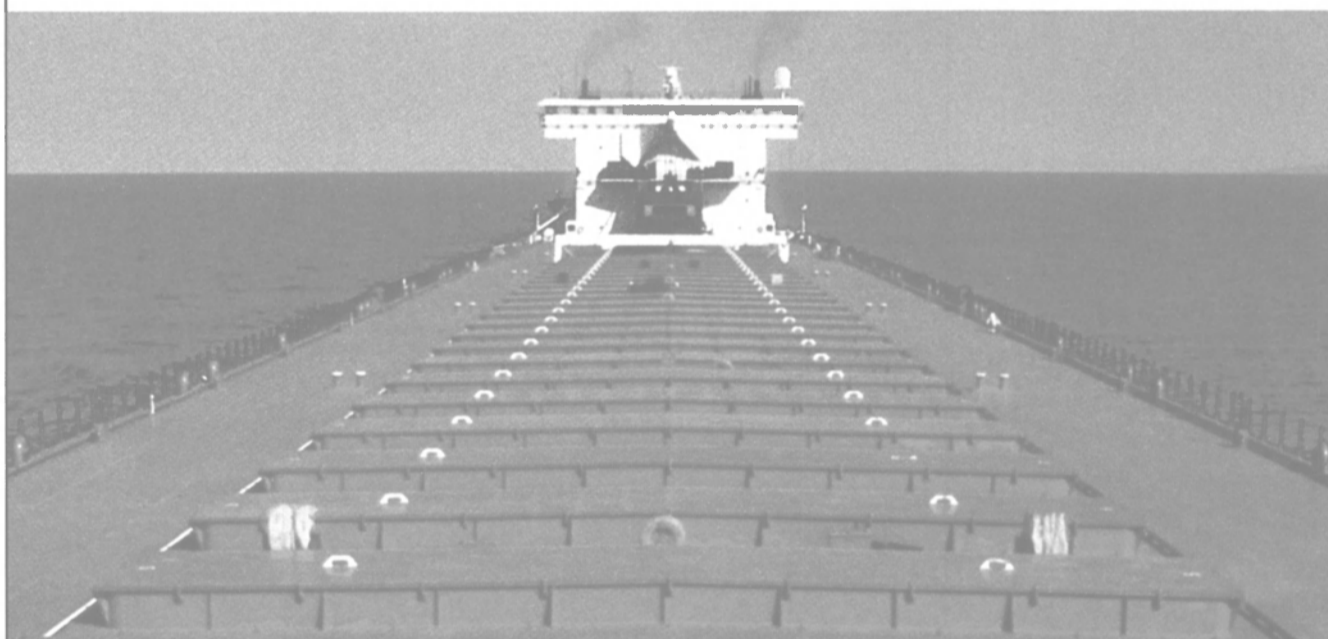
An order for the supply of a deck cargo barge plus an option for another unit has been received by the dockbuilding department of MAN Gutehoffnungshutte AG. Being a ship without its own propulsion unit, this deck cargo barge has no cargo hold. The cargo to be handled is loaded on the main deck.

Delivery to the purchaser, the Baltic Shipping Company in Leningrad/USSR, will be made at the end of March 1990. Next year, the barge, which is about 351 feet long by 79 feet wide, will start to take loads of approximately 9,000 tons of tree-trunks from Sweden across the Baltic Sea to Leningrad.

For free literature giving information on the facilities and capabilities of MAN Gutehoffnungshutte AG,

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HOW SATELLITES CAN KEEP SHIP MANAGEMENT SHIPSHAPE.



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When you're trying to keep everything on board running smoothly, you need advanced ways to secure your lines of communication with the outside world. COMSAT Maritime Services has unique communications systems designed to meet your needs.

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EUROPORT BOOTH # E.401.A
Circle 210 on Reader Service Card

ACR Introduces New Super Beam Searchlight For Larger Vessels

ACR Electronics, Inc., Fort Lauderdale, Fla., has introduced their newest, most powerful searchlight designed for the larger vessels that require paramount quality, high

performance and an outstanding design signature.

The RCL-600 searchlight features a 6-million candle power beam that can be focused to a spot or flood, continuous 360 degree turning in any direction and 50 degrees of elevation.

Its high-tech, microprocessor-based weathertight control panel is true state of the art. It features

speed control for turning and elevation, one-button heads-up auto return and lamp focusing control.

This (Xenon) searchlight is available in either 12VDC or 24VDC. An optional second station remote control station is also offered.

For full information and free literature from ACR,

Circle 100 on Reader Service Card

William N. Johnston, Former Head Of ABS

William N. Johnston, former chairman and president of the American Bureau of Shipping and the ABS Group of companies died on September 7, 1989. He lived in Short Hills, N.J., and had retired on October 1, 1987, following 36 years with this 127-year-old international ship classification society.

Mr. Johnston joined ABS in 1951 and served as a surveyor in various locations in Europe for seven years. Transferred back to the U.S. for eight years, he served in many offices before being appointed principal surveyor for New Orleans in 1966. In 1968, he was appointed area principal surveyor for Western Europe and the United Kingdom, with headquarters in London. In 1972, he returned to ABS headquarters to become assistant to the chairman of ABS. He was elected a vice president in 1974, senior vice president in 1976, and president in 1977. Following the retirement of ABS chairman **Robert T. Young**, Mr. Johnston was elected chairman and president of ABS in 1979.

Mr. Johnston is survived by his wife **Kathryn**, and three sons, **William**, **Gregory**, and **Paul**, and grandchildren. Condolences can be sent to **Mrs. Johnston**, 107 Wellington Avenue, Short Hills, N.J. 07078. **Mrs. Johnston** has suggested that a contribution could be made to a favorite charity on behalf of her husband in lieu of sending flowers.

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Those Who Know The Sea Know Stearns.

McDermott Completes Deepest Pipelines In U.S. Waters

McDermott Marine Construction has completed the deepest pipelines laid in U.S. waters. The two pipelines reached depths of approximately 1,400 feet and were installed for Conoco Inc.'s Jolliet project.

The 6.5-mile 10-inch lines were installed by McDermott's Derrick Barge 28 from the Conoco's Central Production Platform (CPP) in 620 feet of water in Green Canyon Block 52 to a tie-in point in Green Canyon Block 139 in 1,070 feet of water.

McDermott also installed a unified connector skid (UCS) for the Jolliet project in Green Canyon 184 in 1,020 feet of water. The UCS installation utilized saturation diving and McDermott's new Total Saturation System-7. These are the deepest working dives in the Gulf of Mexico. TSS-7 has a maximum dive rating of 1,500 feet and is based in the Gulf of Mexico. The UCS provides the future connection points for the flexible pipe tie-ins of the TLWP.

McDermott Marine Construction is a major operating unit of McDermott International, Inc., a leading worldwide energy services company.

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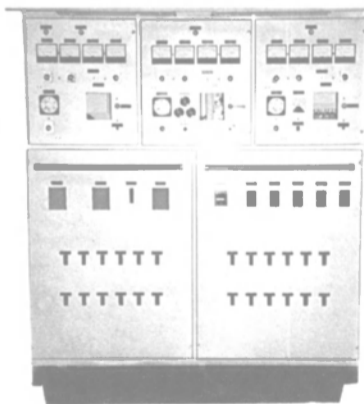
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Charles Anderson Retires As CEO Of Texas Marine And Industrial Supply



Charles C. Anderson

Robert W. Korba, president and chief executive officer of Sammons Enterprises, Inc., and **James N. Whitson**, executive vice president and chief operating officer for the Dallas-based holding company, have jointly announced the retirement, after 39 years of service, of **Charles C. Anderson**, president and chief executive officer of Houston-based subsidiary Texas Marine and Industrial Supply Company. Mr. Anderson will continue in a consulting capacity to the company.

Rob C. Mellor, president and chief executive officer of Briggs-Weaver, Inc., another Sammons distribution company, has assumed the additional responsibility for Texas Marine and Industrial Supply operations.

Texas Marine and Industrial Supply Company is a leader in the distribution of marine equipment, food and industrial supplies with branches in Houston, Corpus Christi, and Port Arthur, Texas, and in Schriever, La.

Magnavox Multi-Channel Satcom For QE 2

The luxury superliner Queen Elizabeth 2 was recently fitted with a four-channel satellite communications terminal from Magnavox, which will provide the ship's passengers with a wide array of advanced telecommunications services, including telephone, fax, electronic mail and dial-up databases.

The Magnavox MX 2400/4 multi-channel satcom system was installed aboard the QE 2 in the Port of Los Angeles.

The system provides simultaneous access to four separate Inmarsat satellite channels, each of which can be used independently for computer data and facsimile transmission as well as telephone and telex calls.

The multi-channel satcom station was developed by Magnavox under contract from Communications Satellite Corporation (COMSAT) to support the high-volume communications requirements of modern cruise ships. It is derived from Magnavox's MX 2400 Standard A Ship Earth Station design, and consists of four functionally separate MX

2400 operator stations, each with its own CRT screen, keyboard and printer, all connected to a single stabilized 2.2-meter parabolic dish antenna, sealed inside a fiberglass radome.

The QE 2 will use the system to provide enhanced ship-to-shore passenger telecommunications facilities, such as facsimile, electronic mail access, electronic banking ma-

chines and creditcard telephones, in addition to direct-dial telephone calling from private cabins.

Magnavox Advanced Products & Systems Company, Torrance, Calif., is a leading U.S. manufacturer of mobile satellite communication and navigation equipment. The MX 2400, introduced by Magnavox in late 1985, has won a large share of the world market for shipboard sat-

com equipment, as a result of its advanced and innovative features, which included automatic call logging, built-in electronic mail capability and plug-in interconnections with other communications devices, such as automatic PABX systems, data modems and fax machines.

For further information and free literature from Magnavox,

Circle 43 on Reader Service Card

The Engine.

KRUPP Mak Diesel, Inc. (Toronto)
226 Britannia Road East
Mississauga, Ontario
L47 1S6
Telephone No. (416) 890-0955
Telefax No. (416) 890-0895
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Ridewood, New Jersey 07450
U.S.A.
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Telefax No. (201) 445-2994

Circle 223 on Reader Service Card ➤

Hatch & Kirk Offers New Engine Parts For Older Diesels

Owners of older models of heavy-duty diesel engines often encounter problems in obtaining spare parts because in some cases the original engine builder is no longer in business, or has made a calculated decision to discontinue the design. In

either instance, the solutions to the problems have been few. The owner is left to repower, install expensive parts upgrades designed for higher horsepower engine versions, or rely on used and rebuilt components.

One company, Hatch & Kirk, Inc., provides a more cost-effective alternative by offering a wide range of new and fully warranted critical repair parts, including: cylinder heads, liners, pistons, and floating bushing-type connecting rods, all as

formerly supplied by the Electro-Motive Division of General Motors for their model EMD 567A and 567B diesel engines.

Henry Alford, product manager with the Seattle, Washington-based firm, described the program's inception.

"During World War II, hundreds of the EMD models 567A and 567B were installed in several classes of U.S. Navy ships. After the war, many of these ships were sold as

surplus to commercial operators and friendly foreign navies all around the world, where they continue to operate nearly 50 years after they were launched. Our company has been supplying parts to that fleet since the late 1940s.

"We founded our model 567 parts manufacturing program on the principal that if we are to maintain the viability of this market, we can't rest on 1940's engineering practices. So, when we see an opportunity to improve a part with modern technology or materials, we will go for it, provided there is no change to form, fit, or function of the item. Our 567B cylinder head, as an example, features the same technology for improved jacket water cooling of the fire deck as we use in our latest "diamond 5" version of cylinder heads for the EMD high output 645 turbo-charged and 710 series engines.

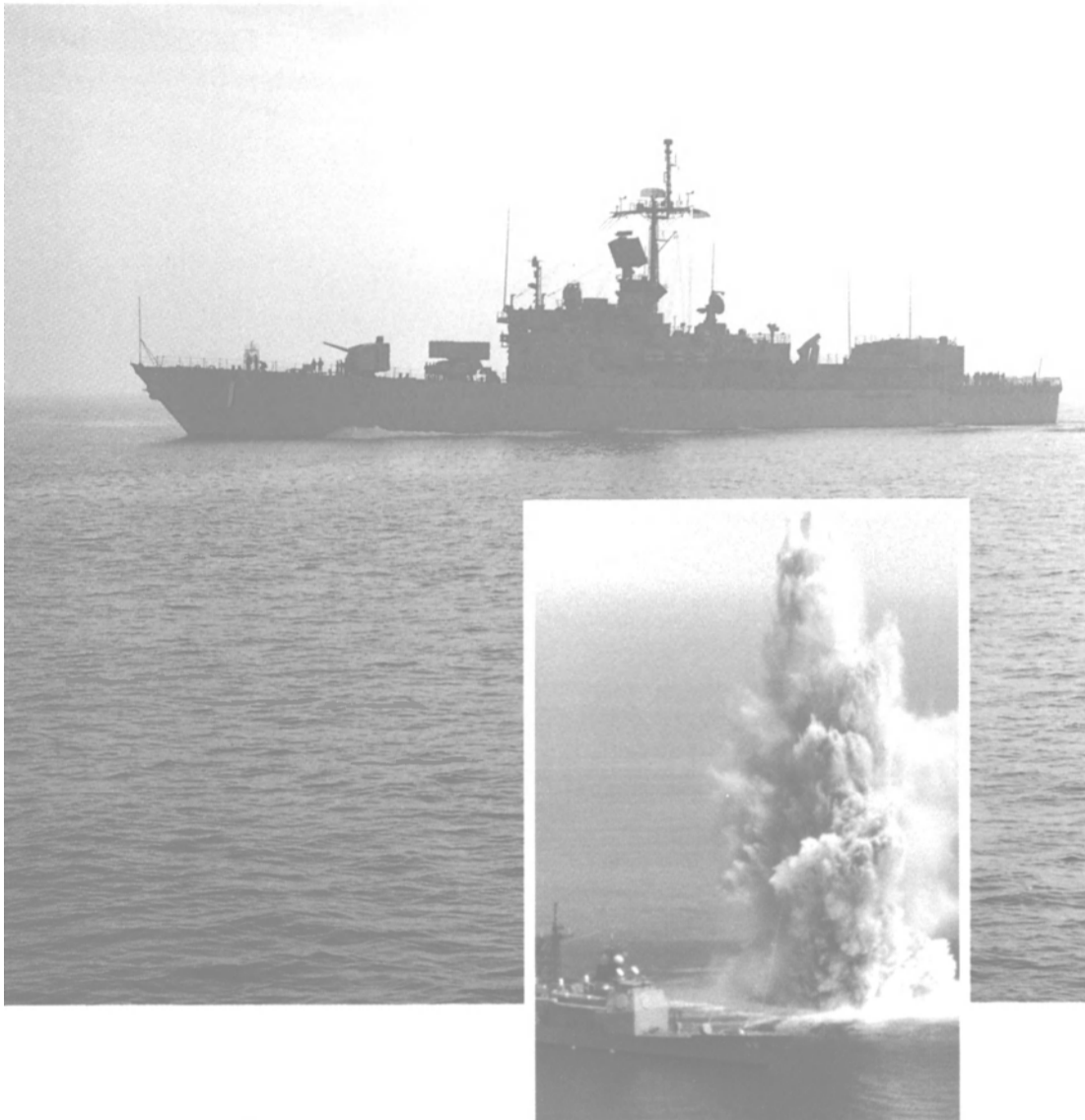
"It is a tribute to the original design that there are so many model 567 engines still in service, and by improving the product while keeping repair costs at a minimum, we intend to help keep them running for another 50 years."

Hatch & Kirk, Inc., manufacturer of the Cleveland Diesel Engine product line, claims the world's largest diversified engine parts inventory, and specializes in supplying spare parts from stock for many of the older models of engines made by virtually all of the American builders of heavy-duty diesel engines since 1940.

For free literature detailing Hatch & Kirk's extensive engine parts inventory service,

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For more information on Wyle's full range of test services, call Program Development in Huntsville, AL at (205) 837-4411, Norco, CA at (714) 737-0871 or Hampton, VA at (804) 865-0000.

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Circle 252 on Reader Service Card

Gladsky Marine Offers Large Crane Vessel For Lift Operations

The 180- by 54-foot crane vessel Big Easy is now available for salvage, wreck removal and general lift work in the Northeastern U.S., after undergoing routine hull painting at Hudson Drydock Corp. Owned by **John J. Gladsky Jr.** of Gladsky Marine of Glen Cove, Long Island, N.Y., the Big Easy features a 135-foot biforcated sheer leg boom which has the ability to lift 250 tons at a 100-foot radius. The vessel can be used for lifts of as much as 600 tons.

According to Mr. **Gladsky**, the Big Easy was built by Maxon Marine Industries shipyard in Indiana in 1981. Purchased in 1989 by Gladsky Marine, the vessel was previously employed in the Gulf of Mexico for oilfield platform installation. The Big Easy is scheduled to be used in a wreck removal project shortly, and Mr. **Gladsky** also plans to utilize the vessel in two marine float launchings at Gladsky Marine's Glen Cove, Long Island, facility.

For information on the availability and capabilities of the Big Easy, contact: **John J. Gladsky Jr.**, Gladsky Marine, Garvcies Point Road, Glen Cove, N.Y. 11542; telephone: (516) 671-2474.

Gunter Waehling Named Henschel Vice President



Gunter J. Waehling

Gunter J. Waehling has been named vice president and general manager of Henschel, a Newburyport-based producer of ship control and internal communications systems for naval applications.

He succeeds **George Curry**, who retired in May prior to the acquisition of Henschel by SPD Technologies. **George M. Gordon**, president and chief executive officer of SPD, had directed Henschel's operations during the last month until the new vice president was selected.

Mr. Waehling had served as vice president, manufacturing since joining Henschel in 1975. Prior to that, he spent nine years with United Shoe Machinery Corp., and before that he was with U.S. Gear Corp. for three years.

In announcing the appointment, Mr. Gordon noted that plans for new product development at Henschel would be accelerated now that the company is part of the SPD organization, which also serves naval markets with advanced electronic systems.

"Henschel and SPD have a common objective: enhancing our leaders' positions, respectively, in advanced electronic systems for naval applications," Mr. Gordon said.

For more information and free literature from Henschel,

Circle 83 on Reader Service Card

New MIDCO Brochure Describes Complete Line Of Friction Materials

Middletown Friction Materials Company (MIDCO) of Middletown, Conn., has published a new brochure that describes the complete line of friction materials fabricated by MIDCO.

Covered in the publication are roll linings, flat sheets, woven and molded discs, clutch facings and cork clutch discs ideal for cranes, winches and other maritime applications.

In addition to in-stock friction products, cutting, drilling and stamping of rings, disc brake segments and arced linings can be custom fabricated to meet special applications.

For more information and a free copy of the new brochure describing the complete line of friction materials fabricated by MIDCO,

Circle 64 on Reader Service Card

OSI Affiliated Companies Assume Management Of 2 U.S. Tug/Barge Vessels

Ocean Shipholdings, Inc. (OSI) recently announced that two of its affiliated companies have assumed operational management of two U.S.-flag integrated tug/barge vessels under 12-year contracts with subsidiaries of Occidental Petro-

leum Corporation. The two OSI-affiliated companies are Ocean Chemical Carriers, Inc. and Ocean Chemical Transport, Inc.

These specialized vessels are primarily employed in transporting superphosphoric acid from Jacksonville, Fla., for discharge at Black Sea ports. OSI will provide the officers through District 2-Marine Engineers Beneficial Association-Associated Maritime Officers and the unlicensed crews through the Sea-

farers International Union.

In addition to managing its own fleet of petroleum product tankers, Ocean Shipholdings, Inc. provides operational management and an extensive range of technical services for vessel owners and other clients.

This contract brings the OSI-managed fleet up to 11 ships. For further information,

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AT&T Radiotelephone Service Helps You Keep In Touch On The High Seas

By Pete Scott, Product Manager
AT&T High Seas Service

AT&T High Seas Radiotelephone Service is a two-way operator-handled service that provides voice communications between ships on the high seas (or aircraft) and land telephones or other mobile single-sideband radio stations. The communications link between ship and shore is via high-frequency (HF) single-sideband radio with coast station equipment provided and operated by AT&T, and ship equipment provided and operated by the customer or agent.

Traffic volume has been growing over the past few years, and it appears that the growth will continue, fueled by the tremendous increase in the cruise ship industry.

AT&T Radiotelephone Service provides passengers on cruise ships (and other ships and aircraft with SSB radio), via the ship's radio room, a way to keep in touch with friends, relatives and associates ashore.

Depending on location, season, and time of day, a ship's radio offi-

cer will choose from a number of assigned single-sideband frequencies and announce the call sign of the ship and the AT&T receiving station he is attempting to reach.

The signal will bounce between the earth and the ionosphere—an electrically charged atmospheric layer that surrounds the planet at varying distances from 30 to 300 miles—until it is snared in a web of high-frequency antennas at the receiving site.

Hearing the call through one of several speakers mounted on a console, a communications technician types the vessel's call sign into a computer terminal, which immediately displays the name of the vessel, the frequency on which the call was placed, and the antenna on which it was received.

The technician then establishes contact with the ship and asks where it is located.

At Manahawkin (WOO), New Jersey, and Point Reyes (KMI), California (two of three coast stations

used), the technician then pushes that geographic point on a computerized, touch-sensitive map, and a transmitting antenna designated for that region of the world is automatically selected, thus establishing the best possible communications link. The third station, at Fort Lauderdale (WOM), Florida, uses a different system but contact is also established automatically.

The technician then routes the call to the International Operating Center in Pittsburgh, where an operator makes a connection to the desired domestic or international number.

To place a call in the opposite direction, a caller dials a toll-free AT&T 800 Service number (1 800 SEACALL) and requests, through an operator in Pittsburgh, to place a call to a particular ship.

Every half hour, each high seas station broadcasts a "traffic list" of ships for which calls have been designated. The ships then call in and a connection is made between the party that placed the call, and the person on board. Calls are handled as efficiently as possible.

With a ship-to-shore call, a passenger may: pay for the call on board the ship; place the call collect; charge the call to a third number (i.e.—residence, business, etc.) provided someone answers for verification billing; or preregister prior to sailing for billing to your home, business or *AT&T Card* by dialing 1 800 SEACALL (723-2255).

Cruise passengers are encouraged to utilize preregistration without cost or obligation. It is for their convenience.

Currently 80 cruise ships are using AT&T's Radiotelephone Service. And thousands of commercial and private boats are registered for the service.

The service is generally used when a ship is more than 50 miles offshore, where other forms of short-range radio transmission begin to fail.

AT&T provides free weather broadcasts through the service and gives special priority to calls from ships in distress, making fast connections to rescue authorities and holding the line until all is safe. The cost of the service is \$14.93 for the first three minutes (three-minute minimum) and \$4.98 for each additional minute or fraction thereof. The charge for a High Seas call is the same whether the call is placed to a specified person, a specified telephone number, or a specified ship or aircraft radio call sign. Collect, *AT&T card* and third-number billed calls are permitted between ships or aircraft served through *High Seas Service* stations, and stations located in the following countries or areas: Bahamas, Canada, Dominican Republic, Jamaica, the United States, Puerto Rico, and the U.S. Virgin Islands.

For free literature about *AT&T's High Seas Radiotelephone Service*, call 1 800-874-4000, ext. 376.



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Maritime Reporter/Engineering News



The jumbo hopper barge, shown above after launching by Jeffboat, is the first barge built since the yard reopened for new construction.

Jumbo Hopper Barge Launched By Jeffboat Is First Built Since Reopening For Construction

Jeffboat, Jeffersonville, Ind., a subsidiary of American Commercial

Lines, Inc., recently held ceremonies to launch the first barge built since

its yard reopened for new construction in February 1989.

The jumbo hopper barge, built for Falco Line of Vicksburg, Miss., is the first completed of five hopper barges ordered by **Fred Farrell** and **Larry Lambiotte**, owners of Falco.

Mr. Farrell, Louisville Mayor **Jerry Abramson** and Jeffersonville Mayor **Dale Orem** participated in the launch by cutting the restraining ropes with axes.

Falco will utilize the 200-foot by 35-foot by 12-foot barge, which is classed by the American Bureau of Shipping, to transport lime on the Mississippi River.

In his pre-launch statements, **Robert Greene**, president of Jeffboat, applauded the dedicated efforts and quality work of Jeffboat's employees. "We would not be able

to celebrate today's launch without the dedication, spirit, and teamwork from each employee," commented **Mr. Greene**.

Jeffboat's workforce has risen to approximately 240, an increase of 170 since the new construction reopened. The outlook still appears favorable and it is anticipated that an additional 75 employees could be added by the end of the year.

American Commercial Lines, a subsidiary of CSX Corporation of Richmond, Va., is one of the nation's largest inland marine transportation companies, with affiliates in barging, marine construction, repair and communications.

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

Circle 18 on Reader Service Card

Furuno East Coast Distribution Center Opens

Furuno's new warehouse and distribution center in Denton, Md., is now open to serve the company's expanding customer base in the eastern half of the U.S. This facility, more than double the size of the former plant in New Jersey, provides 30,000 square feet of office and warehouse space on an 11-1/2-acre property to give dealers even better access to finished goods, parts and technical assistance.

The grand opening was attended by about 100 people, including many officials from the State of Maryland, Caroline County, and local communities. **Shigeru Kunitomo**, managing director of Furuno Electric Co., Ltd., was also in attendance. Denton, the county seat of Caroline County, is on the eastern shore of Maryland about 60 miles east of Baltimore. This location was chosen because of its centralized position and close proximity to major air, trucking and ocean shipping terminals.

According to **Bill Dupre**, president of Furuno, this increased capacity and new, dedicated staff will greatly improve Furuno's efficiency and ability to support sales efforts in the Eastern U.S.

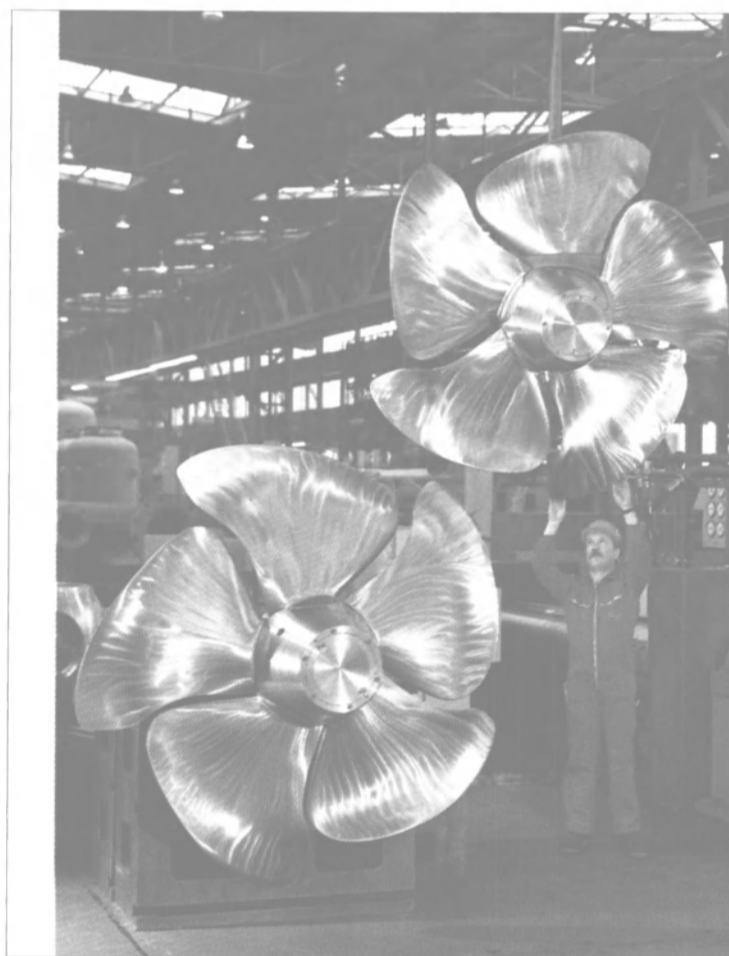
For more information and free literature from Furuno,

Circle 101 on Reader Service Card

ABS Appoints Jensen To Three-Year Term On Technical Committee

Robert O. Jensen has been appointed to a three-year term on the technical committee of the American Bureau of Shipping. The committee advises on the establishment of rules governing the survey and classification of ships.

Mr. Jensen is the fleet engineer for the Marine Services Division of the M.A. Hanna Company, a Cleveland-based Fortune 500 company with interests in formulated polymers and natural resources.



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COMPETITIVE YUGOSLAV SHIPYARDS AMONG THE WORLD'S LEADERS

Europe's Leading Builder Receives Steady Influx Of Export Orders



The Baltic cruise car/passenger ferry Amoreila (left), built by Brodosplit of Split, and the containership Sarajevo Express, built by Uljanik Shipbuilding of Pula, are just two examples of the highly sophisticated ships being delivered by Yugoslav shipyards.

World shipbuilding is undergoing a period of positive transition. Prospects in the world shipbuilding market appear to be brightening after several years of downturn. Throughout all of this period, however, competitive Yugoslav yards have maintained a steady influx of export orders. The Yugoslav shipbuilding industry has maintained its third place position in the world market, behind Japan and South Korea, for three consecutive years.

Although some tendencies were already apparent in 1985, when Yugoslavia ranked third with an order intake of about 0.5 million deadweight tons and eighth on the world total orderbook list with 3 percent of the world total, 1986 proved to be the year that put Yugoslavia "over the top." During that year, Yugoslavia secured its relatively stable position in the top three world shipbuilders by taking orders for about 1.25 million dwt, slightly less than first-place Japan.

According to Lloyd's Register of Shipping, as of December 31, 1988, the orderbooks of Yugoslav shipyards comprised 57 ships, totaling 1,420,044 gt (2,242,900 dwt), or about 5.7 percent of the world orderbook.

In 1988 five major Yugoslav shipyards delivered 22 ships (including one floating dock), totaling 251,043 gt (350,406 dwt) which represented 2.3 percent of total shipbuilding production in the world. More than 90 percent of overall production in the last 30 years has been for export, according to Jadranbrod, Yugoslavia's Association of Shipbuilding.

At the recent Cruise + Ferry 89 Exhibition and Conference in London, **Dusko Kosanovic**, sales and design director, Brodosplit, gave an insightful look at how his shipyard has achieved success.

Ship Construction At Top Yugoslav Yards				
Orderbook as of October 1988				
Yard	Hull No/Vessel		Owner	Delivery
Uljanik Shipbuilding, Pula	384	40,000 Dwt Product carrier	OSCO Product Services, Liberia	1988
	381	10,600 Dwt Reefer	Atlantic Ocean Steamship, Liberia	1989
	382	10,600 Dwt Reefer	Atlantic Ocean Steamship, Liberia	1989
	375	16,200 Dwt Product carrier	Sudoimport, USSR	1989
	385	40,000 Dwt Product carrier	OSCO Product Steamship, Liberia	1989
	376	16,200 Dwt Product carrier	Sudoimport, USSR	1989
	383	10,600 Dwt Reefer	Atlantic Ocean Steamship, Liberia	1989
	386	23,200 Dwt Container	Cross Seas Shipping Corp., Panama	1989
	387	40,000 Dwt Product carrier	Vroon Ship Management B.V., Holland	1990
	388	40,000 Dwt Product carrier	OSCO-Stripe A/S, Norway	1990
	389	9,600 Dwt Reefer RO-RO	Pluto Shipping Corp., Liberia	1990
	390	9,600 Dwt Reefer RO-RO	Pluto Shipping Corp., Liberia	1990
	391	40,000 Dwt Product carrier	Vroon Ship Management B.V., Holland	1990
392	31,750 Dwt Crude/Product	Probo PTY., Australia	1990	
393	15,000 Dwt Chemical carrier	K/S, A/S Stentroms, Norway	1990	
3. Maj Shipbuilding, Rijeka	638	60,000 Dwt Ore/Bulk/Oil	Ecoban Steamship Co., Liberia	1988
	640	110,000 Dwt Crude carrier	VSSI Carriers Inc., Liberia	1988/89
	648	16,200 Dwt Product carrier	Sudoimport, USSR	1989
	651	60,000 Dwt Ore/Bulk/Oil	Garden Gate Shippng, Liberia	1989
	617	1,200 Ton LC Crane	Sudoimport, USSR	1989
	633	39,500 Dwt Bulk carrier	Czechoslovak Ocean Shipping	1989
	635	39,500 Dwt Bulk carrier	Czechoslovak Ocean Shipping	1989
	641	110,000 Dwt Crude carrier	VSST Carriers Inc., Liberia	1990
	652	83,700 Dwt Chemical carrier	Stockholms Rederi Ab SVEA, Sweden	1990
654	110,000 Dwt Crude carrier	VSST Ocean Inc., Liberia	1990	
Brodo Split, Split	355	16,200 Dwt Product carrier	Sudoimport, USSR	1988
	359	140,000 Dwt Crude carrier	Park Transport Co., Liberia	1989
	357	2,800 Dwt Car Passenger	SF Line, Finland	1989
	363	9,500 Dwt Reefer	Freshwater Marine Inc., Panama	1989
	360	140,000 Dwt Crude carrier	Park Shipping Co., Liberia	1989
	358	48,000 Dwt Bulk carrier	Larkspur Shipping Co., Liberia	1989
	364	9,500 Dwt Reefer	Crawfish Marine S.A., Panama	1989
	361	140,000 Dwt Crude carrier	Park Transport Co., Liberia	1990
362	140,000 Dwt Crude carrier	Park Shipping Co., Liberia	1990	
J.L. Mosor Shipbuilding, Trogir	197	180 Dwt Tug boat	Brodospas, Yugoslavia	1989
	198	180 Dwt Tug boat	Brodospas, Yugoslavia	1989
	195	35,600 Dwt Floating dock	Sudoimport, USSR	1989
	196	40,500 Dwt Chemical carrier	Trans Tanker, Liberia	1989
	199	40,500 Dwt Chemical carrier	Lattitude International, Liberia	1990
	200	40,500 Dwt Chemical carrier	Lira Shipping Corp., Liberia	1990
	201	40,500 Dwt Chemical carrier	Lira Shipping Corp., Liberia	1991
202	40,500 Dwt Chemical carrier	Lira Shipping Corp., Liberia	1992	
Titovo Shipbuilders, Kraljevica	475	124 Dwt Tug boat	Luka Rijeka, Yugoslavia	1988
	480	480 Dwt Ferry	Jadrolinija, Yugoslavia	1989
	483	2,400 Dwt Pallet carrier	Simonsen & Slang A/S, Norway	1989
	485	2,400 Dwt Pallet carrier	Simonsen & Slang A/S, Norway	1990

Source: Jadranbrod

"Some years ago," Mr. **Kosanovic** said, "we decided to approach the market with a high grade of sophistication fully aware that only a few yards are capable of dealing with such sophistication, namely the yards from Finland, France, West Germany, Italy, United Kingdom, and to some extent some other yards."

ship with a 1,200-ton, fully revolving crane.

The majority of ships ordered in the Yugoslav shipyards are for export—for owners from Norway, Sweden, Holland, Finland, China, Australia, USSR, Czechoslovakia, Panama and Liberia.

According to Lloyd's Register of

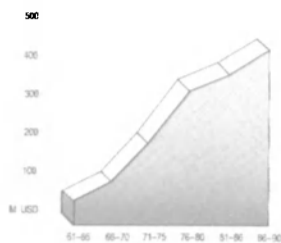
Shipping, in the first three months of 1989, Yugoslav yards delivered ships totaling 138,086 gt, good for fourth place worldwide behind Japan, South Korea and the People's Republic of China.

"A wide variety of ships, ranging from crew launches and tugs to Cape-size and Suezmax tankers and

bulkers, VLCCs, VLOOs, OBOs, product and chemical tankers, car and passenger ferries for 2,500 passengers have been exported to 70-odd countries all over the globe," stated **Ivo Vrandecic**, president of Jadranbrod.

(continued)

AVERAGE ANNUAL EXPORTS OF JADRANBROD SHIPYARDS



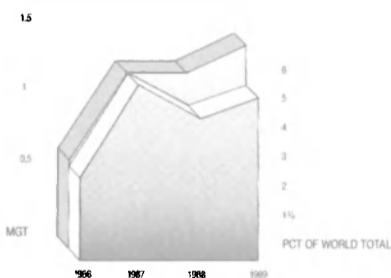
SOURCE: JADRANBROD

At the end of 1985, Brodosplit received a contract for the construction of two sophisticated cruise car/passenger ferries from SF Line—an important order for the yard since it represented a breakthrough into the sophisticated passenger vessel construction sector. The contract, however, for the construction of the Amorella and her sister, the Isabella, was a substantial technical challenge for Brodosplit, since the cruise ferry had strict specifications for a high degree of comfort and performance in both powering and maneuvering.

"The results which we obtained from the first ship, especially the market reaction from the area where she sails—Baltic Seas—gave us sufficient confidence that our decision to accept the challenge, testing our abilities in this field, was correct," stated Mr. **Kosanovic**.

In fact, both the Amorella and the Isabella have proved so successful that **Gunnar Eklund**, managing director of SF Line, is quoted as saying, "Amorella and Isabella are the calling cards of the Brodosplit shipyard that might bring them further orders for passenger vessels in the future."

ORDER BOOK OF JADRANBROD YARDS

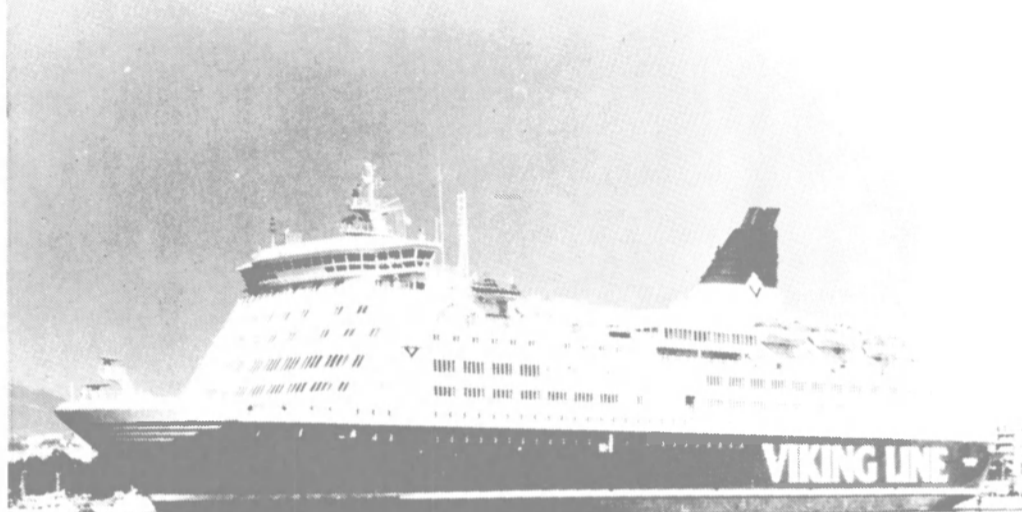


SOURCE: LR SHIPBUILDING RETURNING

The present Yugoslav orderbook includes a number of modern and innovative designs, ranging from huge Suezmax tankers of 140,000 dwt to harbor tugs of 2,010 hp. Other notable sophisticated vessels on the Yugoslav books include 110,000-dwt tankers, product carriers of 40,000 and 9,800 dwt, product/chemical tankers of 16,000 dwt, 2,200-passenger and car ferries, 12,175 m³ reefer ships, 13,590 m³ container carriers, conbulk container feeders, 60,000-dwt OBO carriers, 48,000-dwt bulk carriers, 33,000-dwt container/log bulk carriers, crane ships with 100- and 40-ton cranes, and a large catamaran crane

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Circle 206 on Reader Service Card

Yugoslav Report

(continued)

"With an orderbook close to 1.5 million gt or about 6 percent of the world total, Jadranbrod yards have established themselves as one of the significant shipbuilders and exporters in the world.

"The dominant role of export orders has forced the yards to con-

stantly realign themselves with the aggressive and competitive market," Mr. Vrandecic said.

Mr. Vrandecic also pointed out that core shipbuilding scientific research in hydrodynamics, structure and vibration analysis has provided a solid basis for innovative designs.

Among the latest sophisticated deliveries are the first tanker in a series of three 100,000-110,000 dwt sister ships, the Shoshone Spirit for VSSI Carriers of Liberia (built by 3.

Maj Shipyard), the 140,000-dwt tanker Jahre Transporter for Liberian owners, Viking Line's modern car/passenger cruise ferry Amorella (built by Brodosplit), and the Osco Sky, the first of three 40,000-dwt product carriers for Liberian owners built by Uljanik Shipyard.

The average annual exports of five major Yugoslav shipyards, which represent most of the industry and are the main source for data referred in international statistics,

SHIPS DELIVERED DURING 1988.

	No.	DWT
CRUDE OIL TANKER	2	19,812
CHEMICAL TANKER	10	277,732
PRODUCT OIL TANKER	1	59,930
ORE/BULK/OIL CARRIER	1	5,896
BULK CARRIER	1	2,830
MULTI-PURPOSE	1	325
CAR/PASSENGER FERRY	3	198
COASTAL CPF	1	—
CREW BOAT	1	—
CONTAINER/BULK	1	35,000
RO-RO/REEFER	1	—
REEFER	1	—
FLOATING DOCK	1	—
CRANE SHIP	1	124
HARBOUR TUG	2	3,898
SUCTION DREDGER	—	—
TOTAL	123	408,945

has shown a rather steep increase since 1960. Exports have grown from \$50 million in the early sixties to about \$450 million ending in 1990, an average increase of 8 percent per year. This growth has occurred despite the pressure of the downturn in the shipbuilding sector for a portion of the period. It is also interesting to note a rather high ratio, slightly over one, of compensated tons/grt showing relatively high complexity of the vessels built in Yugoslav yards. Another notable observation is the so-called "series factor" obtained by dividing the number of ship types built by the total number of ships on order—22 ship types are represented by the 57 vessels on the orderbook, yielding a ratio of 0.4, meaning in essence that less than three ships are covered by one design.

ORDER BOOK, 31 January 1989.

	No.	DWT
CRUDE OIL TANKER	9	1,110,000
CHEMICAL TANKER	1	15,000
PRODUCT OIL TANKER	16	955,450
ORE/BULK/OIL CARRIER	1	60,000
BULK CARRIER	4	175,000
MULTI-PURPOSE	4	68,000
CAR/PASSENGER FERRY	1	2,800
COASTAL CPF	1	480
CREW BOAT	3	—
CONTAINER/BULK	3	30,000
RO-RO/REEFER	2	19,200
REEFER	5	50,800
FLOATING DOCK	1	35,000
CRANE SHIP	1	3,900
HARBOUR TUG	2	300
SUCTION DREDGER	—	—
TOTAL	51	2,187,380

With prospects brightening in the worldwide shipbuilding and shipping industries, Yugoslav yards appear to be in excellent position to obtain a number of sophisticated and notable building orders—and maintain their position as one of Europe's leading shipbuilders. For free literature detailing the shipbuilding and ship-repairing capabilities of Yugoslav yards,

Circle 17 on Reader Service Card

Bennett Marine Video Offers Latest Tape—'Modern Coastal Piloting'

Bennett Marine Video, Marina del Rey, Calif., one of the world's largest distributors of marine tapes, now offers as part of their Better Boating Series, "Modern Coastal Piloting."

A sound knowledge and understanding of basic coastal piloting techniques is essential for safe and trouble-free boating. Bennett Marine Video's latest tape, "Modern Coastal Piloting," is an easy-to-follow instructional video that not only discusses theoretical concepts but gives step-by-step demonstrations using the latest electronic navigational equipment.

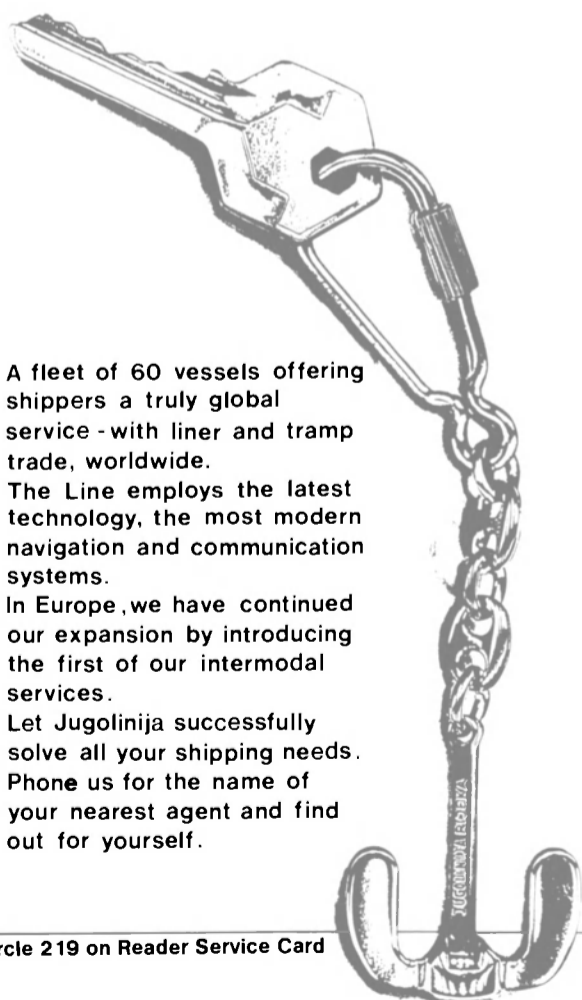
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Germanischer Lloyd Offers Amended Construction Rules Program

The international classification society Germanischer Lloyd has amended its widely used GL-Rules program to reflect further development of the rules. The new version 2.0 of the program contains Regulations for Dimensioning from Chapter 2 of the "Rules for the Construction of Ship Hulls" contained in Volume 1 of "Germanischer Lloyd Rules for Classification and Construction of Steel Hulls for Seagoing Vessels." In addition to small amendments, the new program contains an improved user's guide, and addendum No. 2 of January 1989 has been incorporated.

The program replaces version 1.3 and earlier versions and will be distributed free of charge to current users. As before, it is available for use with various computers. However, it is most frequently applied with standard PCs with hard disk and 640 KByte internal memory, or desk-top computers HP9000, series 200 or 300. Computers of the older HP9845 version are no longer supported. Users of this system may obtain a different version of the program free of charge, upon request. The license fee for new users is DM 2,000.

For further information,

Circle 102 on Reader Service Card

Consolidated Switchgear Established From Old 'Con-Select' Organization

Consolidated Switchgear, Inc. of Madisonville, La., is now in its second year of operation. Consolidated was established by a core group of management and production people from the old "Con-Select" organization of Harvey, La., and Beaumont, Texas, to provide quality, cost-effective electrical equipment and services for the marine industry.

Consolidated Switchgear Inc. is fully qualified for, and experienced in, handling all aspects of the most complex marine electrical installation from conception through start-up. This system capability includes all, or any portion of the following essential elements of marine electrical installation:

1. Pre-design concept studies, including feasibility studies, carried out with the owners or their naval architects and marine engineers for the entire electrical and electronic system.

2. Preparation of bid or purchase specifications and guidance plans for the owner, carefully coordinated with hull and mechanical design by others, in full accordance with any worldwide regulatory body or classification agency requirements.

3. Development of final ships electrical wiring drawings for the shipyard in accordance with owners specifications and/or guidance plans in full accordance with any specified regulatory body or classification agency.

4. Electrical project management for the owner including complete coordination and interface with all electrical and/or electro-mechanical equipment manufacturers or suppliers. In this capacity Consolidated reviews all submittals from such suppliers and makes inspection visits, when required, to shipyards and suppliers' plants to assure quality and conformance to specifications. In this capacity Consolidated usually supplies accurate terminal to terminal interface drawings and guid-

ance plans as required.

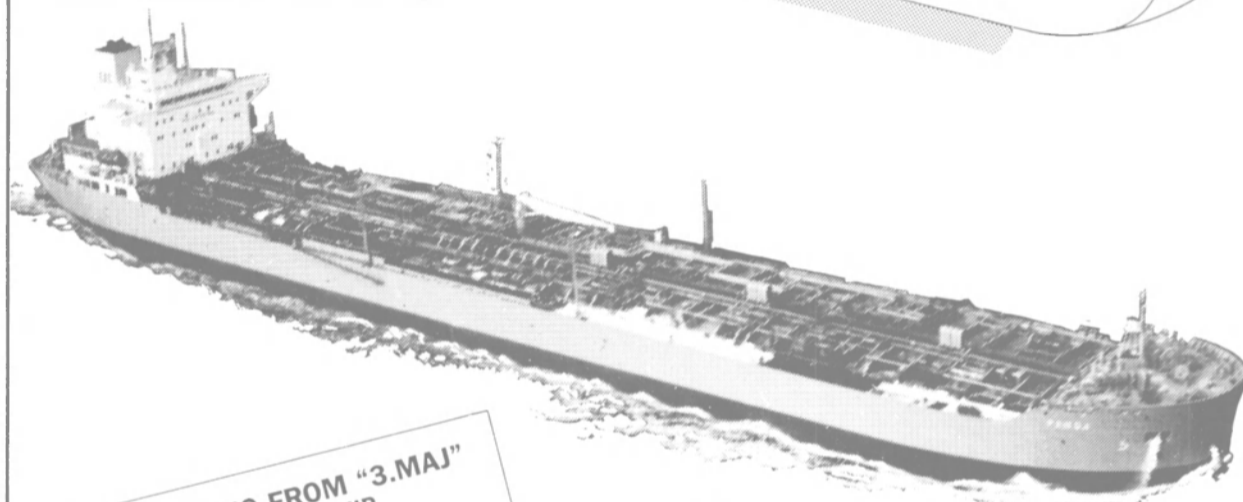
5. Turn-key electrical system installations for shipyards. In this capacity Consolidated can offer shipyards, without sophisticated electrical design and installation capability, a turn-key electrical system including electricians labor and wiring materials. As the designer and supplier of major equipment such as switchboards, panels and motor controllers, etc., the suitability of all equipment for the purpose is virtually guaranteed.

6. As the major electrical equipment supplier, either to the owner or the shipyard, Consolidated can supply a complete coordinated package. Consolidated either manufactures the equipment or furnishes equipment manufactured by others at attractive prices due to their volume buying power as a distributor.

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Draught, design	4.35 m
Deadweight at draught 4.35 m	3,900 t
Gross tonnage	abt. 17,000
Propulsion electric motors	3800 kW
power MCR	
Electricity generation diesel	4 x 3600 kW
power plant	11 knots
Trial speed	

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NAPVO Releases Safety Manual

The release of the National Association of Passenger Vessel Owners' (NAPVO) Safety and Training Program Manual has been announced by **Coe Sherrard**, NAPVO's president. "This document serves as a comprehensive manual to train crew members about the safe operation of small passenger vessels. It was

developed by the Safety and Training Committee, with the assistance of Marsh and McLennan and should be a valuable addition to any company's training program, Mr. **Sherard** said.

The program addresses such topics as development of a safety policy statement, safety inspections, employee hazard recognition, incident reporting, ship personnel responsibilities, and operations. The manual was designed to help establish a

basic set of operating and training guidelines for deckhands, captains, restaurant and entertainment personnel and may be used to develop a formal written company training program.

Copies of the manual have been provided free to all NAPVO members. Additional copies may be ordered at a cost of \$10 each. To order, contact Marsh and McLennan, 10 South Broadway, St. Louis, Mo. 63102 (Attn: Janie Mueller).

Gulf Coast Fabrication Appoints R.A. Chase Project Manager



Richard A. Chase

Richard A. Chase has been appointed project manager by Gulf Coast Fabrication, Inc. He will be responsible for the development, administration and implementation of special projects which involve major marine contracts for conversion, new construction, overhaul and repairs.

Prior to accepting the new position, Mr. **Chase** was the chief estimator for Algiers Iron Works & Dry Dock Co. Inc. He has over 20 years' marine experience having sailed as chief engineer for Ingram Barge to practicing marine surveying for Swanson, Kebedeaux, Latham & Associates.

October '89/March '90 Liner Rates Announced By Military Sealift Command

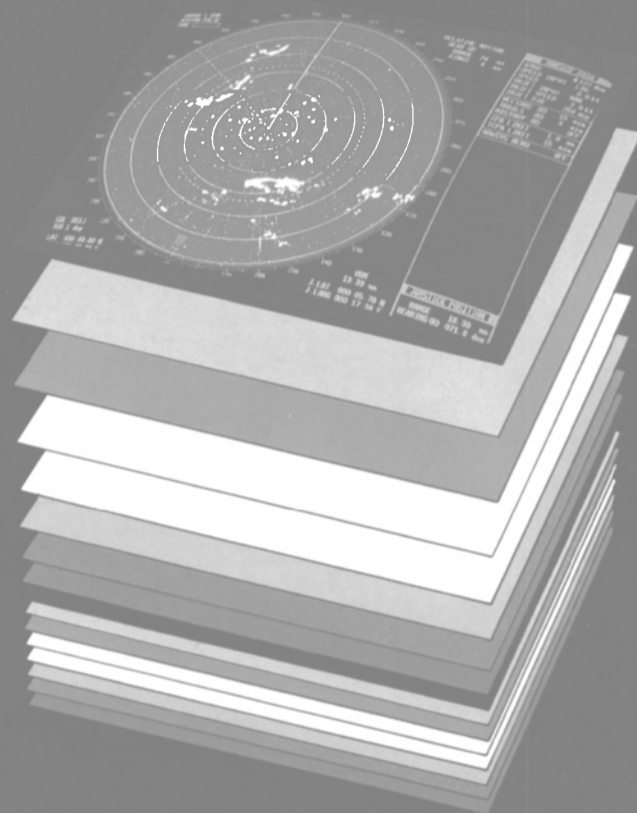
The U.S. Navy's Military Sealift Command announced the acceptance of rates offered by 16 U.S.-flag ocean carriers under its container and shipping agreements for the period October 1, 1989 through March 31, 1990.

In the upcoming six-month cycle, the Department of Defense will ship approximately 2.4 million measurement tons representing approximately \$200 million in prospective revenue to ocean carriers operating U.S.-flag ships.

For the first time, rates were accepted for the October 1989-March 1990 cycle from Sea Barge Group, Inc. of Miami, Fla., and Percy Marine, Inc. of Houston, Texas. These two carriers will provide service from the U.S. East Coast, Gulf Coast and West Coast to Panama. In addition, expanded service will be available from the U.S. East Coast to Europe with service offered by American Auto Carriers/Autoship Joint Service of Englewood Cliffs, N.J., and Marine Carriers, Inc. of Secaucus, N.J.

Rates also were accepted from the following companies with prior contracts with MSC: Afram Lines (USA), Ltd.; American President Lines, Ltd.; American Transport Line, Ltd.; Central Gulf Lines, Inc.; Crowley Caribbean Transport, Inc.; Dock Express Contractors, Inc.; Farrell Lines, Inc.; Lykes Brothers Steamship Co., Inc.; Matson Navigation Company, Inc.; Sea-Land Service, Inc.; Topgallant Group, Inc.; and Waterman Steamship Corporation.

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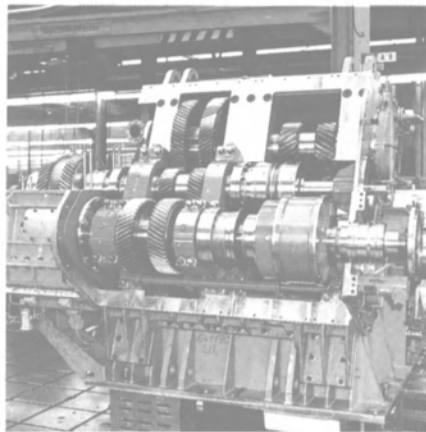


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Renk Tacke Gear Units Chosen By German Navy For New F 123 Frigates



Renk Tacke CODOG-gear unit in locked train design for Nato Frigates.

The Germany Navy has decided in favor of Renk Tacke gear units for the main drive of the new F 123 frigates, following the Navy service boats class 423, the fast mine sweepers class 343, and the mine hunters class 332.

The propulsion plants concerned are each made up of two gear units per frigate of so-called locked-train design. The CODOG gear units (Combined Diesel or Gas Turbine) either transmit the power of 20,000 kw each or the power of the high-speed diesel engines each yielding 3,800 kw to the controllable pitch propellers. Diesel engine and gas turbine operating can alternatively take place as a function of the desired travel profile. During diesel engine operation (cruising travel), a speed of up to 20 knots and at maximum speed travel (gas turbine operation) 30 knots can be reached.

The specific features of these gear units comprise their low-noise operation conditions, the latter being a precondition for successful submarine warfare. Gear units of this design up to full gas turbine and diesel engine power levels have already been subjected to back-to-back tests. During such tests, noise and vibration values were registered which have been even more favorable than the required values.

For more information and free literature,

Circle 85 on Reader Service Card

\$61.4-Million Contract Awarded Maersk Line By Military Sealift Command

Maersk Line, Limited of Madison, N.J., has been awarded a \$61.4-million contract for the operation and maintenance of 12 ocean surveillance ships (T-AGOS). The contract performance period is three years with the first ship being turned over approximately October 1, 1989, and the last in September 1990.

Ocean surveillance ships are the platform and means of transportation for the Surveillance Towed Array System (SURTASS), a passive

Circle 24 on Reader Service Card →

underwater sensor that gathers underwater acoustical data and transmits it ashore for evaluation. The ships carry a civilian crew of 21 and 12 SURTASS technicians assigned to the Space and Naval Warfare Systems Command.

The names of the 12 T-AGOS ships are: USNS Audacious, Assertive, Assurance, Bold, Contender, Indomitable, Invincible, Persistent, Prevail, Stalwart, Triumph, and

Vindicator.

T-AGOS ships operate worldwide in 90-day mission cycles to support the antisubmarine warfare mission of the Commanders-in-Chief of the Atlantic and Pacific Fleets. The Fleet Commanders direct the operations of the ships through the issuance of classified mission operation orders.

Non-mission related activities, including U.S. port maintenance and

repair periods, will be directed by the Commander of the Military Sealift Command.

"The T-AGOS ships are vital to the U.S. Navy's mission," said Vice Adm. **Paul D. Butcher**, USN, Commander, Military Sealift Command. The 224-foot ships operate under arduous conditions and provide invaluable data to the fleet commanders. They are hardworking and important fleet assets."

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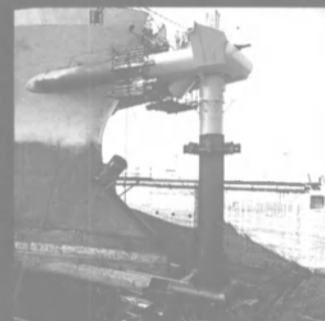
More than 5,000 ships of every type and size built over a period of more than 200 years to service under all flags: this is the background of the Merchant Shipbuilding Division. The largest design centre in Europe, the extensive use of the CAD/CAM system, the robot-aided production and other highly automated equipments of the yards, explain why Fincantieri is able to meet the requirements of the world markets: tankers, bulkcarriers, general cargo ships, gas carriers, cruise liners, container ships, ro-ro ships and ferries, offshore craft such as, for example, pipe-laying vessels, drilling units, SSCV, platform modules.

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20 graving docks for ships up to 400,000 tdw, 8 floating docks for ships up to 160,000 tdw, and 13 km. of repair berths strategically located along the main and busiest Mediterranean shipping routes: these are the facilities that the seven yards of the Shiprepairing Division of Fincantieri can offer to the Shipowners. Every type of maintenance, repair and conversion works can be undertaken on merchant ships and naval vessels, offshore units, marine diesel engines and auxiliary equipments. A Division's pride is also the successful achievement in the construction of the most technologically-updated offshore units.

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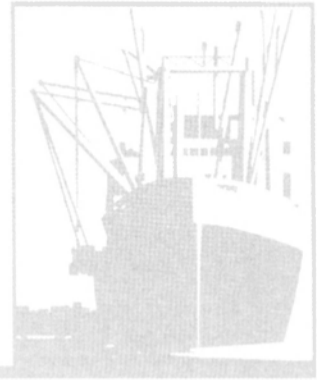
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New Labor Agreement At MIL-Davie To Increase Shipyards Efficiency

One of Canada's largest shipyards, MIL-Davie, Inc., Lauzon, Quebec, has signed a three-year collective agreement with unions representing the yard's 1,800 production workers which will achieve greatly increased efficiency and

competitiveness by introducing new working methods, significantly greater job flexibility and increased mobility within the yard between trades.

At the same time, the company has embarked on a C\$60-million modernization program involving the installation of new equipment and the creation of new facilities; this will complement a recent agreement with Japanese shipbuilder IHI for shipbuilding technology transfer

with the aim of introducing within the yard the very latest in production methods.

MIL-Davie's president and chief executive **Don Challinor** said, "The increased efficiency now possible through our new labor agreement, plus the considerable modernization program currently under way, will be the cornerstone for our success in the future by making us very much more efficient and competitive.

At present, MIL-Davie, which has a total of 2,400 employees, is building three patrol frigates for the Canadian Navy, modernizing two Tribal Class destroyers, and has recently launched a Gulfspan Class ferry, the 1,200-passenger Joseph and Clara Smallwood, for Marine Atlantic Inc.

For free literature detailing the facilities of MIL-Davie,

Circle 5 on Reader Service Card

ACR Introduces New Super Beam Searchlight For Larger Vessels

ACR Electronics, Inc., Fort Lauderdale, Fla., has introduced their newest, most powerful searchlight designed for the larger vessels that require paramount quality, high performance and an outstanding design signature.

The RCL-600 searchlight features a 6-million candle power beam that can be focused to a spot or flood, continuous 360 degree turning in any direction and 50 degrees of elevation.

For full information and free literature from ACR,

Circle 100 on Reader Service Card

'Speed Reducers And Your Bottom Line'—A New Free Brochure Offered By Falk

"Speed Reducers And Your Bottom Line—A Closer Look," is a new eight-page brochure now available from The Falk Corporation. The four-color brochure includes information on how to evaluate overall lifetime costs of speed reducers. It goes on to tell how speed reducer maintenance costs, parts replacement costs, and unscheduled lost production can add to the true lifetime costs of speed reducers.

The brochure also details how Falk speed reducers are designed to keep lifetime operating costs down. According to Falk, the majority of reducer maintenance problems are lubrication related. Falk's lubrication system includes the Magnum® seal, which virtually eliminates leading shaft seals. The Magnum seal, combined with low sump temperatures of less than 200 degrees, eliminates almost all lubrication problems, the manufacturer said.

The brochure includes application photos, diagrams and product cutaways.

The four-color guide describes how Falk assists customers from the initial reducer selection process right through installation. Falk has 34 district sales offices, staffed by 60 sales engineers, ensuring experienced engineering support and fast service response. At the local level, 600 distributor locations offer customers close-at-hand expertise and service.

For a free copy of Bulletin 131-100, "Speed Reducers And Your Bottom Line—A Closer Look,"

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\$4.2-Million Contract Awarded Century Marine For Tanker Repairs

The Maritime Administration has awarded a \$4,173,190 contract to Century Marine Co., 200 Pier Road, Orange, Texas, for repairs to the tanker Mount Vernon that will upgrade the vessel to Ready Reserve Force (RRF) status.

The contract covers upgrading of the vessel to meet regulatory inspections and certification including hull, machinery, electrical, navigation-communication equipment, and general topside repairs.

Cummins-Powered Tender Serves Washington State's New Floating Bridge



The unusual shape of the bridge tender—with a tall house forward and extremely low work deck aft—was required because of the floating bridge's structural design and height.

When the world's largest vehicular floating bridge was completed recently at Seattle, a newly built, Cummins-powered vessel—Driftwood II—was on hand to begin serving as the concrete structure's tender.

Performing bridge maintenance, backup firefighting and environmental cleanup chores is a 46-foot, specially designed steel vessel powered by a pair of Cummins 6BT5.9-M marine diesels, each rated at 180 horsepower at 2,500 rpm. Each in-line engine powers a 360-degree-rotatable Schottel SPJ-55 pump-jet thruster mounted below the pilothouse.

In addition to the main engines, the Driftwood II is equipped with a Cummins 6B25.9-M diesel, rated at 115 horsepower at 2,500 rpm, for powering a 750-gallon-per-minute fire pump. The main engines are turbocharged and the fire pump engine is naturally aspirated.

The Driftwood II, owned and operated by the State of Washington Department of Transportation, not only is tending the new Interstate 90 floating bridge across Lake Washington but will be assigned to an older floating bridge that will reopen to traffic in 1992 after receiving major refurbishing. The new bridge will be for westbound traffic and the refurbished structure will be for eastbound traffic.

The two floating bridges are anchored alongside each other between Seattle and Mercer Island in Lake Washington.

Washington State's new bridge tender was designed by Columbia Sentinel Engineers Inc., Seattle-based naval architectural and marine engineering firm, and built by

Fishermen's Boat Shop Inc. at Everett, Wash.

The 40-ton, blunt-bowed vessel, which has a top speed of about 8.5 knots, was equipped with Cummins 6B Series diesels because these engines have horsepower ratings that fit well with the rpm requirements of the pump jets and fire pump, reported Paul Zankich, Columbia Sentinel's principal naval architect.

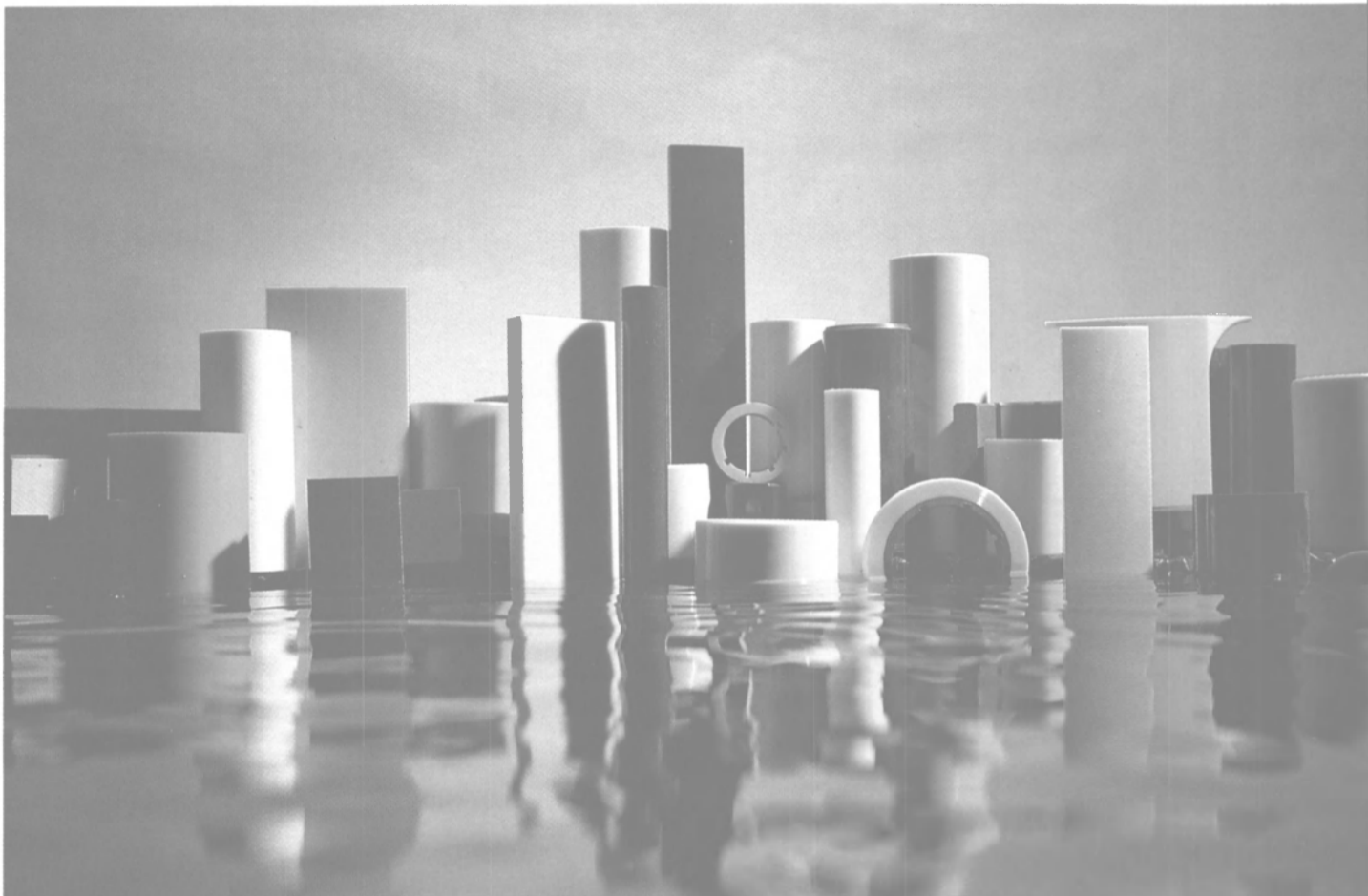
"We looked at several manufacturers to see what they had available in that horsepower range," he said. "We wanted preferably an American-made engine with good availability of parts and service. That particular (Cummins 6B Series) engine satisfied all of those conditions."

Among the multipurpose vessel's bridge maintenance duties will be assisting with adjusting anchor cables, flushing bridge drains, main-

taining navigation lights and doing other maintenance as needed. The vessel is equipped with a six-ton-capacity, knuckle-boom hydraulic crane, pilothouse controls at stations both fore and aft inside the pilothouse and quick-disconnect connections for portable hydraulic and pneumatic tools.

For more information and free literature on Cummins engines,

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Lindenau Shipyard Delivers 12,100-DWT Chemical Tanker To West German Owners

The Kiel-Friedrichsort shipyard of Lindenau GmbH Schiffswerft & Maschinenfabrik recently delivered the 12,100-dwt chemical tanker Hummel to her owners Carl Buttner Shipping Company of Bremen.

The 477-foot Hummel is the sister ship of two vessels delivered by Lindenau Shipyard to Carl Buttner in December 1984 and July 1986, respectively. The Hummel is an energy saving oil and chemical tanker classed by Germanischer Lloyd + 100 A4 E3 "Chemical Tanker Type II" "Oil Tanker" + MC E3 AUT. The double-skin tanker has a deadweight tonnage on summer freeboard of 12,326 tons, gross tonnage of 7,421 tons and net tonnage of 4,069 tons.

Powered by a Krupp MaK 8M551 diesel engine with a nominal output

of 4,250 kw (5,695 bhp) at 450 rpm, the 14-knot Hummel was designed and built especially for the transport of chemicals and mineral oil products. The ship has 20 cargo tanks that are divided into seven side tanks (including two for slops) and six center tanks. The total volume is 14,365 m³. Due to her double bottom and double hull, the Hummel can transport products of IMO Type II in all her cargo tanks. All cargo tanks and cargo lines are coated with Camcote N3. All cargo tank internals, heating coils and stairs are of stainless steel. Therefore, the Hummel can transport more than 400 high-class chemicals and products. The double hulls of the ship and environment by lowering the risk of collision and there-

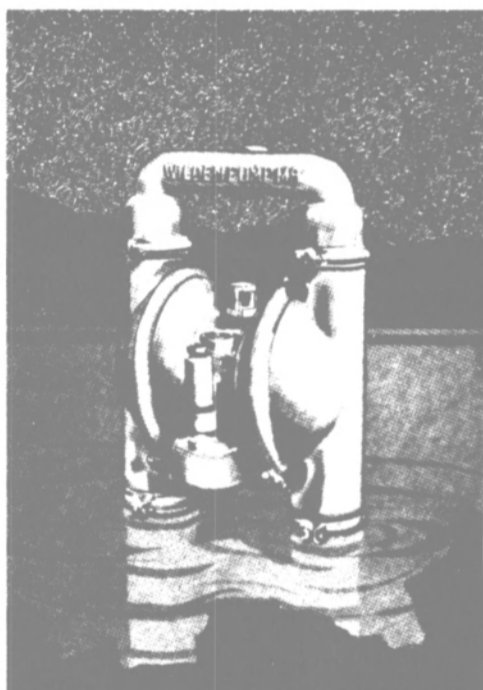


The double-skin chemical tanker Hummel, built by West German-based Lindenau Shipyard for Carl Buttner Shipping Company, is powered by a single Krupp MaK engine to speeds of 14 knots.

fore lowering the risk of environmental pollution. Her double-hull design also provides the benefits of: faster cleaning of her tanks (because of smooth inner tank walls); heat energy savings; separation of cargo and ballast water; and the capability

of transporting high-class liquids.

Other innovative design features of the Hummel include: optimized hull lines; an efficient stripping/oil discharge monitoring system; a loading control station in the deckhouse; a steam-heated Butterworth



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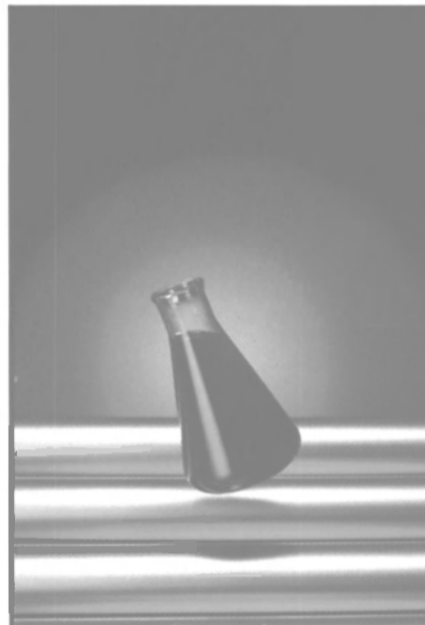
It also stands up to chemicals, grout, resin, oil, glue and low density powders.

The heart of the Wilden air-operated double diaphragm pump is its unique air valve which shifts the air supply to both diaphragms alternately with complete reliability under all conditions of head and flow.

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Volume is infinitely variable by controlling air flow to pump, from a few gallons per minute to over 14,000 gallons per hour. No pressure relief valve is required and the pump can run dry indefinitely.

Wilden pumps are available with wetted parts in aluminum, cast iron, stainless steel, and Hastelloy C. Non-wetted parts in aluminum or cast iron. Elastomers in Neoprene, Buna N, Norel, Viton®, and Teflon®.



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heater with a capacity of 4.2 Gcal/h, which means up to eight tank washing machines can operate simultaneously; and segregated ballast system.

For free literature detailing the shipbuilding capabilities of the Lindenau Shipyard,

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**HUMMEL
Particulars**

Overall length: 477 feet
Molded breadth: 64 feet
Draft: 27-1/2 feet
Keel laying: 6/13/88
Launching: 2/4/89

Equipment List

Main engine	Krupp MaK
Gears	Renk-Tacke
Coupling	Vulkan
PTO coupling	Voith
VP propeller	KaMeWa
Auxiliary diesel	Yanmar
Generators	Siemens
Electric motors	AEG
Steering gear	Frydenboe
Bowthruster	Jastram/ABB
Steam boiler	Aalborg
Freshwater generator	Atlas Danmark
Sewage plant	Hamworthy
Centrifugal pumps	IRON, Sihi
Compressors	Sauer & Sohn
Screw displacement pumps	Bornemann
Deck auxiliary engines	Norwinch
Roller chain stopper	Norwinch
Cargo tank gate valves	Sening
Main switchboard/ distribution board	Siemens
Switchboards and consoles	Janssen
Cargo pump switchboards	AEG
Cable work and lighting	Siemens
Radar	Krupp-Atlas Elektronik
Echo sounder	Simrad
Speed indicator	Sagem
Gyrocompass	Anschutz
Telephone system	Telefunken System Technik
Automation	Janssen
Emergency diesel generator	Deutz/Siemens
Spare cargo pump	Frank Mohn
Cargo tank level indicator	Whessoe
Radio system	Telefunken System Technik
Lifeboats	Fr. Fassmer
Boat davits	Schat Davit
A/C, ventilation	ROM
Stern tube seals	Simplex/Blohm & Voss
Plate freezer	Schmidt
Refrigerating plant	BBC-York
Separators	Westfalia
Fire extinguishing system	Minimax
Heat exchangers	Prang
Provision crane and cargo-handling crane	Heinrich Schroder
Steam converter	Bergfeld & Heider
Accommodation	HW-Metallbau

**Third In New Series Of
Navigational Satellites
Launched Into Orbit**

The third in a new series of navigational satellites for the Global Positioning System (GPS) was successfully launched into orbit from Cape Canaveral, Fla., on a U.S. Air Force Delta II rocket.

According to Magnavox Advanced Products & Systems Company, Torrance, Calif., a leading manufacturer of GPS user equipment, this was the third production-model Block II satellite to go into orbit this year. The Block II satellites are sup-

plementing the existing partial constellation of six operational prototype Block I satellites.

Eventually, there will be 21 active satellites in the Global Positioning System, providing constant updates in real-time of geographical location for ships, aircraft, land vehicles and even individuals. It will be used by U.S. and allied military forces, and also, in a slightly less accurate form, by civilian users.

According to a "White Paper" issued by Magnavox, there should be enough Block I and Block II satellites in orbit to provide worldwide uninterrupted coverage for surface navigation by mid-1991.

Magnavox Advanced Products & Systems Company is a leading manufacturer of GPS navigational equipment. The company offers a full family of GPS products, including extremely precise survey-quality

systems, military systems and general marine GPS navigation receivers. The company reports that there is a considerable demand of GPS equipment, even though full worldwide availability is still more than a year away.

For more information and free literature from Magnavox,

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Circle 215 on Reader Service Card



Deck Machinery And Cargo-Handling Equipment

To remain competitive in the world of shipping, vessel operators must keep their port time for loading and unloading operations to a minimum. Fast, reliable, and efficient cargo-handling gear, deck machinery, and cargo access equipment—all invaluable tools—can provide a competitive edge by reducing costly port time.

That is why the editors of MR/EN annually review the latest products and developments of the major manufacturers and suppliers of deck machinery and cargo-handling equipment. The following review is based on information received as of press time.

Free literature describing all the equipment featured in this review is available from the manufacturers. If you wish to receive additional information and brochures on any of the products described, circle the appropriate Reader Service number(s) listed below the companies' names on the post-paid Reader Service Card bound in the back of this issue.

CRANDALL DRY DOCK

Circle 73 on Reader Service Card
Crandall Dry Dock Engineers, Inc., of Dedham, Mass., is the sole North American agent for Etablissements Marit of St. Amand-les-Eaux, France, a family-owned and -operated firm since 1904. Ests. Marit manufactures high quality marine chains ranging in size up to 100 mm in diameter. Marit's philosophy has always been one of top quality at a reasonable price. To insure this, the latest manufacturing technology as well as constant monitoring of production procedures is employed. Marit chain can be manufactured to meet the requirements of Veritas, Det norske Veritas, Lloyd's Register of Shipping, and the American Bureau of Shipping. Additionally, Marit has been awarded RAQ2 probate quality by the French Navy.

Marit offers the following products: stud link anchor chain, anti-magnetic chain, carbon and special steel chain, chain with antiwear heat treatment, open-link chain (calibrated and uncalibrated), special swivels, shackles, connecting links, high efficiency anchors, quick release hooks, and other marine chain-related items.

ELEVATING BOATS

Circle 74 on Reader Service Card
Elevating Boats, Inc., Braithwaite, La., manufacturer of over 700 hydraulic offshore cranes has successfully implemented its manufactured cranes for use on inland waters. These cranes are manufactured to API, USCG, ABS, OSHA specification, and can withstand severe offshore environment conditions.

EBI Cranes manufactures double tapered box boom and telescopic cranes ranging in capacity from 2-1/2 tons to 100 tons, with a dynamic coefficient of 2 (reference to API2C). Some of these units are designed with "low profile" features for ease of transport under low bridges.

EBI incorporates rack and pinion system for its telescopic mechanism similar to the lifting system of offshore vessels (Liftboats). This system is comprised of an external gearbox that eliminates the need for the internal hydraulic cylinders.

The use of EBI lifting devices designed for offshore use on inland waters provides the following advantages: high safety factor (API); light weight (no counter-weight required); economical; and simple to maintain.

EBI owns and operates 60 liftboats and is a manufacturer of liftboats. EBI also offers hydraulic planetary winches 30,000 to 120,000 inch-pounds rated load; hydraulic cylinders from 1-inch to 18-inch bore; and rotating mechanism and

lifting gearboxes up to 120,000 inch-pounds.

HAGGLUNDS MARINE

Circle 75 on Reader Service Card
ASEA Hagglunds Inc., Montvale, N.J., is a subsidiary of the Sweden-based company Hagglunds Marine & Offshore AB, normally known as "Hagglunds" in shipping circles. Hagglunds has been a major supplier of electrohydraulic cranes to the marine and offshore market for the past 30 years. Their products range spans from two tons service and hose cranes up to 120 tons twin cargo cranes.

Research and development efforts during the past decade have resulted in the development of their own electronic crane control system as well as microprocessor-controlled cargo-handling systems. These systems, Steadyline and Swing Defeater, are capable of increasing cargo-handling productivity up to 40 percent. Hagglunds also recently introduced on the market port cranes based on experiences gained from the delivery of over 5,000 cranes.

All the major hydraulic components in the cranes are manufactured by Hagglunds assuring strict quality control. In addition, Hagglunds' worldwide service organization guarantees after sales support. Spare parts and service are available 24 hours a day, 365 days a year.

IMO INDUSTRIES

Circle 9 on Reader Service Card

Imo Industries Inc. offers a wide range of liquid cargo-handling equipment through its companies and divisions.

The IMO Pump Division of Imo Industries Inc. has introduced a vertical deepwell barge pump designed to unload and strip liquid cargo

tanks carrying heavy petroleum products at the rate of 1,500 gpm.

In addition to #6 fuel oil and asphalt, the positive displacement pump can handle products as light as #2 heating oil. Designed for use on new installations, refits and conversions, the new pump provides performance for all variations of cargo characteristics and dockside piping arrangements.

The Gems Sensor Division of Imo Industries Inc. offers two liquid level subsystems which provide reliable liquid level indication where closed loading of shipboard cargo is a requirement.

The two subsystems—a Dipstick Liquid Level Indicator and a Self-Checking Level Switch—provide important "see, hear and feel" features for tankermen, barge operators and other ship personnel responsible for safe, accurate and reliable bulk transfer of cargo.

The Gems Dipstick Liquid Level Indicator is a compact, entirely self-contained liquid level indicating unit, designed primarily for use in storage drums, vats and tanks. It is excellent for "on-the-spot" level readout applications when electrical power is not available.

The Gems Self-Checking Level Switch provides a unique method of confirming, from outside the tank, the operational integrity of all vital components of the self-checking level switch.

The level switch was designed specifically for use in closed-loading crude and fuel oil tankers, chemical and other product carriers.

A new Hydraulic Liquid Cargo-Handling (HLCH) system for use on board chemical and product tankers has been introduced by IMO AB, of Imo Industries Inc.

A complete system for cargo handling, the HLCH system is designed for dry installation on product tankers as well as crude oil tankers. Flows of 1,200 m³/h per pump at a maximum of 120 mlc can be reached.

The system allows remote control as well as local control. Additional functions can also be connected to

the hydraulic system, e.g.—bow-thrusters, winches, fans, deck cranes and various types of pumps for slop tank, ballast, tank cleaning, fuel oil and emergency unloading.

INTERCON

Circle 76 on Reader Service Card

Intercontinental Engineering-Manufacturing Corporation of Kansas City offers diversified engineering and manufacturing for the marine, construction, and military markets. For over 30 years, Intercon has been a leading supplier of heavy deck machinery and material-handling equipment for both commercial and military customers.

In June of this year, Intercon received a contract from the Northern Division, Naval Facilities Engineering Command for the design and manufacture of one 40-ton portal crane and one 25-ton portal crane for use at Naval Weapon Stations in Yorktown, Va., and Charleston, S.C. These cranes are rail-mounted, diesel/hydraulic-powered, and will incorporate state-of-the-art control systems. Delivery is scheduled for the first quarter of 1991.

Production continues on ship-board cargo cranes for the Navy's T-ACS auxiliary crane ship program. Each twin crane model TG3637 permits single crane function with 30-ton capacity at 121 feet, or dual mode function providing 60-ton capacity at 121 feet. Crane shipsets for T-ACS 9 and 10 will be delivered to NORSHIPCO, Norfolk, Va., in the fourth quarter of this year. NORSHIPCO is handling the conversion of the crane ships for the Maritime Administration. Intercon has produced 16 sets of twin cranes for the Navy's auxiliary crane ships.

Intercon's participation in the Navy's Underway Replenishment Programs included the recent completion of a NAVSEA multiyear contract for Highline, Cargo, and Light Spanwire winches. These single and double drum units are standard Navy configuration, electric/hydraulic powered.

Recent orders for Intercon's proprietary winch systems include a contract from Foss Maritime for two shipsets of mooring winches to be installed on new self-unloading ore lighterage barges. The barges will provide seasonal service for the Red Dog Mine in Northwestern Alaska beginning in 1990; Intercon's model SD-150E was selected for mooring service. These units spool 1-1/2-inch diameter wire and are powered by 50-hp electric motors driving through triple reduction gear reducers.

Recent workboat winch installations include Intercon's SD-175 towing winch and two EVC-27 vertical capstans for the Panama Canal Commission's new 100-foot dredge tender. A similar SD-175 towing winch was installed aboard Mobil's new tug M/V Mobil 2. The SD-175 is sized for 2,000 feet of 1-3/4-inch diameter wire and features double band type, self-energizing service brakes. This unit is just one of 28

standard winch models for the offshore towing and anchor-handling market.

LIEBHERR-WERK

Circle 7 on Reader Service Card

Liebherr-Werk Nenzing specializes in the design and production of offshore lifting equipment and traditional deck cranes. The company

recently introduced B/SM and BW/SM type deck cranes, which feature extremely slim construction with capacities ranging from five to 120 metric tons.

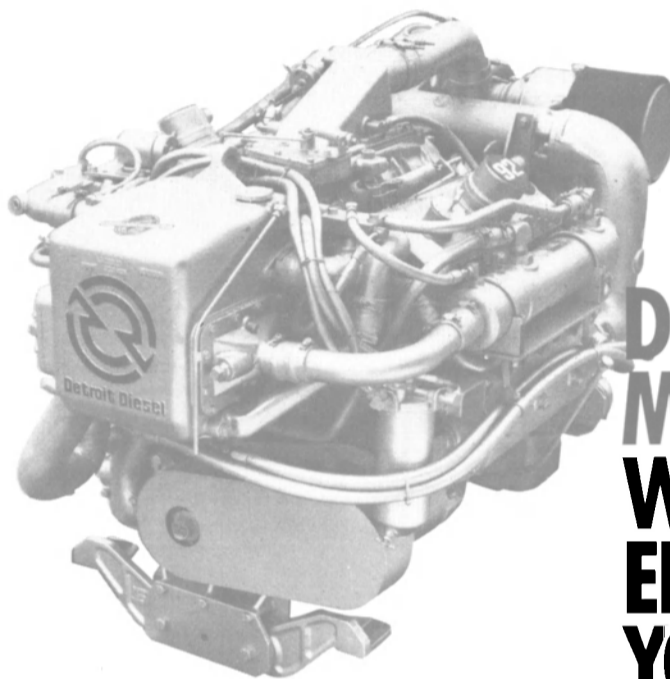
Liebherr-Werk recently added the RHM-type mobile harbor crane to its full range of mobile harbor cranes. This new compact mobile harbor crane is especially designed for operation in inland harbors. The increased maneuverability and flexibility of the RHM-type mobile har-

bor crane provides added advantages for river port operators.

Liebherr-Werk's LHM-type mobile harbor crane, which is used for container-, general cargo-, bulk material and unit load handling operations, is popular in many seaports.

For offshore applications, Liebherr-Werk Nenzing offers the field-proven BOS type offshore crane, which has been used mainly in the

(continued)



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Circle 275 on Reader Service Card

Deck Machinery Review

(continued)

harsh environment of the North Sea. Additionally, the company has a series of ram luffing offshore cranes, which feature low overall height and horizontal boom storage.

MANITEX

Circle 77 on Reader Service Card
Manitex, Inc., a subsidiary of the Manitowoc Company, Inc., designs, manufactures, and markets pedestal-mounted box boom and lattice boom cranes at a modern, two-plant facility located near McAllen, Texas.

Ideally suited for dockside, ma-

rine, or onshore applications, Manitex pedestal cranes are constructed of marine-quality components, with complete material traceability available upon request. In addition, each crane features a versatile modular design to permit fast servicing and easy interchangeability of components from model to model.

The present "family" of Manitex pedestal cranes includes three box-

boom models, three telescopic-boom models, and five lattice-boom models.

The three box boom models are the 15-ton-capacity MB-300; 25-ton-capacity MB-600; and 125-ton-capacity MB-7200.

The three telescopic-boom cranes are the 9-ton Model 900, the 11-ton Model 1100, and the 19-ton Model 1900. Ideal for a wide variety of applications ranging from dockwork to powerhouse maintenance, these telescopic cranes appeal to a broad range of markets.

Rounding out the Manitex line of pedestal cranes are five lattice-boom models, all available with full weather enclosures to permit operation in harsh environments. Current lattice boom models and their standard nominal capacities are the 25-ton-capacity ML-600; 41-ton-capacity ML-1200; 55-ton-capacity ML-2400; 75-ton-capacity ML-4800; and 200-ton-capacity ML-14400. Each model is also available in a "heavy-duty" version offering higher capacities.

Manitex SeaCranes exceed the stringent operating codes established by API, Lloyd's, DnV, NMD, and ABS. Other advantages and features include all modular designs, full 360-degree swing capability, auxiliary winch systems, single and double-taper box booms, on-board and remote control systems, anti-two block systems, and variable height gantry arrangements. In addition, Manitex's worldwide distributor network provides complete parts and service availability 24 hours a day, seven days a week.

MARKEY MACHINERY

Circle 78 on Reader Service Card

Founded in 1907, the company's goal was to provide the most rugged and dependable machinery for the toughest of marine conditions. All machinery was custom designed to meet the specific needs of each vessel's duties. Today, over 82 years later, Markey still stands by its commitment to quality machinery. With three Seattle manufacturing facilities, Markey is able to incorporate all stages of a project, from design to fabrication and machining to final assembly.

Markey's custom product line includes towing and anchor-handling winches, anchor windlasses, capstan windlasses, capstans, standard or automatic mooring winches, coring winches, oceanographic winches, hose hoists, ramp hoists, and chain and wire stoppers. Quality manufacturing processes include stress-relieving of all steel fabrications, line boring all bearing fits and flush machined sills for ease of installation. Complete records on all equipment are maintained and rush treatment is provided for all replacement part requirements.

Markey is currently supplying to the oceanographic community a new generation of science winches utilizing proven SCR powered DC drives or piston-type hydraulic drives. Systems are in development which will add Semi-Smart capabilities to the SCR DC drives. Such

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Circle 304 on Reader Service Card

added capabilities will include near-surface alarms, at-depth alarms, high- and low-tension alarms, automatic near-surface slowdown, scope-stop, and tension-limit control. As proven technology emerges, full motion-compensating "Smart" capabilities will become available using electrohydraulics with micro-processor control.

The company is currently building a large "waterfall" type trawl and coring winch for the AGOR-23 refit. This winch will have two drums suitable for up to 0.680 electro-mechanical cable, and will be powered by the proven SCR-powered DC drive system.

As with every customer, Markey can put its heavy-duty design philosophy, over eight decades of expertise and extensive manufacturing capabilities to work on a specific application.

MCELROY MACHINE

Circle 79 on Reader Service Card

McElroy Machine and Manufacturing Co., Inc., specializes in the manufacturing of custom winches and other marine deck machinery. Its engineering and design capabilities are limited only by the customer's specific requirements. McElroy's manufacturing capabilities are evident in the diverse line of machinery now being built. The product range covers single drum mechanical winches weighing only 500 pounds up to double drum diesel-driven winches weighing over 50,000 pounds. Hydraulic drive packages are also available on winches falling within this product range.

Harold Catchot, president of McElroy Machine and Manufacturing Co., Inc. of Gulfport, Miss., has announced the acquisition of the Stroudsburg Hoist product line from Douglass Enterprises of Stroudsburg, Pa. Stroudsburg Hoist has been a major manufacturer and supplier of hoists for many years in the fishing industry.

The Stroudsburg line is being manufactured at McElroy's Gulfport facility and will be marketed as McElroy "S" Series fishing winches. McElroy will maintain all of the existing Stroudsburg distributors accounts and supply replacement parts for new and existing equipment.

Current work includes the final bow anchor windlasses and stern anchor winches for 35 U.S. Army LCUs (Landing Craft, Utility) being built by Moss Point Marine, a division of Trinity Marine.

Also in process is a 540 HAW Anchor Winch and MC 16 Capstan for Gulf Coast Fabrication of Pass Christian, Miss., and a MSW 137, 1-3/8-inch single anchor windless for Homeport Marine of Moss Point, Miss.

Recently completed contracts include a TW-37-100D Triple Drum Waterfall winch built for the Corps of Engineers, New Orleans, La., and 21 MCR-12-1.5E capstans to be installed on U.S. Coast Guard Island Class vessels being built by Bollinger Shipyard of Lockport, La.

Industries served by McElroy's machines include: offshore supply boats, utility boats, tugboats, crew-

boats and line-handling boats; commercial fishing vessels, freezer ships and research vessels; military vessels for U.S. Coast Guard, U.S. Navy, U.S. Army Corps of Engineers and foreign navies. Specialized vessels, including ferries, seismic research, fire boats and dredges also constitute a large part of the firm's markets.

MORGAN CRANE

Circle 80 on Reader Service Card

Morgan Crane Company, the exclusive U.S. distributor for Hiab Seacranes offers Hiab Seacranes with capacities from 1,000 pounds to 30,000 pounds. Available in reaches up to 75 feet, the Hiab

knuckleboom seacranes are compact, versatile, and designed to withstand the most demanding applications and environments. The Hiab Seacranes are well suited for use on research, fishing, military, bulk cargo, and oil spill vessels. Due to the light weight of Hiab Sea-

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Deck Machinery Review

(continued)

cranes they are especially popular on weight sensitive vessels. With over 200 in operation on board U.S. vessels, Hiab Seacranes have established a reputation for dependability and cost effectiveness.

Morgan Crane Company provides complete packages including cranes,

winches, powerpacks, and special retrieval units for lifting delicate equipment out of the water. Morgan Crane also represents the Alaska Marine Crane line.

O&K

Circle 2 on Reader Service Card
O&K of Lubeck, West Germany, has long manufactured deck cargo, floating, and terminal cranes. Dur-

ing 1989, O&K completed incorporation of the product line of PWH (PHB Weserhuetten), another West German crane manufacturer acquired by O&K in late 1988. The PWH technology for offshore cranes, especially gives O&K an impressively broad line of cargo-handling equipment, including standard, slim, and low-profile level luffing slewing deck cranes, double-jointed and gantry deck cranes, a variety of fixed and gantry terminal

cranes, through floating and, now, offshore cranes.

This complete product line, along with their reputation for quality and innovation, is no doubt the reason that O&K has maintained a full orderbook through 1989 and well into 1990.

Among the current orders for O&K cargo-handling equipment are an order from Danyard A/S in Frederikshavn (Denmark) for 15 deck cranes with capacities of up to 36 tons for three reefer vessels, with an option agreement for an additional 15 H-type low compact cranes. Also MAN GHH of Oberhausen, West Germany, will receive three 25-ton-capacity single deck cranes for a Soviet customer, with an option for three additional cranes.

The Bremer Vulkan yard gave O&K a repeat order for four Gemini twin deck cranes for two new reefer vessels. Over 150 units of this FGH series are in operation around the world. They have a working capacity of 18 mt each in single operation, or 35.4 mt when in twin operation, with a 25.4-meter working radius.

For shipowner Egon Oldendorff (Liberia Inc.), O&K will supply three single deck cranes to the Husum Shipyard in West Germany. The multipurpose vessel is intended for combined passenger and freight transport. One of the single deck cranes will have a 32-mt capacity at a 17-meter outreach, one with 16 mt at 17 meters, while the third will be 5 mt at 15 meters.

For the last 25 years, O&K of Lubeck has been a world leader in deck crane innovation. They successively introduced the first and second generations of twin deck cranes, the Gemini tandem operation deck cranes, the first double-jointed cranes, the first slim (narrow tower) and the first high-articulated jib deck cranes. O&K has also led the industry in incorporation of electronics, with remote and programmable operation. These advances in deck crane design have made O&K the recognized efficiency leader in modern on-board cargo handling.

In 1989, O&K has gone ashore, literally, with the introduction of the Stack Lifter. By mounting advanced double-jointed cranes shore-side, they have introduced an innovative modular concept to rationalize and improve intermediate container handling. High capacity gantry cranes in modern ports achieve high container handling rates, requiring more economical and efficient intermediate storage. Intermediate storage allows unloading batches of containers as they arrive, passing them on more or less continuously, or storing containers, arriving continuously, to be later taken out in batches.

The Stack Lifter systemizes the intermediate storage process. In modules, it allows fully or partially automated handling of the intermediate containers. The advantage of the system is the simple and safe input of the storage space data through a fixed point, helping position the containers more accurately, which in turn results in higher overall handling rates. The system is especially advantageous where

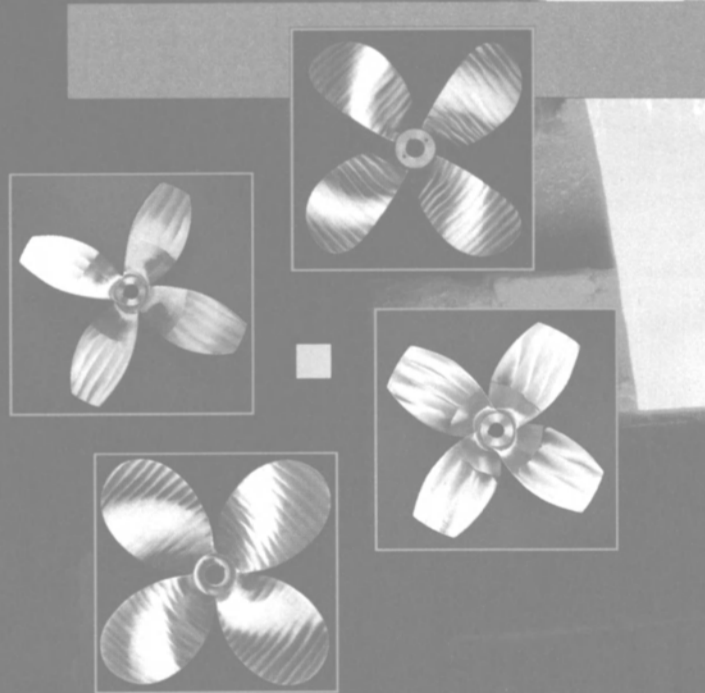
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Bird-Johnson Company incorporates the former Coolidge Propellers and Doran-Alabama Propellers and is the exclusive U.S. sales and service representative for Blohm + Voss marine mechanical engineering products.



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space is limited or at a premium, or where maximum through-put rates are desired.

POSI LOCK

Circle 3 on Reader Service Card

Posi Lock Puller, Inc.'s new Hydraulic Systems Division, Cooperstown, N.D., has introduced a line of hydraulic pullers designed to meet growing industrial needs.

Posi Lock's new hydraulic pullers range from 15- to 50-ton two- and three-jaw models. Complementing these pullers are a full line of hydraulic accessories, all rated 10,000 psi. Interchangeable ram points are included in every hydraulic puller kit. Convenient storage transports are available to store or move hydraulic pullers and their accessories.

Posi Lock's hydraulic line has the same quality, ease of use and safety features customers have come to expect from Posi Lock.

SMITH BERGER

Circle 81 on Reader Service Card

Equipment from Smith Berger Marine, Inc., based in Seattle, Wash., has meant quality and reliability to the marine industry for much of this century.

Since WWII, Smith Berger has supplied the U.S. Navy with naval class fairleads. Built to exacting standards, these fairleads have been adopted by the offshore industry because of their high degree of reliability and ease of service where rugged offshore duty is expected.

Recently, the innovative Marine Class fairleads were introduced for more general marine applications. Using Computer Aided Design methods, new sealing arrangements, high strength castings and special fabricated components, the Mariner provides an economical answer to the needs of today's civilian marine industry while maintaining traditional Smith Berger quality.

Other fairleads by Smith Berger include the patented bending shoe fairlead used on the first deep-water floating production platform in the Gulf of Mexico, underwater sheave type fairleads custom-designed for chain or wire rope mooring, balanced head deck or flange mounted fairleads for large diameter mooring ropes, and roller fairleads for most wire or synthetic rope sizes.

Smith Berger designs include deck hardware for all types of marine vessels, anchoring systems for drilling rigs and barges in offshore service, towing hardware, and specialized mooring equipment and fairlead systems with broad application throughout the marine industry.

Smith Berger engineers are involved in designing highly customized systems to meet the needs of marine customers around the world and are available for consultation wherever standard or special Smith Berger products are required. ■

Service Marine Building Third Excursion Boat For Cruise International

Service Marine Industries, Inc., Morgan City, La., as was previously reported, is building its third dinner/excursion vessel within a year for Cruise International of Norfolk, Va.

The as-yet-unnamed vessel will be the near sister ship of the Spirit of Norfolk launched in April of this year. T.R. Hensley, president of Service Marine Industries said that the new vessel will have a two-foot deeper hull than the Spirit of Norfolk to handle more boisterous seas, and which also gives the vessel an even more "yachty look" than her predecessor.

The 175-foot-long, 36-foot-wide

vessel will have a certificate for 600 passengers, and will have the same elegant interiors as the Spirit of Norfolk. She will be used in dinner and excursion service, not in overnight cruise service as was previously reported.

For free literature detailing the building capabilities of Service Marine Industries,

Circle 70 on Reader Service Card

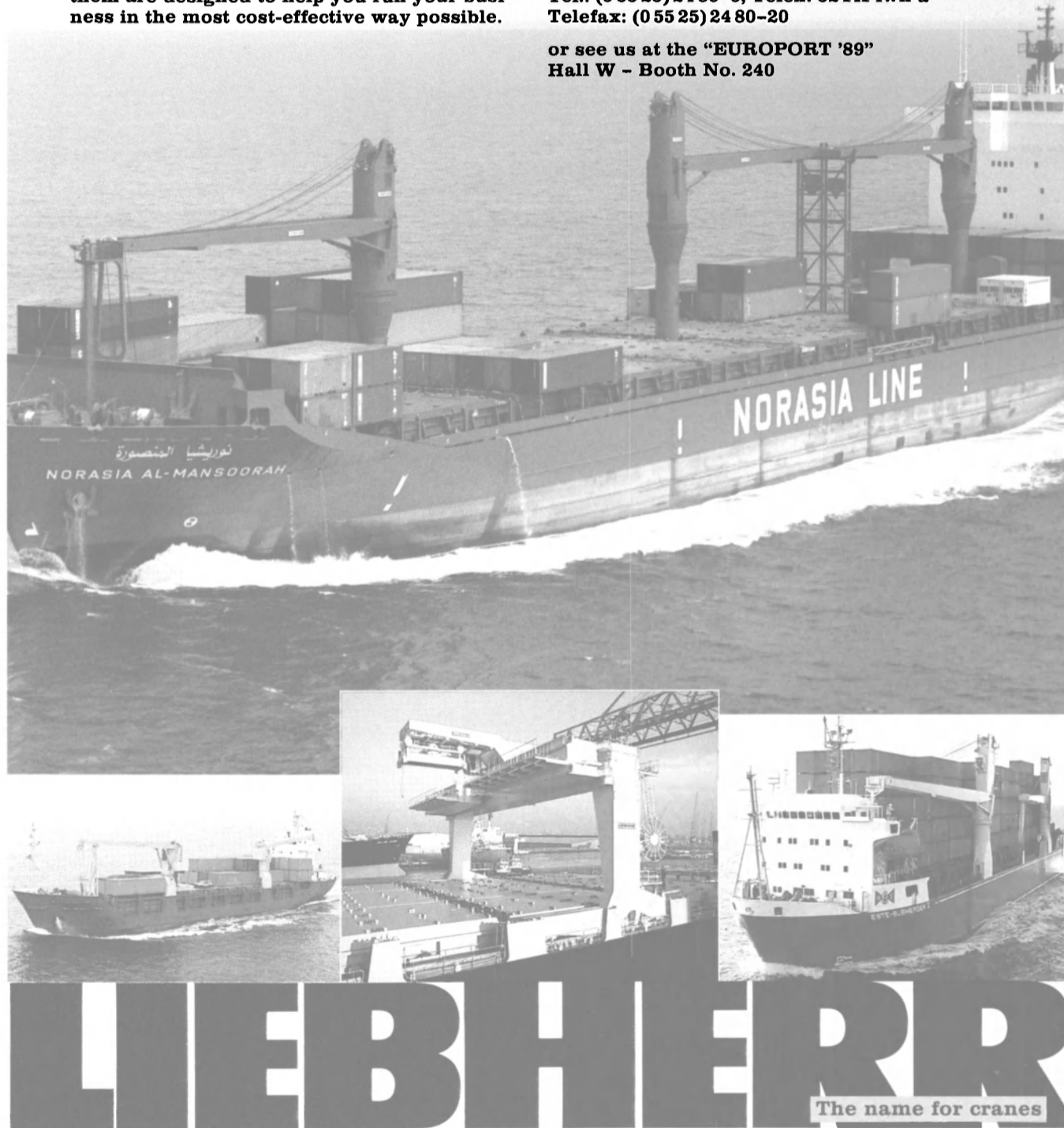
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Wilden Introduces Pumps Designed For Explosive, Hazardous Environments

Effective immediately, Wilden Pump & Engineering Co., Colton, Calif., will offer electrically conductive, graphite-filled M1 polypropylene models. These models have been introduced specifically for ex-

plosive and hazardous environments, where nonconductive plastics may be unacceptable due to static electricity discharge.

These graphite-filled models need to be earthed (grounded) at one connection, whereas virgin polypropylene requires grounding at all clamp bands or connection points. Surface resistance is less than 4×10 Ohm, thus providing adequate dispersal of static electricity discharge

when pumping nonconductive liquids.

These pumps offer the same advantages as all Wilden air-operated, double-diaphragm pumps: no motors, no seals, no packing, run dry capability, variable speed, variable pressure, explosion resistant, and self priming.

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Circle 249 on Reader Service Card

Capt. Frank J. Hughes

Capt. **Frank J. Hughes**, who retired in 1980 as president of Curtis Bay Towing, a Moran subsidiary company that is now Moran Towing of Maryland, died on August 28, 1989.

Born in Boston in 1915, Captain **Hughes** began his maritime career upon his graduation from Massachusetts Nautical School in 1935.

After serving in World War II, in which he received the Bronze Star for his service in France during the Normandy invasion, Captain **Hughes** became manager of salvage and deep-sea towing for the Moran Towing Company. He was appointed executive vice president of the Moran subsidiary, Curtis Bay Towing of Baltimore, in 1958. He became director of Moran Towing Corporation in 1961 and president of Curtis Bay Towing in 1966.

Captain **Hughes** is survived by his wife **Mary**, two sons, **Thomas** and **Daniel**, two grandchildren and his sister, **Kathleen Sandison**.

LTC International Offers 'Dust-Free' Vacuum Blasting Units

LTC International, Inc., Sterling, Va., offers high production vacuum blasting machines to maintain a virtual dust-free environment with production rates comparable to open blasting. Hose lengths of up to 165 feet and nozzle sizes of No. 4 through No. 8 are available. The machines have a unique double chamber pressure vessel system which, when using recyclable abrasives, permit uninterrupted blasting operations. The equipment tested successfully for the removal and containment of lead-based paints at an independent University Civil Engineering Laboratory.

For free literature fully detailing the "dust-free" vacuum blasting machines from LTC International,

Circle 27 on Reader Service Card

DARPA And MMA Sponsor Seminar On Submarine Equipment

The Marine Machinery Association (MMA) has announced that the Defense Advanced Research Project Agency (DARPA) and the MMA will jointly sponsor a Research and Development Seminar on November 29, 1989, at the Key Bridge Marriott Hotel in Arlington, Va. This seminar is intended to assist naval machinery manufacturing companies in getting involved with the R&D of new equipment for submarines.

Speakers will be present from DARPA's Naval Technology Program, as well as from NAVSEA, and the Naval Research Center. A highlight of the program will be an R&D Forum to include representatives from industry and the naval research community.

For additional information, contact the Marine Machinery Association, (202) 293-7169.

Maritime Reporter/Engineering News

ELECTRONICS UPDATE

Furuno Introduces New Radar Lines—Opens East Coast Distribution Center

Furuno is expanding their line of radars for yachts and smaller fishing and commercial vessels with the introduction of the new Models 1930 and 1940. These compact, full-featured radars offer a steady, daylight viewing picture on a 10-inch raster-scan CRT with a high resolution 640 by 480 pixel display. A full four levels of quantization, plus custom integrated microwave receiver and three pulse lengths and pulse repetition rates assure a sharp, high definition picture on every range.

The Model 1930 is a 3-kw, 36-mile radar with Furuno's well-proven 3.5-foot open array antenna, while the Model 1940 is a 4-kw unit with 48-mile range and 4-foot aerodynamic array. The display unit for both radars is compact and will fit perfectly in any pilothouse decor.

Both radars operate from a universal 10.2 to 40 VDC source and require only 53 watts input power.



S-band Series Radar.

acre property to give dealers even better access to finished goods, parts and technical assistance.

According to **Bill Dupre**, president of Furuno, this increased capacity and new, dedicated staff will greatly improve Furuno's efficiency and ability to support sales efforts in the Eastern U.S.

For free literature containing full information on Furuno's radars,

Circle 21 on Reader Service Card



Model 1900 Series radars.

Furuno's new FR-8000D Series radars are designed to provide top performance at a reasonable price for most workboats, fishing vessels and larger yachts. Now, to augment the existing FR-8000D X-band radars, there are two new S-band units: the FR-8100DS, at 10 kw, and the FR-8300DS at 30 kw, both ideal for use in heavy rain and sea clutter situations. These radars feature an extremely high resolution (481 x 640 pixels) 12-inch monochrome CRT display with no-compromise 8-level quantization. The result is a bright, non-fading radar picture that is sharp and crisp.

Furuno's new warehouse and distribution center in Denton, Md., is now open to serve the company's expanding customer base in the Eastern half of the U.S. This facility, more than double the size of the former plant in New Jersey, provides 30,000 square feet of office and warehouse space on an 11-1/2-



The 70,000-grt Fantasy, the first of three cruise ships being constructed for Carnival Cruise Lines by Finnish shipbuilder Wartsila Marine.

Carnival's Newest Superliner, Luxurious 70,000-GRT Fantasy, Nears Completion At Wartsila Yard

The first of three giant 70,000-grt Superliners, the Fantasy, built by the Helsinki, Finland, shipyard of Wartsila Marine Industries, for Carnival Cruise Lines, Miami, Fla., has completed her first sea trials and is expected to be delivered next month.

The 855-foot, 2,600-passenger vessel is one of the most expensive ships ever built. The Fantasy and her sister ships, the Ecstasy and the Sensation, are being constructed under a \$600-million contract. The Ecstasy is expected to join the CCL fleet in 1990 and the Sensation in 1991. The three passenger ships are the largest ever constructed in Finland.

The liner, which was christened by **Mrs. Tellervo Koivisto**, wife of the President of Finland, has completed her four-day test, which

was conducted July 4-7 in the Baltic Sea by the Wartsila shipyard. Capt. **Vittorio Fabietti**, Carnival's chief coordinator of new ship construction, who was on board the vessel along with representatives of Carnival's consultants, Technical Marine Planning of London, said he was extremely satisfied with the ship's performance.

"All functions of the ship relating to the engines and other mechanical operation were tested and met or exceeded our expectations," said Captain **Fabietti**. "Most impressive was the performance of the ship's six-engine diesel-electric power plant. At all speeds tested, and even in maneuvering, the ship operates virtually vibration-free and is extremely stable," he said.

(continued)

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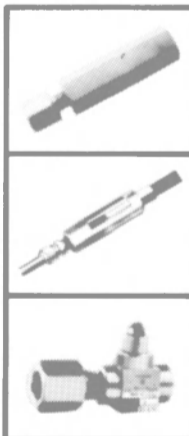
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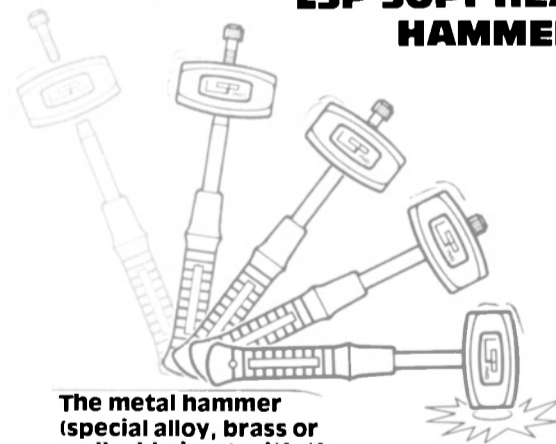


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Circle 222 on Reader Service Card

Carnival

(continued)

In speed trials, the Fantasy achieved its contractual speed of 22.3 knots. Even though the maneuvers were carried out in the Baltic Sea, Captain **Fabietti** said that the extremely favorable weather conditions encountered more closely approximated the Caribbean during the winter.

"These have been most useful preliminary trials. We are all favorably impressed and know even now that we have something very special in this great ship," said Captain **Fabietti**.

The 14-passenger deck Fantasy and her two sister cruise vessels under construction at Wartsila Marine will each feature 2 x 14 MW Cyclo propulsion drives, 6.6 kv switchboards, four 10.3 MVA main and two 6.8 MVA auxiliary genera-

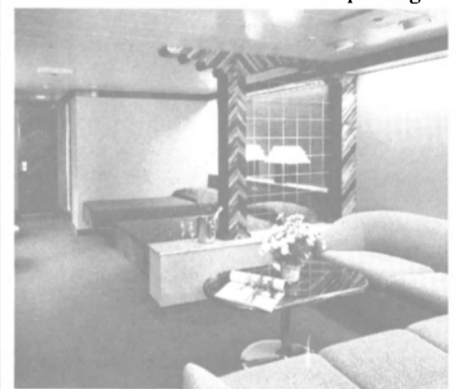
tors, plus six thruster motors and the main transformers, all engineered and supplied by ABB Marine of Helsinki. Six Wartsila-Sulzer diesel engines with a total of more than 57,000 bhp are the prime movers of the diesel-electric propulsion system. The Fantasy is also fitted with two highly skewed KaMeWa type 144 x F3/4W controllable-pitch propellers. Six Brunvoll 1,500-kw thrusters provide the ship with added maneuverability.

Cabins aboard the Fantasy and her sisters will be among the largest afloat among the cruise industry's new generation of mega-ton ships, according to CCL.

Carnival's three new 70,000-grt sister ships will feature a new cabin category. Called "demi-suites," these will be substantially larger than standard cabins and feature private balconies. A standard inside cabin will measure 183 square feet and standard outside cabin 190 square feet, while the 26 demi-suites aboard each vessel will be 226 square feet, all with 36-square-foot private balconies. The 28 suites aboard each ship will be 360 square feet with 71-square-foot private balconies.

Joe Farcus, interior architect for all of Carnival's Superliners, points out that the cruise industry has been fighting concerns over confinement aboard ships for years. "We have to do everything possible to eliminate that objection from the passenger's subconscious, and small, cramped cabins only reinforce it. This totally contradicts the logic behind building larger ships," said **Mr. Farcus**. "One of the first things a passenger examines when he comes aboard is his cabin," he explained. "The cabin is his home-away-from home—his haven while at sea—it's absolutely critical that it be as large and comfortable as possible."

According to **Mr. Farcus**, the interior design of the new ships' cabins will be similar to Carnival's current Superliners, *Holiday*, *Jubilee*, and *Celebration*, yet new color schemes and refined details will make them more sophisticated. Aboard the Fantasy, a light, pinkish stain in the oak woodwork in the cabins will create an elegant feeling. Bulkheads of light gray, will complement ceilings of pale sunrise orange. Gray carpeting will be highlighted by red, purple, green, and blue pinstripes, and black bedspreads will be accented by small dots in the colors of the carpeting.



Interior shot of one of the luxurious cabins aboard the Fantasy.

The Fantasy will also feature the "first true spa" at sea, unprecedented in size, number of facilities, selection of programs and state-of-the-art equipment.

At nearly 12,000 square feet, the Nautica Spa will provide passengers tremendous space in which to exercise or simply seek some pampering and relaxation.

"There isn't a spa afloat that compares to this one," said Carnival Cruise Line president **Mickey Arison**.

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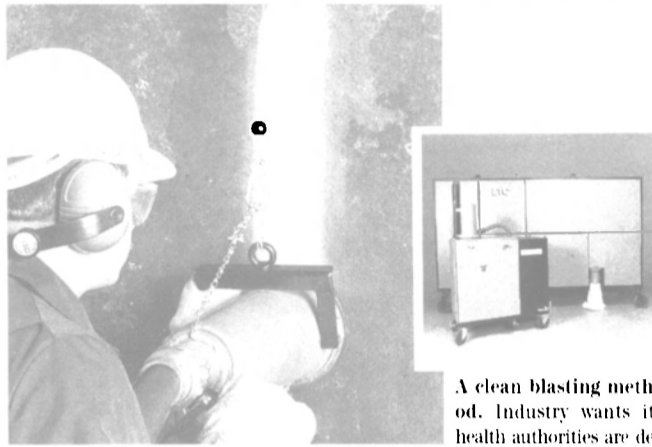
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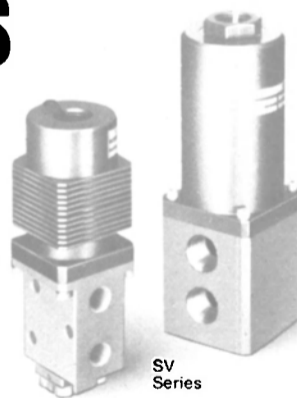
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LTC International is a product development company which, after a careful study of end user needs, has introduced a full range of highly engineered machines to meet the challenge. At the top end are the newly released LTC 2000 with a 1/2" nozzle and the well tried LTC 1060 both very compact and utilizing a unique double chamber pressure vessel system. The containment of the LTC 1060 machine has been tested by the North Carolina State University.

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**FANTASY
Ship's Data**

Builder	Wartsila Marine
Yard No.	479
Flag	Panama
Keel laying	January 18, 1988
Launch	December 7, 1988
Delivery	November 1989
First Sea Trials	July 4-7, 1989
Owner's Trials	September 1989
Inaugural Voyage	January 12, 1990

Particulars

Length, Overall	855 feet
Breadth, Overall	118 feet 1 inch
Mean Draft	25 feet 5 inches
Maximum Draft	25 feet 9 inches
Internal Gross Tonnage	70,367
Internal Net Tonnage	43,450

**FANTASY
Equipment List**

Main engines (6)	Sulzer-Wartsila
Alternators (6)	ABB Drives/Stromberg
Electric propulsion motors (2)	ABB Drives/Stromberg
Engine controls	KaMeWa/Stromberg/Valmet
Propellers (2)	KaMeWa
Thrusters (6)	Brunvoll
Steering gear	Frydenbo
Stabilizers	Brown Bros.
Switchboards	Stromberg/Wartsila Marine
Oil-fired boilers	Sunrod
Distilling plant	Serck-Como
A/C plant	Svenska Flakt
Compressors	Stal
Sprinkler & alarm system	Wormald
Deck machinery	Pusnes
Anchors	Marine Equipment
Side doors	Wartsila Marine
Watertight doors	Wartsila Marine
Windows	Samen (Bilbao)
Sewage plant	Hamworthy
Purifiers	Alfa Laval
Bearings	Lohmann & Stolerfoht
Elevators	Dan Elevator/Kone
Lifeboats	Waterman
Life rafts	Viking
ARPA	Krupp Atlas Elektronik
Rascar	Sperry Marine
Loran C	Furuno
Omega navigator	JRC
Weather fax	Furuno
Speed log	Sperry Marine
SatNav system	Magnavox
Radio direction finder	JRC
VHF/RFD	Furuno
Gyrocompass	Sperry Marine
Adaptive autopilot	EMRI
Magnetic compass	JC Krohn/Marine Data
Echo sounder	Krupp Atlas Elektronik
SatCom	JRC
Telefax	JRC
Communication equipment	Jeumont-Schneider
Steering controls & rudder indicator	EMRI
TV & PA systems	Philips
Sat/TV-at-sea	Sea-Tel
Radio station	Marconi

The spa's glass-enclosed, 3,000-square-foot gym area will offer a spectacular ocean vista.

One of the spectacular design features of the Fantasy and her sisters is a six-deck atrium, the Grand Spectrum, also conceived by Miami architect Mr. Farcus. On the Fantasy, Mr. Farcus has created an atrium which rises six full decks, crowned by a skylight.

"No ship has ever had a space of such extraordinary proportion opening to the sky, giving passengers a breathtaking view as well as access to the major facilities aboard," said Mr. Farcus.

Other spectacular passenger amenities include the piano bar Cleopatra's and 1,300-person-capacity

Universe Lounge. Cleopatra's has an Egyptian motif—sarcophagi, life-size sculptures, hieroglyphics, and other artifacts. It will have a circular bar with a piano on a turntable in the center.

Located on the Atlantic Deck, the Universe Lounge will serve as both a performance showcase, with Vegas-type revues on its 69-foot-wide stage, and as a ballroom and show-room.

Expected to be delivered at the end of November, the Fantasy will make her inaugural voyage January 12, 1990. She will depart from Miami for a four-day cruise to Freeport and Nassau.

For free literature detailing the shipbuilding services of Wartsila Marine,

Circle 16 on Reader Service Card

**Ingalls Awarded
\$12-Million Contract
For Battleship PSA**

Ingalls Shipbuilding, Inc., Pascagoula, Miss., was recently awarded a \$12,014,650 cost-plus-fixed-fee U.S. Navy contract for the Post Shutdown Availability (PSA) of the battleship USS Wisconsin (BB-64). The work is expected to be completed by November 15, 1989.

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Circle 261 on Reader Service Card

Halter Delivers Fourth Of Six Navy Ocean Surveillance Ships In Contract Valued At \$85 Million

Halter Marine, Inc., Moss Point, Miss., has delivered the U.S. Navy ship Capable, the fourth of six identical ocean surveillance ships under construction at Halter for the Navy with a total contract value of approximately \$85 million.

The Capable is the 16th of 18 planned monohull T-AGOS class ships to join the U.S. Navy's ocean surveillance program.

Operated by the Military Sealift Command (MSC) and staffed by civilian technicians, the Capable tows electronic devices to monitor the movement of submarines

The all-steel Capable is 224 feet long, with a 43-foot beam, and 15-foot 1-inch draft. Main propulsion and other ship's service is diesel-electric, provided by four Caterpillar/Kato 600-kw generators driving two General Electric motors. Power

is transmitted through two shafts and full load displacement is approximately 2,300 long tons. Maximum speed is approximately 11 knots and normal operating speed is about three knots.

The vessel carries nine officers, 11 crew, and 10 technicians. In addition to the usual living spaces, the Capable also has a recreation room, exercise room, ship's store, and a self-service laundry.

Halter Marine, Inc. is part of the Trinity Marine Group which is owned by Trinity Industries, Inc., Dallas, Texas.

In addition to the Halter-Moss Point facility, the Trinity Marine Group includes the Halter Marine Inc. shipyard in Lockport, La., Moss Point Marine, Inc. in Escatawpa, Miss., Equitable Shipyards, Inc. facilities in New Orleans and Madi-

sonville, La., Gretna Machine and Iron Works in Harvey, La., Aluminum Boats, Inc. in Crown Point, La., Thunderbolt Shipbuilding and Repair, Inc. in Thunderbolt, Ga., HBC Barge, Inc. in Brownsville, Pa.,

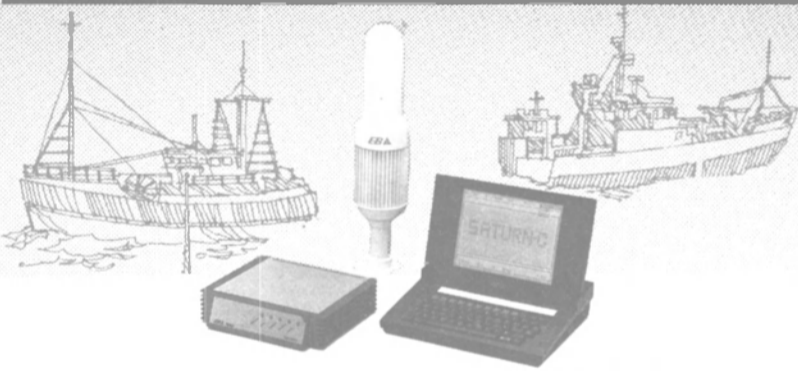
and Trinity-Beaumont in Beaumont, Texas.

For free literature containing full information on the facilities and capabilities of Halter Marine, Circle 19 on Reader Service Card



The 224-foot Capable is powered by four Caterpillar/Kato 600-kw generators driving two General Electric motors.

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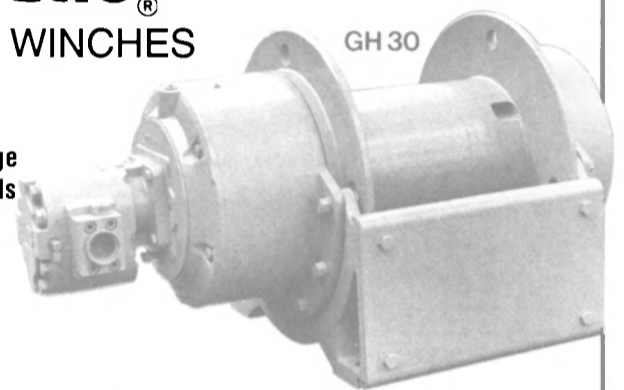
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Circle 205 on Reader Service Card

Maritime Reporter/Engineering News

\$3.4 Million Awarded General Instrument For Spares/Support Equipment

General Instrument Corporation's Defense Systems Group recently announced that their Government Systems Division received a \$3.4-million award from a foreign nation for spares and support equipment for their ALR-606(V)2 ESM System.

The fully automatic ALR-606(V)2 ESM System performs over-the-horizon electronic surveillance and targeting while simultaneously providing radar warning for self-protection. It is capable of operating in a variety of maritime patrol scenarios, handling high signal densities encompassing various complex signal types and modes, and detecting low probability of intercept emitters.

General Instrument's Defense Systems Group is comprised of four divisions specializing in the development, production, and support of various defense electronic systems for the U.S. and international air, ground and naval forces.

The Government Systems Division and Dalmo Victor Division are leading manufacturers of radar warning systems and surveillance and targeting systems, complementing each other. The Undersea Systems Division is the foremost supplier of multi-beam bathymetric sonar mapping products to the free world, and Northern Scientific Laboratory is an important supplier of frequency measuring receivers utilized in the electronic defense industry.

For more information and free literature,

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New Simple, Easy-To-Use Hydrostatics Program From Concurrent Systems

Concurrent Systems, Arlington, Va., is releasing a new hydrostatics program for personal computers. The Naval Architectural Problem Oriented Language (NAPOL) will perform the following calculations: hydrostatic curves of form; trim lines; longitudinal strength; floodable length; limiting drafts; damaged stability; damaged statical stability; intact stability; cross curves; intact stability in waves; and subdivision index.

According to Concurrent Systems, the program is simple to use. An input file is made up of readable commands which can be understood by a naval architect who is not familiar with NAPOL. The hull is defined by station offsets and appendages. The appendages themselves may be built from offsets, providing multiple hull capability. Compartments are bounded by the hull, bulkheads, decks or compartment offsets. Input and output can be in the units selected (American, Metric, or Imperial).

In addition to the textual output for each calculation, the following graphical outputs can be generated:

body plan; isometric view; hydrostatic curves of form; longitudinal strength; and floodable length.

One unique calculation option available in this commercial package estimates the IMO subdivision index as laid out in the Department of Transportation document 46 CFR Ch.1 "Dry Cargo Ship Subdivision and Damage Stability; Advance Notice of Proposed Rulemaking." This option calculates the subdivision index for compartment groups

of up to four subdivisions and provides an accumulative subdivision contribution for a given draft.

To provide compatibility with the U.S. Navy program SHCP, there is an input translator and where possible the output is also formatted to look like SHCP.

The program runs on a PC, XT, AT, 386 or compatible and when available can take advantage of a math co-processor. Graphics can be produced in CGA high or low resolu-

tion or in EGA or Hercules modes. For hardcopy graphics a range of plotters can be driven including those using HPGL.

NAPOL is available in two versions, with and without co-processor support. Priced at \$225, this provides a personal computer program that outperforms many more expensive mainframe programs.

For additional information on NAPOL from Concurrent Systems,
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Seatrade's Cruise Shipping '90 Conference & Exhibition Set For March 20-24 In Miami

The Seatrade Organization is expecting another record attendance for the Seatrade Cruise Shipping '90 Conference and Exhibition, which will be held at the Fontainebleau Hilton Hotel in Miami Beach, Fla., from March 20 to 24, 1990.

The exhibition area, which has virtually doubled in size every year since the event was first held six years ago, is already sold out for 1990, and extra space had to be found to meet the heavy demand.

Seatrade Cruise Shipping '89,

held in March of this year, was attended by more than 1,400 people from the cruise industry worldwide, including some 600 registered conference delegates, making it one of the world's leading cruise industry gatherings.

An expanded program for 1990 is now being assembled with some of the cruise industry's leading personalities taking part as speakers, including: **Trygve Hegnar**, chairman and chief executive officer, Kloster Cruise Limited; **Richard**

D. Fain, chairman and chief executive officer, Royal Admiral Inc.; **A. Kirk Lanterman**, president, Holland America Line-Westours Inc., and chairman, Cruise Lines International Association; and **Robert H. Dickinson**, senior vice president, sales and marketing, Carnival Cruise Lines.

One session of the conference will be devoted to the potential for expanding cruise sales into new market areas. For example, **Fumio Tamamura**, chairman of the board, Fuji Tours International Limited, and vice chairman, Japan Association of Travel Agencies, will discuss the vacation market in Japan and the outlook for selling cruises in what is considered one of the major potential growth areas for

the industry.

The emphasis on the technical and operations side of the industry will be expanded, with a special seminar emphasizing cost control, efficiency and safety in cruise vessel operations.

Another new feature will be a seminar session devoted to the issue of maximizing on-board revenues, looking at the full range of on-board facilities, from casino gambling to improved communications systems for passengers.

The program for Seatrade Cruise Shipping '90 Conference and Exhibition is being further expanded this year, with a much stronger program of social events and receptions. The opportunities for ship inspections are being increased, so

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Participants at the Seatrade Cruise Shipping '90 Conference and Exhibition are drawn from the following categories at very senior levels: cruise line owners and executives; travel agents and tour operators; resort hotel and airline executives; port and destination executives; bankers and insurers; builders and equipment suppliers; suppliers of leisure and sporting facilities; investors and potential entrants to the cruise industry, etc.

Seatrade Cruise Shipping '90 of-

fers anyone who is involved in the cruise business a chance to make new business contacts, discuss topics of mutual interest, hear top cruise personalities give their views on the industry, see the latest product innovations and inspect the latest cruise vessels in the Port of Miami.

For further information on attending or exhibiting at Cruise Shipping '90, contact: **Vivian Cebollero**, Seatrade North America Inc., Suite 1805, 40 Rector Street, New York, N.Y. 10006; telephone: (212) 393-1000; telefax: (212) 608-5874; or telex: 233629 SEA UR.

Blount Marine Launches First Dinner/Excursion Boat Of New Ultramodern Design

The first dinner/excursion boat of a new ultramodern design developed by **Luther H. Blount** was recently launched at the Warren, R.I., shipyard of Blount Marine for owners Bay Queen Cruises, Inc.

Mr. **Blount**, president of Blount Marine, is a true innovator in the shipbuilding industry. The new design, the patented Vistarama Class, was under development for over a year. His experience as a builder and an operator led him to believe that the concept of usable space is

an essential aspect to a successful dinner/excursion vessel design.

The new vessel, christened the Vista Jubilee, will be operated by Bay Queen Cruises on the Narragansett Bay with her sister ship, the renown M/V Bay Queen. The Vista Jubilee has an overall length of 114, beam of 39 feet 3 inches, and is USCG certified to carry passengers on the climate-controlled deck and one open observation deck. She has been configured for 400 passengers during the dining mode, and can



Mrs. **Patricia H. DiPrete**, the ship's sponsor, christening the Vista Jubilee at recent ceremonies at Blount Marine shipyard. Other principals at the ceremony included (L to R): Rev. **Skip Blancett**, who performed the invocation; **Theo Moniz**, U.S. Coast Guard; **Joanne Blount**; **Marcia L. Blount**, executive vice president, Blount Marine Corporation; **Robert H. Dahmer**, Rentacruise, Inc.; and **Luther H. Blount**, designer and president of Blount Marine Corporation.



The M/V Vista Jubilee at launching dock of builder Blount Marine Corporation's Warren, R.I., shipyard. She is the first of a new ultramodern class dinner boat introduced earlier this year by **Luther H. Blount**, president of Blount Marine Corporation.

hold up to 600 passengers in the excursion mode.

Panoramic views from all three decks enhance the Vista Jubilee's already daring, swept-back look. The unique bow/window configuration and the absence of stanchions, usually found on the first and second decks of boats of similar size, add to the feeling of spaciousness vital to the success of any dinner/excursion enterprise.

Mr. **Blount** selected powerful Luger engines for his new Vistarama Class vessel, purchased from Kelley Power, Fairhaven, Mass., because they are quiet-running and provide higher horsepower at lower rpms, thus reducing fuel consumption. The vessel features four Luger model 6125 engines, two model L-6125As for main propulsion and two M-6125AQs for auxiliary power, and Twin Disc MG-514C 4:1 reduction gears. The two main engines produce 400 hp each at 2,200 rpm, while the auxiliary engines in combination with Northern Lights generators produce 125 kw each at 1,200 rpm.

Mrs. **Patricia H. DiPrete**, wife of **Edward D. DiPrete**, Governor of the State of Rhode Island, served as the ship's sponsor, breaking the traditional bottle of champagne. The blessing was provided by Rev. **Skip Blancett**, pastor of the

United Methodist Church of Warren, R.I.

While exhibiting at the NAPVO (National Association of Passenger Vessel Owners) Annual National Convention in San Diego earlier this year, Blount Marine Corporation unveiled its futuristic dinner boat design.

Marcia L. Blount, executive vice president of Blount Marine, referred to the new Vistarama Class as an "operator's boat" in that it will answer all sensible alterations as suggested and experienced by actual shipboard restaurateurs and tour hosts. Available in lengths of 114 to 145 feet, the Vistarama boasts a 39-foot 3-inch beam, providing the luxury of space so vital to the nature of the restaurant and entertainment business.

The Vistarama Class is designed and certified to carry 450 to 600 passengers on lakes, bays, and sounds, and the final design for the 145-foot vessel may accommodate up to 800. The daring new design will be offered in two versions, one of which will feature Blount Marine Corporation's patented low ramp, enabling the vessel to dock at any facility as well as make shoreline landings.

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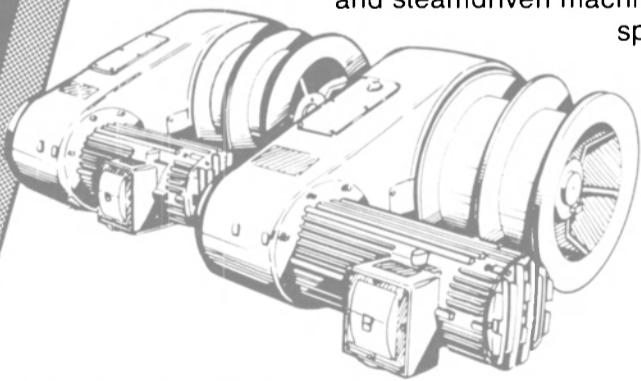
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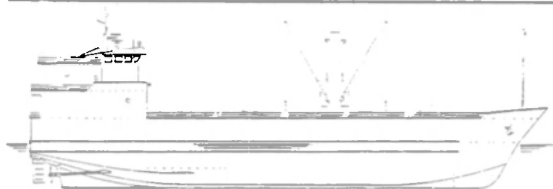
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Peterson Builders Realigns Management Staff

Peterson Builders, Inc. of Sturgeon Bay, Wis., has announced a realignment of management staff as part of the ongoing program to streamline shipyard operations.

Jack Soderlund, formerly vice president of Contract Administra-

tion, has been appointed vice president, Operations Support, and as such will have authority and responsibility for planning/scheduling, engineering, material management and quality assurance departments.

Mr. Soderlund has been with Peterson Builders since 1977 and is a retired U.S. Navy officer with 25 years of service.

Lloyd Shaffer has been appointed director of contract administration and will have the authority and responsibility within corporate

policies for planning, organizing, directing and controlling PBI shipbuilding contracts. Concurrently, he will be responsible for government liaison activities, marketing and post-delivery ship support and warranty operations. He also serves as the corporate sponsor for the "Integrated Business System" development efforts underway at PBI.

Mr. Shaffer joined Peterson Builders in February 1988 and is a retired Navy officer with a background in ship operations, naval

weapons and government contracting.

Richard Russell has been appointed to the position of vice president-manufacturing. In this position, Mr. Russell will have overall responsibility within the company for all production, construction, and manufacturing operations.

Mr. Russell has been with PBI since 1978 and is a retired U.S. Navy officer with 23 years of service.

Ashenbremer Appointed Account Manager For ZF Marine Division



Randolph Ashenbremer

Randolph E. Ashenbremer has been appointed sales engineer for the Marine Division of ZF of North America, Inc. Mr. Ashenbremer will be responsible for applications and installations, the company announced.

Mr. Ashenbremer has 16 years' experience in product development, support and marketing, with an emphasis on domestic and international liaison. His career encompasses a variety of senior design and engineering positions at Fiatallis North America, Inc. and Hyster Company.

ZF is a leading manufacturer of major power train components—gears, transmissions, pumps, axles and other drive systems. Markets served include automotive, on- and off-road heavy-duty vehicles, marine and special equipment industries. ZF of North America is headquartered in Lincolnshire, Ill.

OMI/IMC Joint Company To Acquire Dry Bulkers

OMI Corporation and International Maritime Carriers Ltd. (IMC), Hong Kong, recently announced that they have decided not to go forward at the present time with previously announced plans for a public offering of shares of Accordia Maritime Corporation, a newly formed shipping company. **Jack Goldstein**, OMI president, said the

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Wednesday, December 6

Session 1 LEGISLATION AND REGULATION

Chairman: P. Bergmeijer, Head of Marine Environment and Cargo Division, Directorate General of Shipping and Maritime Affairs, Rijswijk, The Netherlands

Key factors affecting the distribution of bulk chemicals in the nineties, P.R. Cooke, Director, Cooke and Associates, Farnham, UK

MARPOL 73/78 - fulfillment of expectations or disappointment. Experience gained in the Federal Republic of Germany, P. Ehlers, President, German Hydrographic Institute, Hamburg, Germany FR

The legislative and regulatory implications of vapour control from tankships, R.T. Matthews, President, Matthews Consulting and Construction, Inc., Frederick, MD, USA and Technical Secretary, Chemical Carriers Association, Paramus, NJ, USA

The implementation of optional Annex III of MARPOL 73/78 with Amendment No. 25-89 through the International Maritime Dangerous Goods (IMDG) Code, Captain H. Wardelmann, Head, Cargoes Section, IMO, London

Deja vu ... again: carriers confront another comprehensive liability scheme with an HNS Convention, A.P. Olney, Partner, Le Boeuf, Lamb, Leiby & McRae, Washington D.C.

An overview of the US Coast Guard's efforts to update its marine terminal regulations, K.J. Szigety, Project Mgr, Waterfront Facility Project, US Coast Guard, Washington D.C.

Thursday, December 7

Session 2 OPERATIONS AND SAFETY (1)

Chairman: R.J. Lakey, President, Robert J. Lakey & Associates, Inc., Houston, Texas, USA

Concentrations of chemicals in the North Sea due to discharges from chemical tankers, N. Hurford, Principal Scientific Officer, Warren Spring Laboratory, Stevenage, UK

Cargo tank washing under MARPOL Annex II - opportunities and limitations, J.B. Riksheim, Director, Det norske Veritas, Oslo, Norway

The practical implications of the carriage of an Annex II Category 'A' cargo for the shipowner, operator and ports involved, Capt. N.J. Snowden, Director, Snowden McLeod & Associates Ltd., Winchester, UK

Tanker cleaning in the world's biggest inland harbour - modern techniques for slop treatment, L.W. Klubescheidt, Manager, IUG Innovative Umwelttechnik GmbH, Essen, Germany FR

Chemical tankship design in the light of current regulatory requirements, Capt. N. Christiansen, Operations Manager, Chemical Tankers of America, Inc., and R.J. Lakey, President, Robert J. Lakey & Associates, Inc., Houston, Texas, USA

New safety legislation and port safety
Dr. D.S. Aldwinckle, Principal Surveyor, Lloyd's Register of Shipping, UK

Session 3 TANK CONTAINERS AND ROAD TANKERS (1)

Chairman: Lt. Cdr. P.C. Olenik, Regulatory Officer, US Coast Guard, Washington DC

Domestic tank container activity in the United States, M.S. Kostolich, Union Pacific Railroad, Omaha, USA

Chemical distribution in the post-1992 European Community: new opportunities for the efficient road tanker operator, M.J. Boddington, Director, Tankfreight Limited, Harrogate, UK

A formula for growth - the need for increased international cooperation on tank container standards, W. Freson, Manager, BLC & Dry Cargo Procurement, Exxon Chemical International Inc., Belgium

Group discussion on the papers, moderated by M. Corkhill, Editor, 'Hazardous Cargo Bulletin', London.

Session 4 EMISSION/VAPOUR CONTROL

Chairman: R.J. Lakey, President, Robert J. Lakey & Associates, Inc., Houston, USA

VOC control strategy in the Netherlands, R.A. Hulscher, Engineer, Ministry VROM, Leidschendam, The Netherlands

Emission - an economic and legal crossroads, F. Bracke, Research and Development Manager, SGS Depauw & Stokoe n.v., Zelzate, Belgium

New developments in vapour-handling systems, J.W. Uijlenbroek, Senior Process Engineer, Badger B.V., The Hague, The Netherlands

Vapor Control: technological and regulatory development in the United States, Cdr. R.W. Tanner, Chief, Hazardous Materials Branch, US Coast Guard, Washington DC

Group discussion on the papers

Friday, December 8

Session 5 TANK CONTAINERS AND ROAD TANKERS (2)

Chairman: J. Hookham, Manager, Hazardous Cargo Services, Freight Transport Association, Tunbridge Wells, England

United States regulations on portable tanks: major revisions to harmonise with international standards, Lt. Cdr. P.C. Olenik, Regulatory Officer, US Coast Guard, Washington DC

Daily problems encountered in the Port of Rotterdam with chemical tank containers and road tankers: what shippers and operators must do to reduce hazards, Speaker to be announced

Applying restrictions to the carriage of dangerous goods on certain roads with special reference to tunnels, J.A. Myhre, Transport Specialist, Statens Vegvesen Vegdirektoratet, Oslo, Norway

Swop tanks - transportation and safety considerations, H. Gerhard, Managing Director, Westerwalder Eisenwerke Gerhard GmbH, Weitfeld/Seig, Germany FR

Tank cleaning and wastewater treatment - a matter of cleanness and environmental protection, P. Sump, Group Coordinator, Environmental Services, Hoyer GmbH, Hamburg, Germany FR

To licence manufacturers or not to licence manufacturers? P.H. Bell, Managing Director, Consani Engineering (Pty) Ltd., Elsie's River, Republic of South Africa

Group discussion on the papers

Session 6 OPERATIONS AND SAFETY (2)

Chairman: G. McGuire, Director, The Centre for Advanced Maritime Studies, University of Strathclyde, Edinburgh, Scotland

Development of information systems for supporting decisions on emergency response to chemical spillages, I. Heidebrink, Systems Engineer, TNO - Department of Industrial Safety, Apeldoorn, The Netherlands

The current and future effect of ISO 9000 on chemical shippers, V.N. Lucas, Manager, Quality Assurance Div., Caleb Brett Services Ltd., Chelmsford, UK

Group discussion on the papers

Session 7 TECHNICAL DEVELOPMENTS

Chairman: T.R. Farrell, Lloyd's Register of Shipping, London

Submerged pumps for chemical carriers - latest designs for future requirements, T. Mohn, Managing Director, Frank Mohn A/S, Nesstun, Norway

A comprehensive answer to difficult tankcleaning, J. Langhorn, Managing Director, Kirilan Engineering ApS, Rødovre, Denmark

Tank coatings - the latest technology, Dr. Ir. Th. Reints Bok, Sigma Coatings B.V., Marine Division, Uithoorn, The Netherlands

The factors influencing ventilation and drying of epoxy coated cargo tanks, O.B. Sørensen, Engineer, Tech. Service Dept., J.C. Hempel Holding A/S, Copenhagen, Denmark

New cladding materials for the transportation of aggressive media, H. Enockl, H. Ormig, R. Pleshko and R. Schimbock, Voest-Alpine Stahl GmbH, Linz, Austria

Duplex stainless steels in chemical tankers: properties and practical experience, B. Leffler, Head, Product Development Department, Avesta AB, Degerfors, Sweden

Material properties of a new high-strength austenitic stainless steel for chemical tank vessels, Dr. Ing. W. Heimann, Stainless Steel Dept., Thyssen Edehstahlwerke AG, Krefeld, Germany FR

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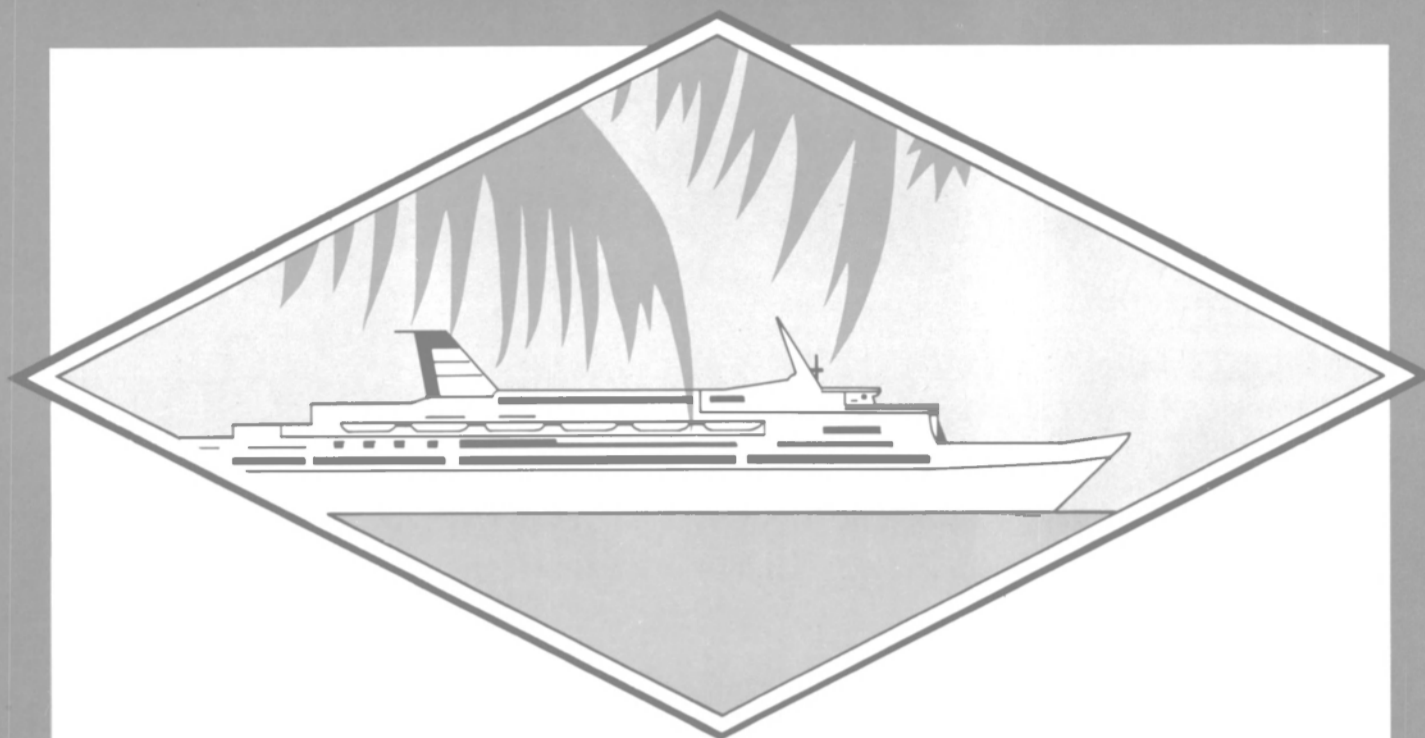
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