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ENGINEERING NEWS



OUTSTANDING SHALLOW-DRAFT PASSENGER VESSELS

ANNUAL WATERWAYS SPECIAL ISSUE

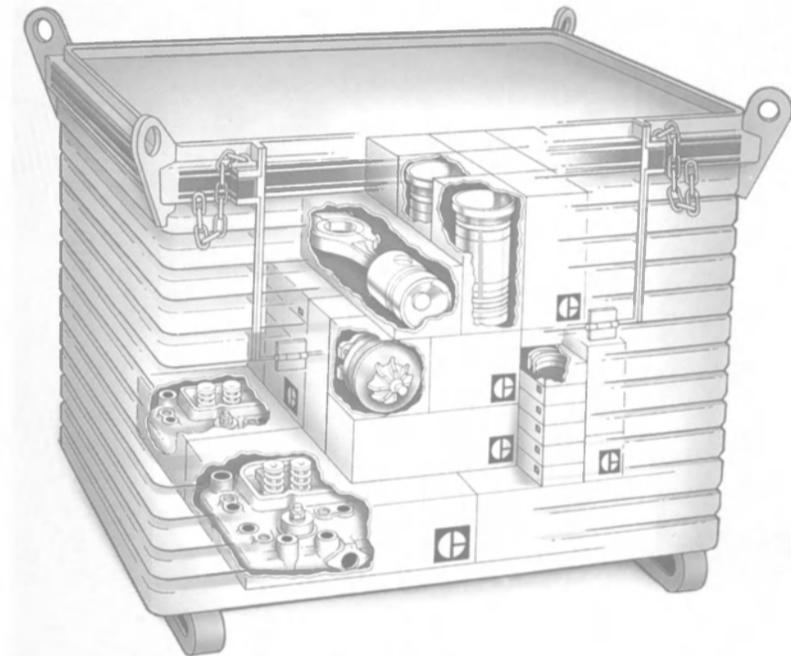
EUROPEAN SHIPBUILDING REVIEW

AUGUST 1988 ISSUE

Stay on Course with Cat In-Hull Overhaul Kits

The need for an overhaul at the wrong time can deal you a list of unfriendly choices. Head for the dry dock and a long shutdown. Put in for a dockside overhaul and lose maybe a week. Or you can keep running . . . and hope.

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With an In-Hull Kit, you're ready . . .

You choose the time and the place to overhaul that's easiest on your work schedules. And you're assured of a fast, dependable job because there are no missing parts to chase, no "will-fit" parts forced on you. And if you do find something unexpected like a cracked head, piston or camshaft . . . you've got an instant replacement. So you're free of expensive delays. With an In-Hull Kit, every overhaul need is provided for. All kit parts and components are either new or remanufactured to original performance specs. And every item carries Marine Society Approval.

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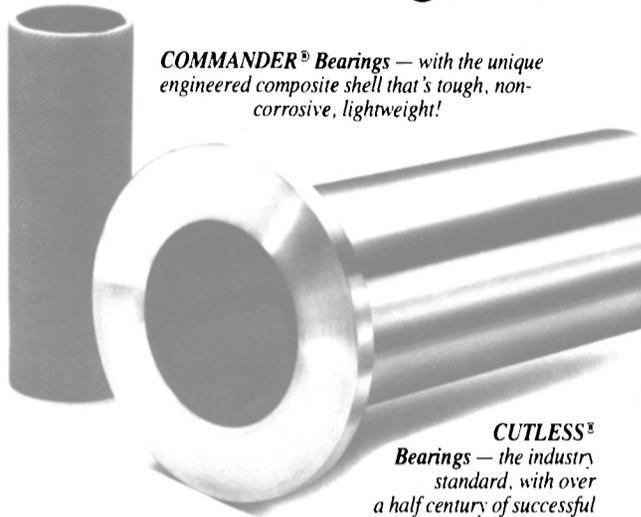
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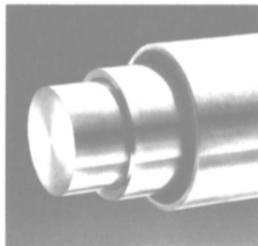


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ON THE COVER

Cover Photos (clockwise from logo): Maui Princess (Aluminum Boats); Eagle (McDermott Shipyards); Annabel Lee (Service Marine); Massachusetts (Gulf Craft); Yukon Queen (Munson Mfg).

**National Waterways
Conference Preview**
PAGE 6

**European Shipbuilding
Review**
PAGE 16

**Outstanding Shallow-Draft
Passenger Vessels Review**
PAGE 22

Hatch Nominated For Post At Army Corps Of Engineers

President **Reagan** recently nominated Maj. Gen. **Henry J. Hatch** to become the next Commanding General and Chief of Engineers of the U.S. Army of Engineers.

If confirmed by the Senate, General **Hatch** will succeed Lieut. Gen. **E. R. (Vald) Heiberg III**, who recently retired from military service. General **Hatch** has also been nominated to the grade of lieutenant general, a three-star rank.

Southwest Marine Gets Navy Repair Contract Worth \$12.9 Million

Southwest Marine, Inc.'s San Pedro Division was recently awarded a \$12.9-million contract for the repair and alteration of the guided missile frigate USS Jarrett (FFG-33).

The work, called an Extended Drydocking Selected Restricted Availability (EDSRA), will include major combat system and helicopter support alterations and upgrading of various antisubmarine warfare capability equipment aboard the USS Jarrett.

In addition, Southwest Marine will replace and extend the helicopter flight deck and install a Recovery, Assist, Securing and Transversing (RAST) system.

Southwest Marine is one of the largest ship-repair concerns on the West Coast, operating yards in San Diego, American Samoa, San Pedro and San Francisco.

For free literature detailing the ship-repairing facilities of Southwest Marine,

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Canada's Versatile Pacific To Drydock 17 Polish Fishing Vessels In 1988

Versatile Pacific Shipyards Inc. (VPSI) of Vancouver, one of Canada's leading ship repairers, will undertake the drydocking of a series of 17 Polish fishing vessels in 1988, it was recently announced.

This commitment follows a visit to Swinoujscie and Szczecin in March by **Quintin Watts**, VPSI's vice president, marketing, accompanied by **Wayne Fallis**, president, and **Carl Jacobsen**, vice president of Maritime Agencies, who represent the interests of the Polish fishing companies in Vancouver.

In addition to work performed by VPSI, contracts for victualling, spares and other repairs to the Polish Factory Trawlers supports local industry in the Vancouver region in the amount of Can\$30 million per year (about US\$25 million), thus employing and creating work for a substantial supplementary work force in the area.

For free literature giving full details on the facilities and capabilities of Versatile Pacific Shipyards,

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Aeroquip FC300 AQP Hose Receives Navy Approval

Aeroquip FC300 AQP® hose has received the U.S. Navy's approval for shipboard systems applications in sizes -04 through 032 (NavSea letter 56Y23/650).

Offering an operating temperature range from -55 degrees F to +300 degrees F, Aeroquip FC300 AQP hose, constructed with Aeroquip's patented AQP elastomer, provides resistance to high ambient and fluid temperatures plus superior abrasion and chemical resistance.

Aeroquip FC300 AQP hose is designed for use with standard reusable fittings and is available in sizes -04 (1/4-inch) through -40 (2-1/2 inches).

Aeroquip FC300 AQP hose is one of the company's entire families of AQP hose styles that are compatible with virtually every type of hydraulic fluid, lubricating oil and fuel at both high and low temperature extremes.

Complete information on Aeroquip AQP hose styles can be found in Aeroquip Bulletin 5978A. For a free copy,

Circle 48 on Reader Service Card

SPD Technologies Awarded Canadian Navy Contract —Brochure Available

SPD Technologies has been awarded a \$670,000 contract to produce a special-design battery monitoring system for Canada's Department of National Defense.

In addition to the design and manufacturing effort, the contract includes necessary technical data, spare parts, and support engineering services.

SPD's new BMS-100 all-cell bat-

tery monitoring system will be installed in the Canadian Navy's Oberon-class diesel submarines.

It features 448 probes and a specially designed computer to receive and display data on the operating status of all battery cells on the submarine.

The system, which is scheduled for delivery to the Canadian Navy in March 1989, will be produced at SPD's manufacturing plant in Philadelphia.

The BMS-100 is an advanced model of SPD's NS9055 battery monitoring system, which has been proven in submarine applications over the past three years. It is designed in modules for flexibility to adapt to specific battery system requirements.

According to the manufacturer, the BMS-100 system offers a combination of functional and cost efficiency never before available in MIL-SPEC battery monitoring sys-

tems for submarines, where precise measurements of power status is critical.

Key aspects of the advanced system are a new digital battery cell probe with additional hardware and associated proprietary software packages which provide a new standard in data acquisition, prediction, reliability and ease of operation.

For more information and free literature from SPD Technologies,

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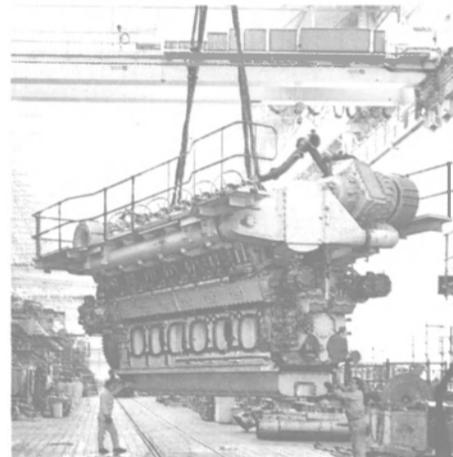
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NATIONAL WATERWAYS CONFERENCE TO HOLD 1988 ANNUAL MEETING IN NASHVILLE

Seven Other Waterway Organizations Plan Meetings To Coincide; Leaders From All Sectors Of Waterways To Attend

The National Waterways Conference, Inc. (NWC), the nationwide organization of industries utilizing water transportation, of water carriers, water resource associations, port authorities, state water boards, economic development agencies, and others concerned with the American waterways system, will hold its 1988 annual meeting at the Opryland Hotel in Nashville, Tenn., on September 21-23, 1988. Seven other major waterway organizations plan meetings to coincide.



Harry N. Cook

NWC president **Harry N. Cook** said that some 500 waterway leaders were expected to attend the various functions. They include regional meetings of the American Waterways Operators (AWO), whose Southern, Ohio Valley and Midwest Regions, Safety Committee and American Waterways Shipyards Conference have scheduled sessions.

The Tennessee River Valley Association and Tennessee-Cumberland Waterways Council will hold their annual meetings at the same time.

As its convention theme, NWC announced that its program would focus on, "After Turbulent Times, Calmer Waters—Rebuilding River Valley Economies in a More Receptive Public Climate."

NWC chairman **Sheldon L. Morgan**, senior vice president of First Alabama Bank, said the program would include two luncheons and six panel discussions. Subjects will range from waterborne commerce trends and regional economic opportunities to the impacts of climatic changes on navigation and of

Photo: Don Allen

"user-say" on Federal investment policy.

A dinner cruise aboard the M/V General Jackson, the Opryland Hotel's showboard, is also planned.

The Nashville meetings will begin on Wednesday afternoon, September 21, with registration.

The Tennessee River Valley Association will hold a general membership meeting, followed later in the afternoon by a board of directors' meeting. Presiding will be association president **J. Richard Hommrich**, president of Volunteer Barge & Transport, Inc.

Inland Rivers, Ports & Terminals, Inc., will hold a board meeting during the afternoon and a membership meeting the next morning. IRPT's chairman, **C.W. Mitchener**, executive director of the Yellow Creek State Inland Port Authority, will preside.

In the evening, there will be an opening reception in the Opryland Hotel.

On Thursday morning, September 22, the Tennessee-Cumberland Waterways Council—an organization of carriers and shippers utilizing the Tennessee and Cumberland Waterways—plans a breakfast meeting. **Kenneth A. Wheeler**, president of Walker Boat Yard, Inc., will preside.

The U.S. section of the Permanent International Association of Navigation Congresses (PIANC) will sponsor a breakfast session. The main speaker at the session will be Dr. **Anatoly Hochstein**, director of LSU's Ports and Waterways Institute. He will discuss the modernization of the Chinese inland waterways system, which totals some 100,000 miles in length.

The American Waterways Shipyards Conference will hold a day-long meeting, beginning with a steering committee breakfast. Conference co-chairmen are **Robert E. Kenny**, president of HBC Barge, Inc., and **David A. Marmillion**, marketing manager, Harvey Quick Repair Industries, Inc.

At 9 a.m., Mr. **Morgan** will gavel the NWC annual meeting into session, and Mr. **Cook** will deliver his annual report on the state of waterways industry.

Two panel discussions are scheduled during the morning, followed by the opening luncheon, which will

be attended by the Tennessee River Valley Association and Tennessee-Cumberland Waterways Council members. This will be the final event on their portion of the annual meeting program.

During the afternoon, two additional panel discussions will be held.

An evening reception, dinner and entertainment will take place aboard the M/V General Jackson, which will leave the Opryland Hotel dock for a cruise down the Cumberland River to downtown Nashville before returning to the hotel. During the cruise, the National Rivers Hall of Fame, which is located in Dubuque, Iowa, will induct **John Hartford**, widely known songwriter and performer.

On Friday morning, September 23, the Arkansas Waterways Commission has scheduled a breakfast meeting, which will be presided over by commission chairman **Ralph McDonald Jr.**

Also holding breakfast meetings will be AWO's Southern Region chaired by **Harriet C. Harrison**, president of Koch-Ellis Marine Contractors, Inc.; Ohio Valley Region chaired by **H.J. Bobzien Jr.**, president of the American Commercial Barge Line Co.; and Midwest Region chaired by **Robert L. Gardener**, vice president and general manager of ContiCarriers & Terminals Inc.

Brig. Gen. **Patrick J. Kelly**, recently named as Director of Civil Works for the Army Corps of Engineers, will open the Friday morning program with a report on the current status of port and waterway programs and plans for future construction.

Following his presentation, there will be two additional panel discussion programs. A luncheon will be the final event on the meeting program. Co-hosting the luncheon will be the Propeller Club of the Port of Nashville, the president of which is **Glenn A. Hendon**, vice president of Hunter Marine Transport, Inc.

For more information on the Nashville meetings or joining the NWC, contact: the convention coordinator, National Waterways Conference, Inc., 1130 17th Street, Northwest, Washington, D.C. 20036; or telephone: (202) 296-4415. ■



Some of the dignitaries who will be attending the annual meeting will include (L to R): **Sheldon L. Morgan**, chairman, NWC; **Howard D. Margaff**, president, St. Louis Terminals Corp. and conference treasurer; and **Rodman Kober**, vice president, Continental Grain Co.

Knapp Named Executive VP, Great Lakes Towing

The Great Lakes Towing Company recently announced the appointment of **Roy F. Knapp Jr.** as executive vice president.

Mr. **Knapp** is an active advocate of the Great Lakes Region, with involvement in several transportation-related and professional organizations, including the presidency of the Council of Lake Erie Ports for the past several years. He is also the former general superintendent of the Pittsburgh & Conneaut Dock Company, a wholly owned subsidiary of USX and one of the largest bulk material handling facilities on the Great Lakes. While there, he held superintendencies in engineering, operations, and maintenance.

The Great Lakes Towing Company is one the largest operators of vessel-towing tugs on the Great Lakes. The company has been in continuous operation since 1899 and owns and operates 44 tugboats throughout the Great Lakes from Duluth to Quebec City.

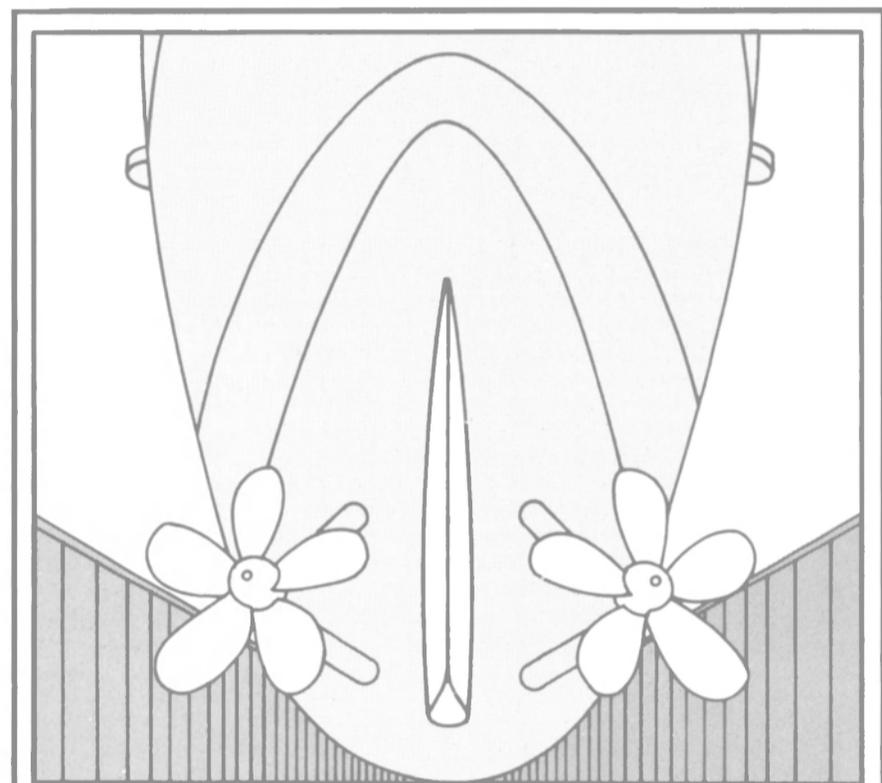
For more information and free literature on Great Lakes Towing Company,

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Laborde Succeeds Bankston As President And CEO Of Tidewater Inc.

Damon B. Bankston recently announced his retirement as president and chief operating officer of Tidewater Inc., an operator of an international fleet of support vessels for the offshore oil and gas industry, at the company's regular scheduled meeting of its board of directors. He will continue to serve Tidewater as a part-time consultant and member of the board of directors until the expiration of his current term.

John P. Laborde, Tidewater chairman and chief executive officer, was elected by the board of directors to succeed Mr. **Bankston** as president. Mr. **Laborde** was Tidewater president from 1956-81. The position of chief operating officer will remain unfilled.



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MAKING WAVES—Matson Navigation Company's new 387-foot container barge *Islander* slides in to the Neches River from the launching ways at Bethlehem Steel Corporation's Beaumont, Texas, shipyard. The *Islander* has a 316-container capacity and will be used in Matson's mid-Pacific service.

**Mackay Named
Exclusive U.S. Distributor
Of Skanti Communication System
—Brochure Available**

Mackay Communications, Inc., has been named the exclusive distributor for the Skanti TRP 8258S in the U.S. according to a recent announcement by the company.

The Skanti TRP 8258S is an advanced communication system based on the latest computer technology and is designed to satisfy the expected future international requirements for HF radio equipment in the form of Global Maritime

Distress and Safety System (GMDSS) and Digital Selective Calling (DSC). The TRP 8258S is a 250-watt PEP, FCC type accepted, SSB radio-telephone, synthesized over 1.6 to 30 MHz frequency range and all functions are microprocessor controlled. Provision has been made for automatic telex systems such as MARITEX when used with an optional telex (SITOR) terminal. The three-unit system comprising a transceiver, user-friendly control unit, and an antenna tuner provides flexibility of installation.

For a free brochure fully detailing the Skanti communications system,

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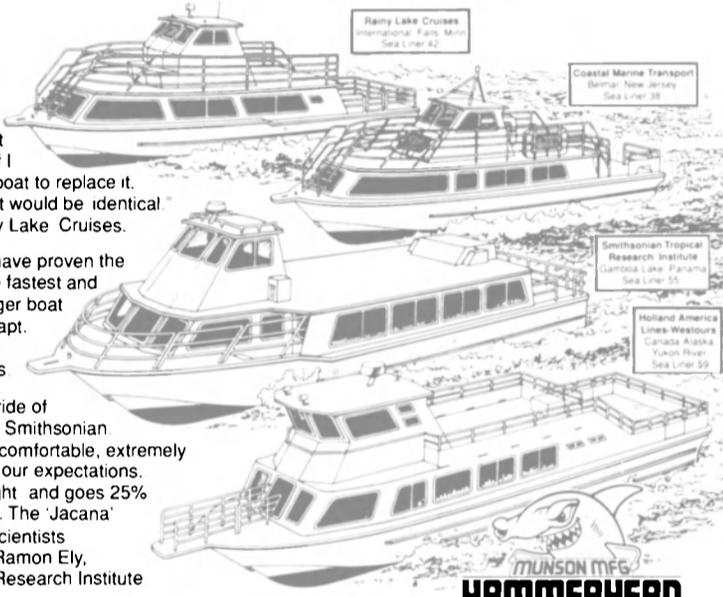
"At the end of our first season I stood back and looked at 'The Pride' wondering what I would do differently if I were planning a new boat to replace it. I decided the new boat would be identical." Capt. Bob Hilke, Rainy Lake Cruises.

"Two seasons of use have proven the Lucky Strike to be the fastest and most durable passenger boat on the East Coast." Capt. Mike Skalitz, Coastal Marine Transport Lines.

"The 'Jacana' is the pride of Gamboa Lake and the Smithsonian. She is well designed, comfortable, extremely fast and surpasses all our expectations. She carries more weight and goes 25% faster than anticipated. The 'Jacana' has been praised by scientists from the world over." Ramon Ely, Smithsonian Tropical Research Institute.

The 'Yukon Queen' is under construction and will be put into service June, 1988. She is powered by three 585 hp diesels coupled to water jet drives.

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Maritime Reporter/Engineering News

Barge Line Cuts Costs And Improves Operating Efficiency By Using Vessel Management System

The Vessel Monitoring System, one component of the complete Vessel Management System marketed by Vessel Management Systems Co., is a system which can pay for itself in as little as seven months, according to **Christian Brinkop**, vice president of river operations for American Commercial Barge Line Company (ACBL). Mr. **Brinkop** said, "We have found that VMS, in the stand-alone mode, without any of the other components we're talking about, has produced between a 3 percent and a 5 percent increase in fuel productivity aboard our vessels."

According to Vessel Management Systems, the difference between VMS and other available systems is that it continuously monitors and analyzes many operating variables in addition to fuel consumption, such as ground speed, speed through water, channel depth, engine rpm and shaft rpm. It can also factor into its analysis trip data such as tow configurations, planned departure and arrival times, hourly operating costs, fuel costs and even barge drafts.

Another feature that attracted Mr. **Brinkop** to VMS was its flexibility. "The people who developed it had done it from scratch so it was an easily adaptable system. They were willing to change to meet our needs." Today, ACBL has VMS on 30 vessels and will eventually have it on most vessels in their fleet.

Another component of the system has helped ACBL increase productivity at their Jeffersonville, Ind., offices. Called Traffic and Dispatch Manager (TDM), it is a computer program, run on a PC, that streamlines trip planning, scheduling and tow arrangement design for maximum efficiency. Mr. **Brinkop** reports that his managers, after some early hesitation, have found it to be a valuable cost-saving tool.

Mr. **Brinkop** also discussed the benefits of linking on-board and office systems together with WATERCOM[®] telephone, which is offered by Waterway Communications System, Inc., Jeffersonville, Ind. "With WATERCOM, I now have the ability to go out and retrieve that data and bring it in, in a real time mode, so I can make today's decisions using today's information," he said.

The on-board link Mr. **Brinkop** was referring to is the TRAP computer. This ruggedized computer ties all shipboard information sources into one central area, which can be accessed by the office via VMS high-speed modem. The TRAP, unlike most PCs, can respond to several tasks concurrently. This means that the captain can be entering deck log information, the VMS can be logging performance data, and the office can be sending/exchanging information all concurrently. By having computerized deck logs, crew logs, etc., running on the TRAP, the office has access to

this information 24-hours-a-day, and since the data is already in "digital" form, the need to reenter that data on the office computer is eliminated. Now, other departments can benefit from more efficient operations and through the gathering of timely information.

By combining "real time" data with accumulated historical information ACBL can respond quickly to business opportunities. Mr. **Brinkop** gave a specific example. "I know that today's gauge at Memphis is zero. I can go in there and say at zero on the gauge, if I want to bring up 20 loads out of New Orleans on an 8,400 horsepower boat, how long is it going to take me and what is it going to cost?" and in 30 seconds, I can get an answer."

According to Mr. **Brinkop**, such an analysis would normally take eight hours of work, if you had an analyst free to do it immediately, an unrealistic assumption. "We're really looking at a week to answer the question and in a week, I don't need to make that decision because the Memphis gauge is either going to be -3 or +5 and the barges are already going to be moved anyway."

Mr. **Brinkop** and ACBL are pleased with the benefits of the Vessel Management System. "There's nothing else remotely like it," he said.

For free literature fully detailing the benefits and features of the Vessel Management System,

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The Super Ranger, built by Gulf Craft, Inc., is powered by three Detroit Diesel engines, which produce a total of 2,160 shp at 2,300 rpm.

Gulf Craft Delivers 150-Passenger Party Fishing Boat

Gulf Craft, Inc., Patterson, La., recently delivered a 100-foot, 150-passenger party fishing vessel to Ronger Fishing Fleet, Sheepshead Bay, N.Y.

The M/V Super Ranger is 100 feet long, has a beam of 25 feet, draft of 5.5 feet and a hull depth of 5.5 feet. She is powered by three Detroit Diesel model 12V71TI diesel engines, coupled to Twin Disc 514C, 2:1 reduction gears, producing 720 shp each at 2,300 rpm. The three V12s produce speeds of up to 27 mph. Electrical power is provided by two 30-kw KATO generators driven by a Detroit Diesel model 3-71 diesel engines. The propulsion package and generator were supplied by Kennedy Engine.

The Super Ranger features a full service galley in the forward section of the main deck cabin and a bait and tackle center in the aft section of the main deck cabin, with combination bench and dinette seating in the remainder of the cabin. Heating

SUPER RANGER Equipment List		
Main engines (3)	.....	Detroit Diesel
Reduction gears	.....	Twin Disc
Generators	.....	KATO
Generator engine	.....	Detroit Diesel
Heating system	.....	Modine
VHF radios	.....	ICOM
Loudhailer	.....	Cybernet
Stereo unit	.....	Cybernet
Autopilot	.....	Furuno
Sonar	.....	Lowrance
Radars	.....	Furuno
Loran	.....	Furuno
Seawater temperature gauge	.....	Dytex
SSB radio	.....	ICOM
Fish finder	.....	Furuno

is provided by Modine units throughout the main cabin, pilothouse, and engine room.

The aft deck is equipped with a large refrigerated box which is used for storage of bait and fish. Rod holders outline the entire bulwarks, (continued)

The Controllable Pitch Propeller that fulfills all requirements of today's and future shipbuilding technology:

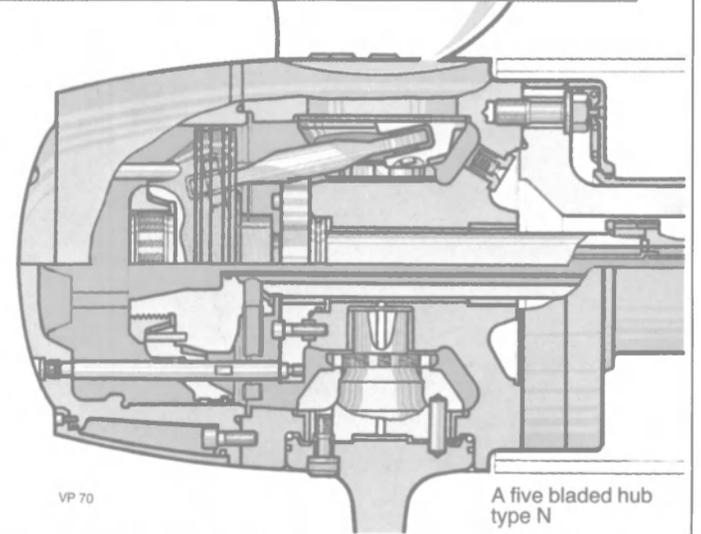
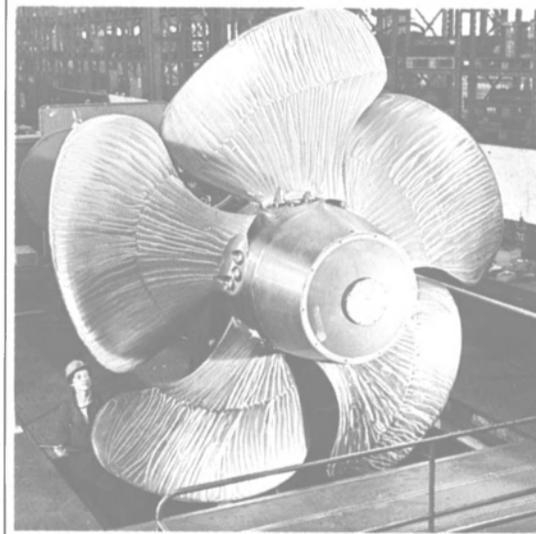
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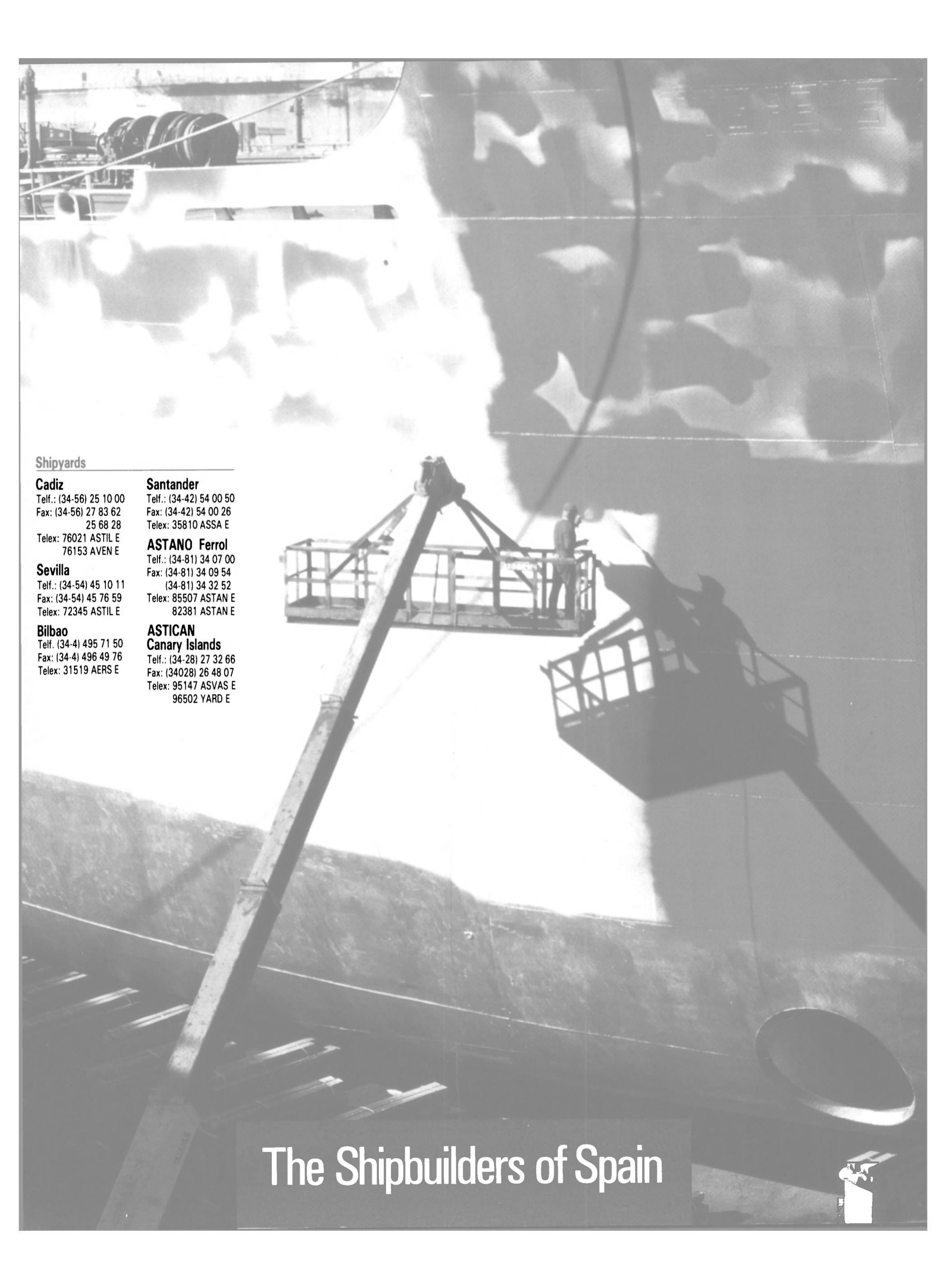
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Gulf Craft Delivers Party Fishing Boat

(continued)

while bench seating wraps around the entire exterior section of the cabin.

The pilothouse is equipped with a duplicate set of the most modern electronics ranging from the VHF radio to the color scope fish finder. Electronics included are two ICOM

VHF radios, one Cybernet CTX-1000 loudhailer, one Cybernet CMS-4000 stereo unit, one Furuno autopilot, one Lowrance Computer sonar, two Furuno radars, two Furuno LC-90 lorans, one Dytex seawater temperature gauge, one ICOM single-side band radio and a Furuno color scope fish finder.

For free literature detailing the complete boatbuilding services of Gulf Craft,

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Indikon Offers Movilog Data Collector To Avoid Costly Repairs

Indikon, a division of Metravib Instruments, Inc., Cambridge, Mass., is offering the Movilog Data Collector to help in predictive maintenance and avoid costly failures, assure maximum efficiency and optimize machine availability.

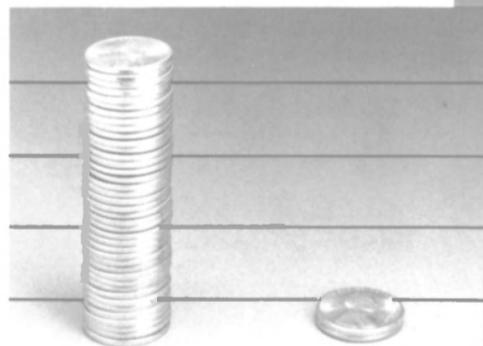
Microprocessor-based, the Movilog Data Collector stores up to 1,500 data points and data entry is through vibration, temperature, or bar code reader sensors; key pad or

via direct connection to full-time monitoring systems—either at the transducer or from a direct current analog or dynamic output to the unit. It is uploaded from a personal computer with route information, spelling out route, machines on route, and points on each machine to be taken, plus type of reading to be taken. Previous data are presented to an operator along with alarm if current reading exceeds limits.

For free literature detailing the Movilog Data Collector from Indikon,

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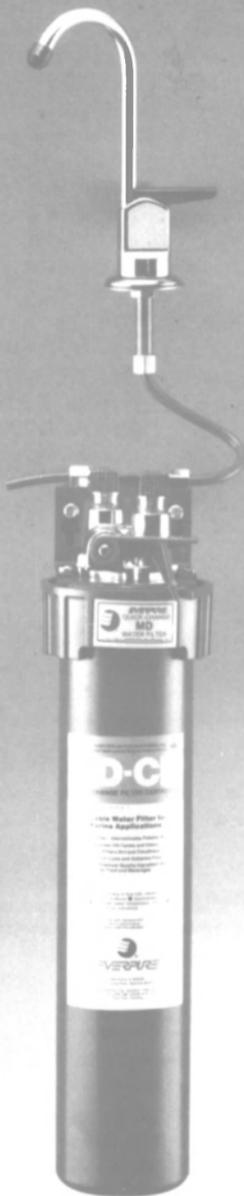
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Circle 168 on Reader Service Card



The 40,000-grt Crown Odyssey at Meyer Werft's outfitting berth in Papenburg is powered by Krupp MaK engines.

Meyer Werft Shipyard Delivers Luxury Liner Crown Odyssey For Royal Cruise Line

Free Literature Offered

The 40,000-grt cruise ship Crown Odyssey was recently delivered by the Papenburg, West Germany, shipyard of Meyer Werft to Royal Cruise Line of Piraeus, Greece.

The 616-foot cruise ship was christened earlier at ceremonies at the Papenburg yard by **Irene Panagopoulos Tsangridis**, daughter of the chairman of the board of Royal Cruise Line, **P.S. Panagopoulos**. Other principals at the ceremony included: **Evangelos Giannopoulos**, the Greek Minister of Mercantile Marine; **Nicholas Skoulas**, the Greek Undersecretary of State for National Economy; and **Walter Remmers**, the German Minister of Justice of Lower Saxony.

The Crown Odyssey has a molded breadth of 92-1/2 feet and draft on summer freeboard of 22.7 feet. She has 12 decks, and will be able to carry 1,221 passengers in 526 cabins. The Crown Odyssey also has 199 crew cabins and a complement of 443.

The luxury cruise ship is powered by a "father and son" four-engine plant consisting of two Krupp MaK 8M601 "father" engines with an output of 10,880 hp at 400 rpm each and two Krupp MaK 6M35 "son" engines, each developing 3,604 hp at 720 rpm. The plant produces a total of about 29,000 hp and a service speed of about 22 knots. The engine output is being transmitted via double reduction gears with integrated lamella couplings to the controllable pitch propeller system. The main and auxiliary engines are designed to operate on heavy fuel oil IFO 600.

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

Two semi-spade rudders directly fitted behind the controllable pitch propeller and two bowthrusters ensure good maneuverability of the Crown Odyssey. Additionally, she is fitted with stabilizers which reduce her roll motion by 90 percent at a

speed of 17.5 knots.

On board the Crown Odyssey there are a total of 11 public rooms including the "Seven Continents Restaurant" on deck 6 which seats 640 persons. The other public spaces are situated on the Odyssey, Lido and Horizon decks (7th, 8th

CROWN ODYSSEY Equipment List

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

and 11th decks). The Monte Carlo Court, which is located on the Odyssey Deck, includes a casino, bar and several boutiques. Forward of this area there is the Odyssey Show Lounge with submergible stage and seating accommodation for 500 persons. Aft of the Court there is the Yacht Club, which has a 280-person capacity with an illuminated dance floor and an ample buffet.

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

The Crown Odyssey will first undertake routes between England and the Baltic Sea and then will be put into worldwide service.

For free literature on the shipbuilding services offered by Meyer Werft,

Circle 56 on Reader Service Card

Leslie Controls Offers Free Primary Flow Element Selection Guide

Tampa-based Leslie Controls, Inc. is making available a free Primary Flow Element Selection Guide to be used in conjunction with Leslie's EACS Commander Series Flow Measurement Monitoring System.

The guide explains in detail the selection of various primary flow elements, and emphasizes the Commander unit's ability to interface with any type, or combination of types, of elements. The guide gives a breakdown of several non-linear and linear devices, and provides charts showing flow element comparisons and maximum orifice flow rates for saturated steam.

For a free copy of the guide from Leslie Controls,

Circle 19 on Reader Service Card

Fincantieri Lays Keel For First Of Two Cruise Vessels

The keel for the first of two cruise vessels was recently laid at the Monfalcone shipyard of Fincantieri in Italy. The vessels were ordered by Astramar and are to be operated by Sitmar Cruises of Los Angeles, Calif.

The cruise ships will accommodate 1,950 passengers in comfortable cabins or mini-suites. In addition to wide open-air and public spaces, the cruise vessels will contain pubs, stores and theaters together with a veranda deck with two swimming pools completely protected by specially shaped glass screens.

For free literature containing full information on the facilities and capabilities of Fincantieri,

Circle 11 on Reader Service Card

MXD 400 Range Of Oils Discussed In Free Color Brochure From Castrol

Castrol Marine of England, specialists in marine lubrication, has published a new four-page color brochure on the Castrol MXD 400 range of oils that the company markets.

The brochure presents a brief history of the development of the Cas-

trol 400 range of oils, which followed an exhaustive program of laboratory testing of many different additive combinations using well-proven test methods. The formulation finally selected for the Castrol 400 range gave outstanding results on all those parameters. Produced in both SAE 30 and SAE 40 grades, they are designated Castrol MXD 403 and Castrol MXD 404, respectively.

Included in the publication is a comparison of Castrol MXD 404 with previously tested equivalent

oils, showing MXD surpassing these oils in all assessments. Also listed are the typical characteristics for Castrol MXD 403 and MXD 404.

The brochure also points out that the diesel performance of the Castrol MXD 400 range of oils is far in excess of API-CD and MIL-L-2104C requirements.

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

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A model 250AMO in operation at Port of Sfax, Tunisia.

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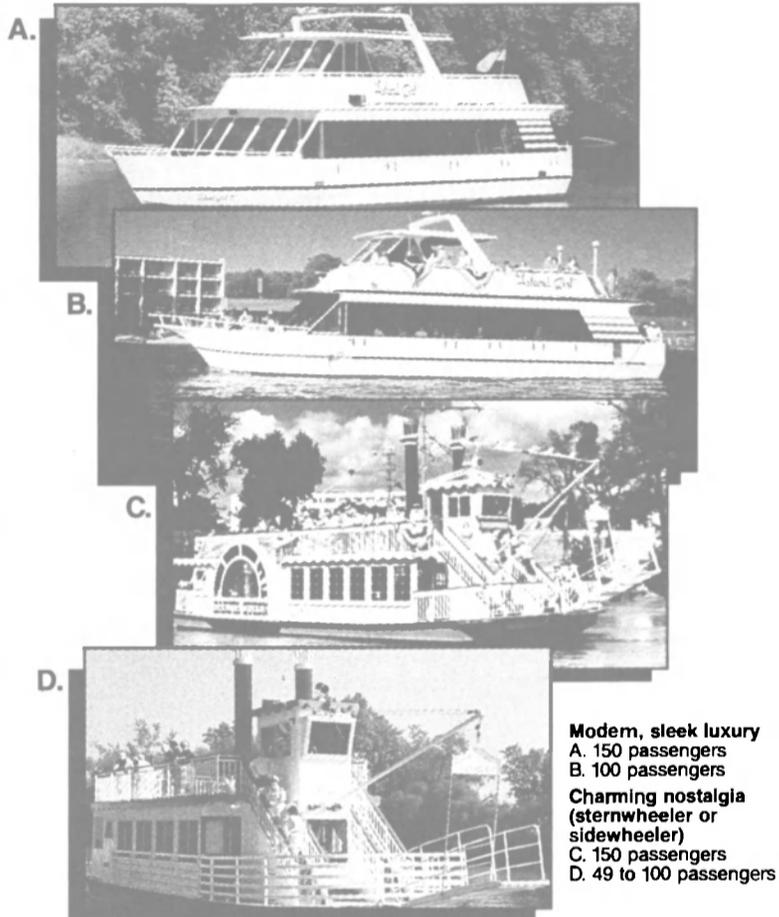
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The USS Devastator (MCM-6), the fourth Mine Countermeasure Ship launched by Peterson Builders, Inc., for the U.S. Navy.

Peterson Builders Launches Their Fourth MCM For U.S. Navy

Peterson Builders, Inc. (PBI), Sturgeon Bay, Wis., recently christened and launched their fourth Mine Countermeasure Ship (MCM), the USS Devastator, at ceremonies at the yard.

The sponsor of the 224-foot USS Devastator (MCM-6) was Mrs. **Carol Dixon Ashford**. Her niece, Miss **Jamie Kempes** assisted her as the maid of honor. The Honorable **Robert Kasten**, U.S. Senator for Wisconsin, gave the keynote address.

Additional speakers during the Navy ceremony were **Paul A. Schneider**, Executive Director for Amphibious, Auxiliary, Mine and Sealift Directorate, Naval Sea System Command, Washington, D.C., and **Ellsworth L. Peterson**, president of Peterson Builders. The invocation was delivered by the Rev. **R. Burke Johnson** of the Sturgeon Bay Moravian Church.

The wooden-hulled Devastator, which will carry a crew of 81, has a beam of 38 feet 11 inches, draft of 11 feet 3 inches and displacement of 1,262 long tons. She is powered by four Isotta Fraschini diesel engines rated at 600 hp each and is also fitted with two 200-hp Hansome Electric motors. For maneuverability, the Devastator is equipped with a 350-hp Omnitruster bowthruster which is connected to a GE drive motor. Her electric power is furnished by three 60-Hz, 375-kw Tech Systems generators.

nished by three 60-Hz, 375-kw Tech Systems generators.

The MCM, the Navy's largest wooden-hulled ship, incorporates modern mine countermeasure technology into a specially designed platform which includes low magnetic signature diesel engines, a precise electronic navigation system, a minehunting and classification sonar, and a mine neutralization system.

The MCM mission is to clear the bottom and water volume of mines in coastal and offshore areas. Production of the MCM ships is underscored by an extensive array of tests for shock, noise, vibration and magnetic signature. As a product of dedicated effort and resources, the MCM will fulfill an important role in the long-standing objective to maintain U.S. mine countermeasure capability.

The Devastator is the fourth MCM launched at PBI in the last three years. She is the fourth of five contracted with PBI by the U.S. Navy. Peterson Builders is one of the few shipyards with the expertise, facilities and knowledge to construct large wooden ships. PBI has built mincraft for 13 different navies around the world.

For free literature detailing the shipbuilding services of PBI,

Circle 28 on Reader Service Card



Principals at the launching ceremony included: **Paul Schneider**, Executive Director, Amphibious, Auxiliary, Mine & Sealift Directorate, NAVSEA; Mrs. **Carol Ashford Dixon**, ship's sponsor; maid of honor, Miss **Jamie Kempes**; Capt. **Thomas Kile**, Supervisor of Shipbuilding, Sturgeon Bay; Sen. **Robert Kasten**; and **Ellsworth Peterson**, Peterson Builders, Inc.

Maritime Reporter/Engineering News

PROPULSION UPDATE

Deutz MWM Offers Diesel Engines For Propulsion, Power Generation Aboard Naval Vessels

—Free Literature Available—

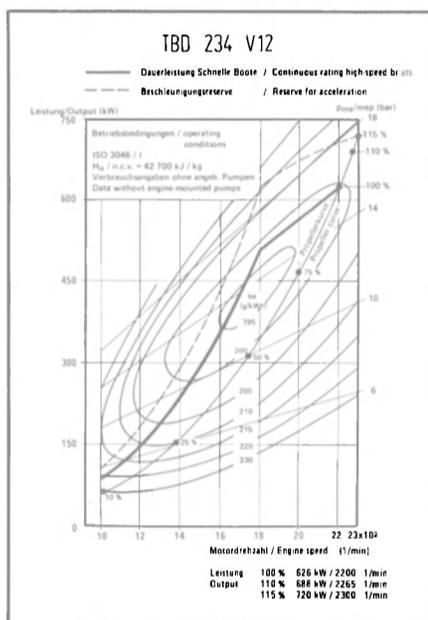
Throughout its almost 125-year company history, Deutz MWM has powered a number of naval vessels. Additionally, KHD has also supplied engines for army and air forces. Some of the company's most recent success is built around two engine series—TBD 234 and TBD 604B.

The compact TBD 234 diesel engine series, which has an exceptional low weight to power ratio of 4.4 pounds/bhp, is available in six-, eight-, 12- and 16-cylinder "V" configurations, rated at up to 1,224 hp at 2,300 rpm. Each of a series of seven Spanish Customs Service patrol craft were fitted with a pair of TBD 234 V-12 diesel engines. Rated at 1,000 hp each, the engines directly drive Riva Calzoni waterjets to propel the 47-foot craft at speeds of about 54 knots. The engines' extremely low fuel consumption allows the vessels to operate for long periods of time and in a greater sea radius. The design of the engines also allows for simple servicing.



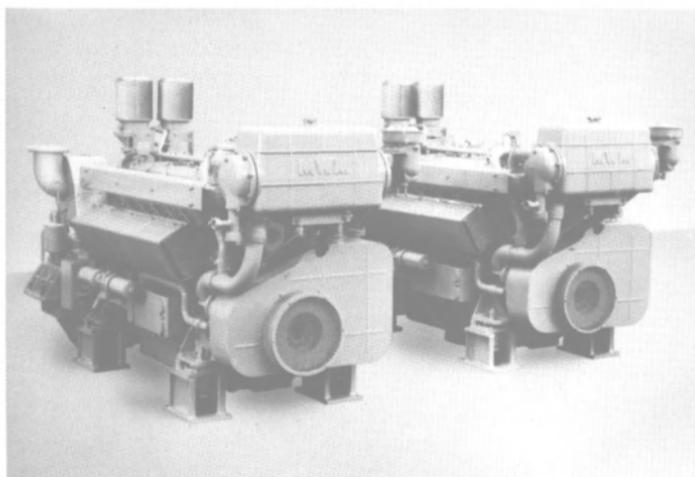
Deutz MWM TBD 602 V-16 K module.

Deutz MWM also has begun the delivery of 24 self-contained generating sets of 850 kw each to the Canadian Navy for their new patrol frigates. Deutz MWM sold 32 sets of



an almost identical configuration to the German Navy for use aboard their F-122 Bremen Class frigates. The sets are installed with a double-elastic mounting in soundproof containers. The modules are arranged to allow easy transfer from the ship to base for overhaul. Deutz MWM designed the units to be shock-resistant, allowing the generator sets to continue to operate in extremely severe conditions.

The incorporated TBD 602 V-16 K engines are available in a second development stage as the 604B Series diesel engine. The engines cover a power range of up to 2,624 hp at 1,800 rpm for main propulsion. The engine features easy service accessibility to all running parts, even to the crankshaft and conrod assembly through the crankcase ports.



Twin TBD 234 V-12 diesel engines like these directly drive Riva Calzoni waterjets in a series of seven Spanish Customs patrol boats. The engines are rated at 1,000 hp each.

Both of these Deutz MWM engine series feature low fuel consumption—with ratios as low as .315 pounds/bhphr. This low fuel consumption allows for a substantial increase in a vessel's range while reducing its operating costs. Deutz MWM diesels have relatively high compression ratios for excellent low-load performance and are equipped with special low-load features to reduce smoke and other emissions.

Deutz MWM also offers the popular 628 Series engine, which has been selected to power several Canadian Coast Guard vessels and similar ships. The power range of these diesels covers up to 4,460 hp at 1,000 rpm. Larger engines rated at 9,860 hp at 600 rpm are available.

Deutz MWM engines have been used aboard several types of vessels, ranging from catamarans to frigates, patrol boats to high-performance passenger vessels.

For free literature detailing the full line of marine diesel engines for main propulsion and power generation offered by Deutz MWM,

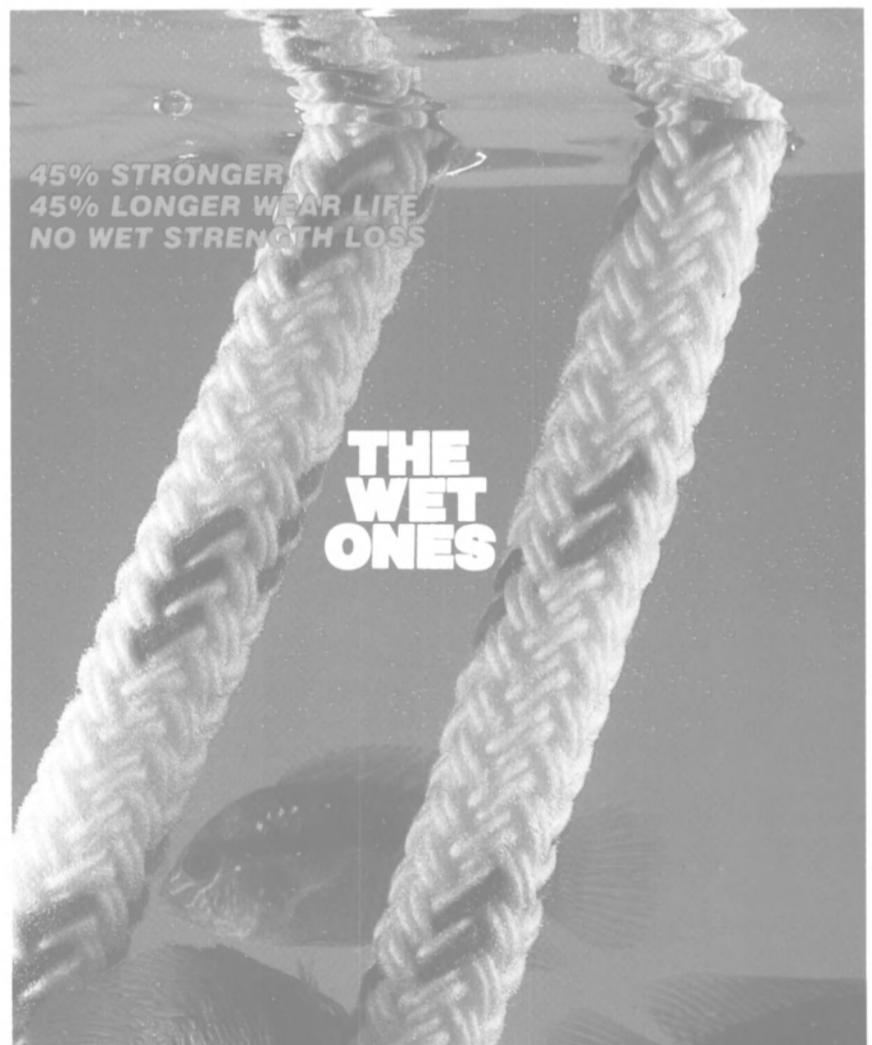
Circle 61 on Reader Service Card

Stolt-Nielsen Buys Three Parcel Tankers

Stolt-Nielsen will purchase three 39,000-dwt parcel tankers under a recently reached agreement with Slobodna Plovidba, one of Yugoslavia's largest shipowners.

The tankers, the M/Ts Maasuskok, Maasgusar and Exporter, will be bareboat chartered back to Slobodna Plovidba, who will time-charter them to Stolt Tankers Inc. for operation in its worldwide parcel tanker services upon expiration of their present time-charters. The M/T Exporter is already on time-charter to Stolt Tankers, while the remaining two ships are time-chartered to Nedlloyd until the end of the year. Slobodna Plovidba will subcontract the ship management functions to Stolt-Nielsen for an initial three-year period.

Besides the purchase, the agreement also includes cooperation in the parcel tanker trade to and from Adriatic Sea ports as well as the training and development of Seafarers employed by Slobodna Plovidba.



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Circle 338 on Reader Service Card



A REPORT ON EUROPEAN SHIPBUILDING

Signs Of Improvement As Passenger Ship Orders Rise

Despite battling what the European Community termed "aggressive, irregular and unfair international competition" from the Far East, European shipyards showed signs of improvement during late 1987 and early 1988. A large part of Europe's improved showing can be traced to an increase in cruise ship orders, the resurgence of Spanish yards in the international market and Yugoslavia's continuing rise as a shipbuilding power in the world market.

Furthermore, several optimistic signs have raised the hopes of European shipbuilders. For example, freight rates soared during the past year, only about 3 percent of the world merchant fleet is idle and a large percentage of the aging world fleet will have to be replaced shortly.

Estimates by Oslo-based shipbroker Fearnleys show that world shipbuilding orders will rise to between 25 million and 35 million tons over the next 10 years.

Photo: Meyer Werft's covered building dock, said to be the largest in the world, has a length of 257 meters (843 feet).

The Yards

Spanish shipbuilding has shown a remarkable resurgence on the world market. For example, the Andalucia yards of the Spanish state-owned shipbuilder Astilleros Espanoles S.A. (AESAs) are assured of work orders well into 1989, according to the company.

AESA has received a contract to build two 140,000-dwt tankers for Refineria de Petroleos del Norte, a 61,000-dwt carrier for Spanish owner Elcano and two reefer vessels for Del Monte Tropical Fruit Co. The group's Sevilla yard is building four smaller reefer vessels for Del Monte.

AESA's Sestao shipyard in Bilbao is constructing a 112,000-ton crude oil tanker for Knutsen OAS Shipping of Norway under a \$32-million contract. A second vessel, a 12,000-ton product/chemical tanker, ordered by Knutsen from AESA will be built at the group's Juliana shipyard in Gijon. Both vessels are expected to be delivered in the second of 1989.

AESA has also signed a three-year pact with two Cuban shipping companies to repair their fleets.

In Portugal, the Setenave yard is faced with far-reaching proposals aimed at restructuring the company's shipbuilding and ship-repair activities. Reports indicate that as a result of the restructuring, the yard will be split in two and overall operating capacity will be reduced, with the shipbuilding and ship-repair activities coming under different corporate names.

On top of the shipbuilding news in the U.K., is the possible construction of what would be the largest cruise ship in the world. The proposed 1,130-foot, 3,000-passenger luxury cruise ship would be built by Belfast-based Harland & Wolff. The state-owned yard has signed a "heads of agreement" with Tikkoo Cruise Line for the construction of the 160,000-grt vessel, known as the Ultimate Dream. The deal rests upon a number of details, including the amount of British Government subsidies.

In the meantime, the British Government is hoping to sell Harland & Wolff. One of the parties interested in possibly purchasing the yard is **Ravi Tikkoo**, the man behind the Ultimate Dream project.

State-run British Shipbuilders recently sold its Glasgow-based Govan yard, which faced possible closure for lack of orders, to Kvaerner Industrier A/S of Norway for about \$10.2 million. The new owners, who plan to restructure the yard, already have two LPG ship orders and an option for two more from the same owner.

British Shipbuilders' largest subsidiary at Sunderland, North East Shipbuilders Ltd., is busy with the construction of a series of 25 Superflex RO/RO passenger/vehicle ferries for Vognmands-Rudten (VR) Shipping of Denmark. The first two ferries of the series, the Superflex Alfa and the Superflex Bravo, are now in service. Construction of one of the ferries was subcontracted to the North Devon yard of Appledore Ferguson Shipbuilders.

In St. Nazaire, France, Alsthom's Chantiers de l'Atlantique yard received a \$150-million order from Gotaas-Larsen's subsidiary Admiral Holdings Inc. for a 44,300-grt cruise ship. The vessel, which is expected to be delivered in the first half of 1990, will have a 2,000-passenger capacity.

The yard also recently floated out Sitmar's 1,700-passenger cruise ship FairMajesty, which is due for delivery next year. The yard has four passenger ships on its orderbook worth over \$500 million.

Some of the biggest shipbuilding news out of Germany is the recent agreement of intent signed by World City Corp. A/S with four West German shipyards to build a cruise ship which would be even larger than Mr. Tikkoo's Ultimate Dream project. Four West German yards, Bremer Vulkan, Howaldtswerke Deutsche Werft, Blohm & Voss and Thyssen Nordseewerke, will join forces on **Knut Kloster's** Phoenix Project. The ship would have an overall length of 1,247 feet, beam of 253 feet, a 5,600-passenger capacity and a gross tonnage of 250,000.

The next step for World City Corp. and the shipbuilders is to work out a financing scheme, so that a final contract for the vessel's construction can be signed before the end of this year. The project has an estimated price tag of \$1 billion.

Papenburg's Meyer Werft received a \$150-million contract to build a 1,400-passenger cruise liner for Chandris Fantasy Cruises. The 45,000-grt luxury passenger ship, which is expected to be delivered in the spring of 1990, is destined for the Caribbean market. The order was received prior to the Papenburg yard's recent delivery of the 616-foot, 40,000-grt passenger ship Crown Odyssey to Royal Cruise Line. Meyer Werft had inaugurated their new 843-foot covered building dock by floating out the Crown Odyssey late last year.

In addition, the Papenburg yard was busy with a number of conversions. The yard was recently awarded a contract by Holland America Line to lengthen the 670-foot cruise ship Westerdam to 800 feet. The lengthening will increase the vessel's passenger capacity from 1,200 to 1,500. The work will begin in October 1989 and be completed in March 1990.

In the face of fierce competition from the Far East, a number of German yards underwent restructuring and merger plans. Bremer Vulkan, for example, now has controlling interest in four other shipbuilding yards—Seebeckwerft, Lloyd Werft Bremerhaven, Schichau Unterweser and Neue Jadewerft—and a fifth, Sieghold-Werft Bremerhaven GmbH & Co., is expected to be added shortly.

One of the group's members, Seebeckwerft AG, located in Bremerhaven, has a present orderbook backlog which will keep the yard busy into 1990. The yard boasts eight newbuildings on its orderbook, including two 576-foot railway/freight ferries, the Nils Dacke and Robin Hood, for Hamburg-based TT-Line, two 212-passenger luxury cruise liners for Seabourn Cruise Line, two 541-foot jumbo-ferries for Olau-Line of Hamburg, a railway ferry, Railship III, for operation between West Germany and Finland, and a 325-foot full-freezer stern trawler.

Other group members, Schichau

Unterweser and Lloyd Werft, both based in Bremerhaven, were recently awarded contracts. Schichau Unterweser will be building two 650-gt RO/RO trailer carriers, while Lloyd Werft has received a contract to do additional work on the QE2.

Furthermore, Bremer Vulkan is building two containerships for American President Lines, while Howaldtswerke Deutsche Werft of Kiel, is constructing three containerships for APL. HDW recently christened the first two of the series.

Photo right: Wartsila-built Seaward

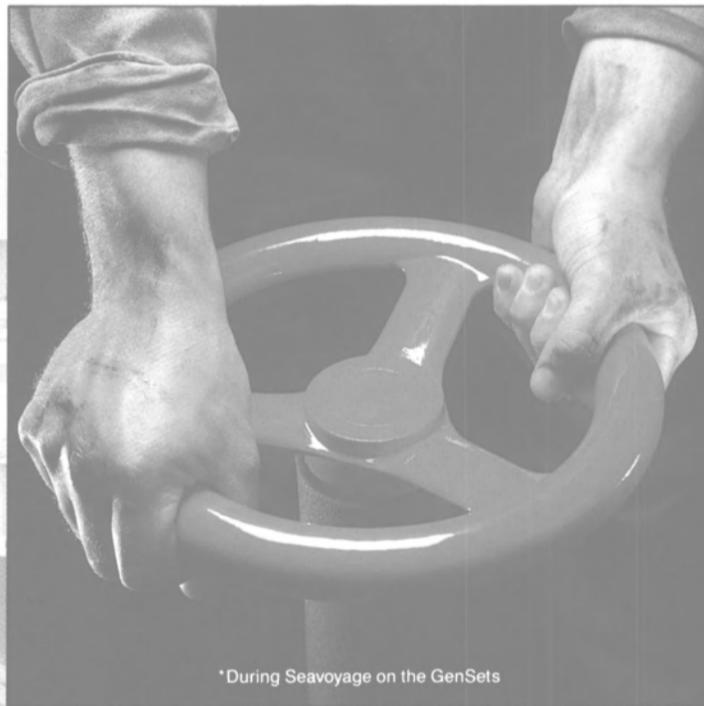
In the Netherlands, Damen Shipyards recently acquired the shares of dredging specialist De Groot Nijkerk Machinefabriek B.V. The takeover expands Damen's shipbuilding range. The yard now builds tugboats, workboats, fishing vessels, military vessels, offshore and trans-

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European Shipbuilding

(continued)

port (freight/passenger) ships, and dredgers.

Among the Scandinavian countries, Denmark's Burmeister & Wain Skibsværft A/S delivered three newbuildings in 1987, the product tankers M/T Nordflex, M/T Nordkap and M/T Chrisholm. The yard recently delivered a CPT 54E advanced product tanker, the K/S Margretheholm and christened the the M/T Fredholm, which is being built for the Danish partnership K/S Frederiksholm. She is one of two product tankers on order at the yard.

Denmark's Lindoe Shipyard is busy with the construction of a series of nine containerships for Maersk Line. The yard has already delivered the first 3,500-TEU containership.

The Norwegian shipyard Mjelle & Karlsen received an order at the end of 1987 for the \$15-million conversion of the U.S. ship Magnus Sea, which was used in the oil exploration market. The order called for the lengthening of the Magnus Sea by 40 feet and conversion into a fish processing vessel.

Another Norwegian yard, Ulstein Hatloe, performed a major conversion for a U.S. shipowner. Ulstein Hatloe converted a former containership into a 341-foot surimi factory trawler. Called the Northern Eagle, she is one of the world's largest surimi factory trawlers.

In addition, Ulstein Hatloe and Mjelle & Karlsen have teamed up with Brodrene Aa A/S to collaborate on a building program for the Royal Norwegian Navy. The three ship-

building groups will construct 10 new catamaran-type minesweepers.

Finnish shipbuilder Wartsila Marine Industries Inc., which was formed by the merger of Wartsila's and Valmet's shipbuilding divisions, with yards at Turku and Helsinki, has one of the largest orderbooks in Europe. As of June 1, 1988, Wartsila Marine had 30 vessels on order with deliveries scheduled into 1991. Among the orders were three 70,000-grt, 2,500-passenger cruise ships for Carnival Cruise Lines; three passenger ships from the owners of Viking Line (two from Rederi AB Slite of Sweden and one from SF Line Ab of Aland); and two 50,000-grt luxury cruise ferries from Efoa and Johnson Line.

The Turku yard of Wartsila recently delivered the 709-foot Seaward to Norwegian Cruise Line, a unit of Kloster Cruise Ltd. The 1,800-passenger ship was christened in special ceremonies in Manhattan. Wartsila has established itself as one of the world's leading designers and builders of luxury cruise ships.

Another Finnish builder, Rauma-Repola recently received an order for a 354-1/4-foot luxury liner for use in the Baltic, Mediterranean and Caribbean Seas. The luxury ship will carry about 300 passengers. Rauma-Repola is also constructing the second of a series of three 588-foot fish factory ships for V/O Sudoimport. Rauma-Repola operates three shipyards, with facilities at Rauma, Uusikaupunki and Savonlinna.

In southern Europe, spurred by its low labor costs, advanced facilities and ability to build sophisticated vessels, Yugoslavia is now Europe's leading shipbuilder based on both output and order backlog. Dur-



Panda, built by 3. Maj

ing 1987, Yugoslavian yards had an output of 16 ships totaling 350,000 grt. This represented an increase of 117,000 grt over the 1986 deliveries.

According to the latest figures from Lloyd's Register Shipbuilding Returns, Yugoslavia has orders totaling 564,590 gross tons under construction and 601,000 gt not yet commenced, for a total orderbook of 1,165,590 gt—third in the world behind South Korea and Japan.

One of the major Yugoslavian yards, Brodosplit shipyard in Split, has received a contract from C.Y. Tung for two 140,000-dwt tankers, which would be reportedly the largest ships ever built in the country. The yard has four other tankers on order for a Norwegian owner. The Split yard also received an order from SF Line of Finland for two 37,500-grt superferries. The first of the new generation Baltic cruise ferries, the Amorella, has completed her final sea trials and is expected to be in service shortly. Her sister vessel should be delivered next spring. The order represents an important step for Split in the passenger shipbuilding sector.

Last year, 3. Maj Shipyard, located at Rijeka, delivered the 83,000-dwt oil tanker/chemical carrier Panda to the East Asiatic Company of Denmark. The yard has orders for two more tankers of this type. Additionally, Teekay Shipping of Liberia has ordered two 111,000-dwt crude tankers, which are expected to be delivered at the end of 1988 and beginning of 1989.

Uljanik yard, located in Pula, is busy constructing a number of sophisticated ships. Among the newbuildings are four 16,200-dwt product carriers for the Soviet Union, two 23,000-dwt containerships for a domestic owner and two product carriers for Jugotanker.

In Italy, the Montefalcone yard of

Fincantieri Cantieri Navali Italiani has begun the construction of the first of two cruise ships ordered by Sitmar Cruises. Each of the vessels will be designed to accommodate 1,950 passengers.

Last year, Fincantieri yards completed 10 merchant vessels (a total of 208,600 gt). Among the vessels completed was the Micoperi 7000, reportedly the largest and most powerful heavylift semisubmersible ship in the world. The Micoperi 7000 is a semisubmersible crane barge with two hulls, each with a length of 541 feet and beam of 108 feet, supporting a 574-foot by 285-foot platform. The ship has two swivel cranes that can lift 7,000 tons each.

Fincantieri's Palermo yard is constructing a 475-foot rail/vehicle/passenger ferry for Italian State Railways. Fincantieri's Diesel Engine Division built the two six-cylinder medium-speed diesel engines that will supply propulsion power for the vessel, as well as the four six-cylinder diesels that will supply ship's service power.

The Genoa yard of Officine Marzotti has received a \$118.8-million contract from Costa Cruises to convert a container vessel into a luxury cruise liner. Under the contract, the 15,932-grt containership Italia would be converted for use in the Mediterranean market. Upon delivery in April 1990, she will be renamed the Costa Marina.

Greece's two largest shipyards, Hellenic Shipyards at Scaramanga, and Eleusis Shipyards have been kept busy with a number of domestic naval orders. In addition, Hellenic is involved in discussions with the Soviet Union to build a series of six reefer vessels. Hellenic recently launched the third in a series of four reefer vessels it is building for the USSR. ■

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Indal Technologies Wins \$10-Million Patrol Frigate Contract

Indal Technologies of Mississauga, Ontario, Canada, recently announced that it has received a \$10-million contract from Saint John Shipbuilding Limited of Saint John, N.B., to supply Recovery Assist, Securing and Traversing (RAST) systems and support services for the second batch of six new Canadian frigates.

The contract is a follow-on to a previous contract awarded in 1984 for RAST systems for the first six

frigates in the Canadian Patrol Frigate program. Those frigates are currently under construction. Delivery of the second set of RAST systems will begin in March 1990. The support services include program management, engineering support and system testing.

The RAST system will enable Canadian naval helicopters to operate safely on the frigates in gale force weather, day and night. The system allows helicopter pilots to land and take off from the deck of a pitching, heaving, rolling ship. Once the helicopter has landed, the system secures it to the deck, aligns it and then traverses it into and out of the ship's hangar.

Under Seas Defense '88 To Be Held In San Diego On October 3-6

Under Seas Defense '88 (USD), an international exposition and conference on underwater warfare technology, will be held in the Holiday Inn at Embarcadero, San Diego, Calif., from October 3-6.

Under Seas Defense '88 is the second annual exposition and conference in this series. It will feature exhibits and technical presentations on various aspects of submarine, antisubmarine, mine and mine countermeasures warfare technology.

Last year, at USD '87, also held in San Diego, more than 1,500 people registered and attended. Participation is expected from the U.S., as well as North American Treaty Organization (NATO) and Western-aligned nations.

The keynote speaker for the technical conference on Tuesday, October 4, will be Capt. Roger M. Venables of the Royal Navy. He will speak on the importance of allied cooperation in meeting the antisubmarine warfare challenge. This chiefly involves 650 operational Soviet submarines that are constantly improving in noise reduction techniques and with greater weapons load and launch capabilities. Captain Venables will also be the featured banquet speaker the evening of October 5 at the Admiral Kidd Club, Naval Training Station, San Diego.

At present, Captain Venables is Captain (S/M), First Submarine Squadron at HMS Dolphin, Gosport, U.K. His command includes 10 submarines and the Royal Navy Submarine School, which also accommodates the famous "Perisher Course" for future submarine commanding officers.

For further information on USD '88, contact: USD '88, P.O. Box 368, Spring Valley, Calif. 92077; telephone: (619) 465-2262; telex: 530111 WE INC UD, ELN 62772181.

Alfa-Laval Opens New Service Center

Alfa Laval Separator Co., recently announced the opening of a new service and repair facility on the West Coast.

The new service center, which will be located in Stanton, Calif., is the latest addition to Alfa-Laval repair facilities throughout the U.S. and will serve the needs of Alfa-Laval customers within the western region.

The address of the facility is: Alfa-Laval Separator Co., Repair Facility, 10559 Dale Street, Stanton, Calif. 90680; telephone: (714) 527-3030.

Level Switches For Use In 55-Gallon Drums Available In 3 Versions From GEMS

GEMS Express Service now offers convenient level switches to fit

a 3/4-inch bung fitting on 55-gallon drums. Three versions are available for normal six to eight weeks' delivery.

The high- and low-level model features two floats in a single unit for monitoring both high and low levels. Separate, single-float units for low-level and high-level use are also offered.

The units feature simple opera-

tions: a magnet-equipped float, moving directly with the liquid level, actuates a hermetically sealed switch within the unit's stem. When combined with GEMS relays, they can operate remote pumps and other equipment.

These switches withstand pressures to 100 psig and temperatures to 180 degrees F. Pilot duty rating is 20 VA, 120-240 VAC.

Used with GEMS annunciator cubes, the status of four switches can be read simultaneously from a single unit. Or, up to five switch closures can be monitored using a GEMS panel indicator.

For more information and free literature on level switches from GEMS,

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Wallenius Transferring Large Car Carrier To U.S. Flag

Wallenius Lines, Stockholm, Sweden, recently announced that the 52,000-grt pure car/truck carrier (PCTC) Faust will transfer from the Swedish flag to the U.S. flag later this year.

Faust is one of the largest and

most modern vessels in the Wallenius fleet. She can carry 6,380 cars or 3,200 cars and 540 trucks and is among the largest PCTCs in the world.

Christer Olsson, executive vice president of Wallenius Lines, said: "Faust operates regularly on our routes to and from the United States and is therefore a suitable candidate for conversion to the U.S. flag. There is no legal requirement for us to fly the U.S. flag, but con-

sidering the significant importance of the U.S. market for our business, we find it commercially logical that the U.S. flag is represented in our fleet."

The transfer of the ship will require some conversion work to meet U.S. regulations. A yard has not been chosen to perform the conversion work, which is expected to be completed by the end of 1988 or the beginning of 1989.

Bechmann Named Manager Of Ship Repair At Bender Shipbuilding

Robert A. Beckmann has been named manager of ship repair at Bender Shipbuilding & Repair Co., Inc., Mobile, Ala., it was recently announced by **Thomas B. Bender Jr.**, president of the company. Mr. Beckmann has relocated to the company's headquarters in Mobile, from Brooklyn, N.Y., where he had been associated with Coastal Drydock & Repair Corp. He brings to Bender over 14 years of experience in the ship repair industry.

Non-Ferrous Bolt Offers Free Literature On Fasteners

Non-Ferrous Bolt & Mfg. Co. of Las Vegas, Nev., is offering free literature on the standard and non-standard fasteners produced by the company in high temperature and corrosion resistant metals.

The company is capable of producing hex heads, nuts, sockets, carriage bolts, T-head bolts, square heads, penta heads, special studs, eyebolts, pipe plugs and many more styles from over 100 grades of stainless steel and exotic metals.

The literature points out that Non-Ferrous Bolt produces fasteners to customer specifications or to recognized ASTM standards, and they are capable of manufacturing to military and federal specifications.

Also brought out is that Non-Ferrous uses induction heating as opposed to open furnace and other methods because, according to the company, with this heating process, raw material can be heated to precisely the desirable forging temperature for each particular grade of material, and the temperature control that induction heating allows assures optimum forging quality.

For more information and free literature from Non-Ferrous Bolt & Mfg. Co.,

Circle 45 on Reader Service Card

MarAd Names Creelman Acting Deputy Maritime Administrator

William A. Creelman was recently named Acting Deputy Maritime Administrator at the Maritime Administration, replacing **Elaine Chao**. Earlier this year, Ms. Chao left MarAd to become the chairman of the Federal Maritime Commission (FMC).

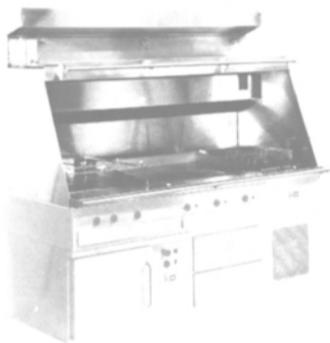
Since 1985, Mr. Creelman had served as the Deputy Maritime Administrator for Inland Waterways and Great Lakes. Prior to joining MarAd, he served for several years as the president of National Marine Services, an inland waterways vessel operator. He was also chairman of the board of American Waterways Operators (AWO) a national trade association for the domestic waterways industry.

Maritime Reporter/Engineering News

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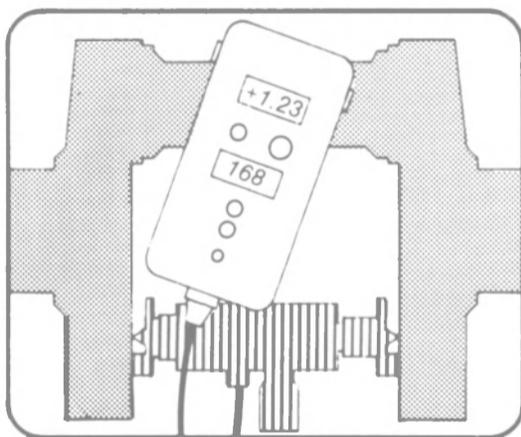
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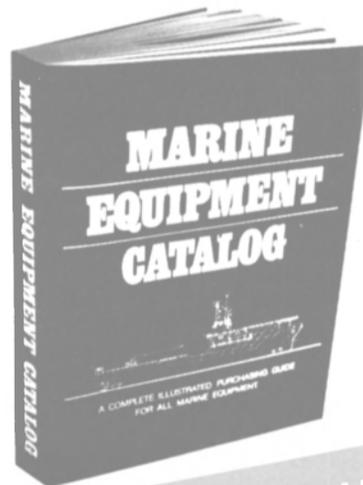
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Tidewater Marine Adds Four Vessels To Fleet At Cost Of \$5 Million

Tidewater Inc.'s marine division, Tidewater Marine Service, Inc., has acquired four vessels from the Maritime Administration at an aggregate cost of approximately \$5 million.

According to Tidewater Marine president **Richard M. Currence**, the two 195-foot medium-horsepower towing/supply vessels and two 180-foot supply vessels were built in the early 1980s and feature state-of-the-art equipment and capabilities.

Mr. Currence said Tidewater Marine is continually modernizing its fleet by eliminating older, non-competitive vessels and acquiring newer ones featuring up-to-date capabilities. "This is the company's second vessel package purchase in six months," he added. "Five vessels were purchased in late 1987."

Tidewater Inc. owns and operates one of the largest fleets of vessels supporting the international offshore oil and gas industry.

For more information and free literature on Tidewater,

Circle 21 on Reader Service Card

B + H Bulkships Purchases 19 Vessels

The Bermuda-based Bergvall + Hudner Group recently announced that its affiliate, B + H Bulkships Acquisition Corp., had finalized the purchase of 19 vessels from Canadian Pacific (Bermuda) Limited.

The 19 vessels purchased by B + H Bulkships include eight handy-size bulk carriers, five Panamax bulk carriers and six product tankers. Deliveries of the vessels are expected to be completed by September 1988.

Worldwide Installations Featured In New Marine Travelift Folder

Installations of 100-, 150-, 250-, and 500-ton-capacity Marine Travelift Mobile Boat Hoists worldwide are featured in an updated color folder published by Marine Travelift.

Featured installations include the company's 500BFM at Abu Dhabi, the world's largest mobile boat hoist with a 1,000,000-pound capacity, ideal for shipbuilding and maintenance. It handles modules, hulls and complete boats.

Marine Travelift's 100BFM, 150AMO and 250AMO hoists are one-man operated and require only a minimum haulout crew. They are ideal for workboats, fleet boats, barges, military boats and large pleasure craft. Installations in a variety of locations are included.

For a copy of the folder, Form No. 3188, or for specifications on Marine Travelift's complete line of mobile boat hoists with capacities from 15 to 500 tons,

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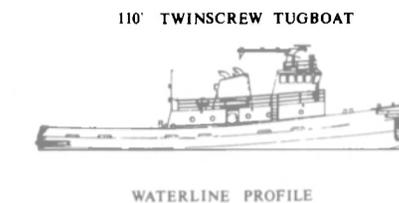
August, 1988

Trinity Marine Group To Build 110-Foot Harbor Tug For Chevron

The Trinity Marine Group, New Orleans, La., has been awarded a contract to build a 110-foot harbor docking tug for Chevron U.S.A., Inc.

The new vessel will be a twin-screw, double rudder, diesel-powered tug, with Kort backing nozzles, but with the capability of ocean towing service.

The all-steel vessel will be 110 feet long, with a 34-foot beam, and 16-foot molded depth. She will be powered by two 16-645E General Motors EMD diesel engines developing 1,950 hp each at 900 rpm. They will drive two, four-bladed, 98-inch diameter stainless steel propellers through Reinjtes reverse/



reduction gears with a ratio of approximately 4.0:1. The propellers will be placed in two 99-inch diameter model 37 Kort nozzles recessed into the hull to minimize tending below the baseline.

The vessel will be equipped with a hydraulic steering system supplied by Engine Monitor, Inc., Harahan, La., and there will be two control stations, one in the pilothouse, and one aft on the second deck.

Electrical power will be provided by two 99-kw generators driven by two Detroit Diesel 6-71 engines. One of the generators will also serve a 1,000-gpm Elkhart fire monitor mounted atop the pilothouse. It will be supplied by two 1,500-gallon storage tanks. A USCG-approved Halon flooding system will protect the engine room and four fire stations will be located throughout the boat.

Towing will be provided by 23,000-pound pull and 18,000-pound pull McElroy capstans mounted forward and aft.

The main deck will have living quarters for six, a galley and mess facilities.

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Tow hook	Washington Chain
Plumbing fixtures	Crane
Sanitary water pressure set	Myers
Heat exchanger	Young
Air compressors	Quincy
Lighting	Pauluhn
Spotlights	Carlisle-Finch
Refrigerator/freezer	Kenmore
Electric range	Kenmore

The tug, which will be under 200 gross registered tons, will be built at one of six Trinity Marine Group yards—Halter Marine, Inc., at Moss Point, Miss. and Lockport, La.; Moss Point Marine, Escatawpa, Miss.; Equitable Shipyards, Inc., at New Orleans, La. and Madisonville, La.; and Gretna Machine and Iron Works, Inc., Harvey, La. The Trinity Marine Group is owned by Dallas-based Trinity Industries.

For free literature detailing the shipbuilding services of the Trinity Marine Group,

Circle 27 on Reader Service Card

Honeywell Awarded AN/UYS-1 Module Production Contract

Honeywell, Everett, Wash., has been awarded a letter contract by the U.S. Navy to begin production as a second-source supplier of electronic modules for the U.S. Navy's FY 1988 AN/UYS-1 standard signal processor requirements.

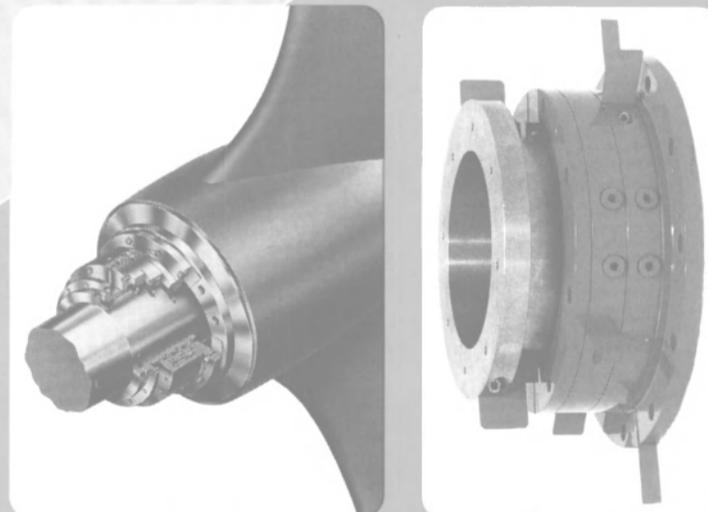
Honeywell was awarded the letter contract for 30 percent of the AN/UYS-1 module baseline quantity and 80 percent of an option quantity for FY 1988 requirements. Production will begin this fall at Honeywell's microelectronics assembly facility at the Marine Systems Division, Everett, Wash., with deliveries scheduled for early next year. International Business Machines (IBM) is the first-source supplier of the units.

The AN/UYS-1 is used to process sensor signals in real time for a number of tactical programs and is installed in Navy submarines, surface ships, helicopters, fixed-wing aircraft and land-based systems.

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OUTSTANDING SHALLOW-DRAFT PASSENGER VESSELS

With U.S. shipyards busy building and converting a number of passenger vessels, cruise boats and ferries, the editors of MR/EN have put together a feature on 10 of the most notable shallow-draft passenger vessels delivered in the past year, which include nine newbuildings and one conversion.

ANNABEL LEE Service Marine

Service Marine Industries, Amelia, La., recently christened a 600-passenger dinner/cruise boat for operator Heritage Cruise Lines, Richmond, Va.

The M/V Annabel Lee, which will cruise on the James River out of Richmond, Va., is 108 feet long, has a beam of 34 feet, draft of 3 feet 9

Photos: (clockwise from top left): Spirit of Chicago (Blount Marine); Island Countess (Freeport Shipbuilding); Vineyard Spray (Gladding-Hearn); and Catalina Flyer (Nichols Bros).

inches and hull depth of 7 feet. She is powered by a pair of rebuilt GM8V-92 diesel engines rated at 310 hp each at 1,800 rpm furnished by Johnson's Diesel Service. Electrical power is provided by two 99-kw KATO generators driven by rebuilt GM6-71 diesel engines.

The cruise boat features two enclosed decks and an open top deck. She is fully air conditioned by four 10-ton Carrier air-cooled units, with 15-kw heating each, furnished by Johnston Brothers Enterprises, Inc. The Annabel Lee is carpeted and will feature live bands, dancing and

ANNABEL LEE Equipment List

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

full bar service, as well as be able to seat over 400 passengers for dinner.

Tom Hensley, owner and president of Service Marine Industries, Inc., called the Annabel Lee "a 90-day miracle," since that's how long the vessel took to construct.

CATALINA FLYER Nichols Brothers

Nichols Brothers Boat Builders, Whidbey Island, Wash., have delivered reportedly the largest high-speed passenger catamaran built in the U.S. to Catalina Passenger Service, for service between Newport Harbor and Catalina Island in southern California.

The 118-foot, 500-passenger ferry, the Catalina Flyer, is the 10th of a series of passenger catamarans built by Nichols Brothers. Like the other vessels in the series, the Catalina Flyer is a Catamarans International-designed boat. Nichols

Brothers and Gladding-Hearn Shipbuilding, Somerset, Mass., are the only U.S. yards licensed to build the Australian-designed boats. Nichols Brothers believes that the Catalina Flyer could be the largest high-speed catamaran built to date in terms of both size and passenger capacity.

The Catalina Flyer, which replaces the Catalina Holiday on the Newport-to-Catalina route for Catalina Passenger Service, is powered by two specially lightened 2,000-hp Caterpillar 3516 TA diesel engines coupled to Reintjes WVS-1023 2.538:1 reduction gears and fitted with Lips three-bladed Cunial-bronze propellers. The Catalina Flyer's auxiliary power is supplied by two 40-kw generators driven by two John Deere engines. She has a beam of 40 feet and a draft of 8 feet.

According to **Bob Black**, manager of Catalina Passenger Service, an increasing demand for speed on the Catalina route prompted the

order for the catamaran and he expected that, at her speed of 27 knots, the Catalina Flyer would cut travel time in half.

**CATALINA FLYER
Equipment List**

Main engines (2)	Caterpillar
Generator engines	John Deere
Reduction gears	Reintjes
Propellers	Lips
Propulsion controls	Systems Engineering
Steering	Hough Marine
Starters	Klockner-Moeller
VHF radios	ICOM
Radars	Furuno
Autopilot	Sperry
Loran	Furuno
Flasher	Ross
Wiring & light fixtures	Hardware Specialty
Sound entertainment system	Bogen
Coatings	Hempel

**EAGLE
McDermott**

McDermott Shipyard, New Orleans, La., has delivered a 1,475-passenger/vehicle ferry to the Woods Hole, Martha's Vineyard and Nantucket Steamship Authority in Massachusetts.

The 3,000-horsepower, twin-screw vessel, named the Eagle, is 233 feet long, with a 60-foot beam, loaded draft of 9 feet 9 inches and depth of 16 feet. She is also designed to also carry 70 automobiles or 37 automobiles and six 18-wheel trucks and has a displacement of 1,778 long tons. The ferry will provide service between Hyannis and the offshore islands of Martha's Vineyard and Nantucket.

The Eagle is propelled by two 1,500-hp GM 12-645E6A diesel engines and equipped with a Harbor-master bowthruster. She has a loaded speed of 12 knots. The Eagle is equipped with two Reintjes WAV 1830 reduction gears and two Coolidge propellers. Three 185-kw Caterpillar 3406BT diesel power generators supply the vessel's electrical power along with a 135-kw emergency generator, Caterpillar D-3306BT.

McDermott Shipyard, a division

**EAGLE
Equipment List**

Main engines (2)	GM
Propellers	Coolidge
Reduction gears	Reintjes
Main generators	Caterpillar
Emergency generator	Caterpillar
Bowthruster	Harbor-master
Motor controls	Westinghouse
Engine room & vessel automation	Engine Monitor
Switchgear	Trinity Power
Gyrocompass	Sperry
Radars	Raytheon
UHF radio	Raytheon
Sound-powered telephones	
Public Address system	Hose-McCann
Firefighting system	Bogen
Heating & A/C	Halon
O/W separators	Bailey/Burnham
Anchor windlasses	Pace
Raw water, bilge, ballast & fire pumps	New England Trawler
	Crane Denning
Fuel, lube & hydraulic pumps	Gorman Rupp
Air compressors	Ingersoll-Rand
Bow & stern doors	MacGregor-Navire
Elevators	Unidynamics
F/O purifier	Alfa Laval

of McDermott Marine Construction, builds and repairs special purpose Navy ships, ferries, large tugs, supply boats, barges, dredges, and a wide variety of oceangoing work vessels.

**HENRIETTA II
Superior Boat Works**

Superior Boat Works, Greenville, Miss., has delivered the 149-passen-

ger paddlewheeler Henrietta II to Cape Fear Riverboats, Inc., Wilmington, N.C.

The 85-foot excursion boat, with a beam of 26 feet, offers sightseeing luncheon or dinner tours on the Cape Fear River near Wilmington.

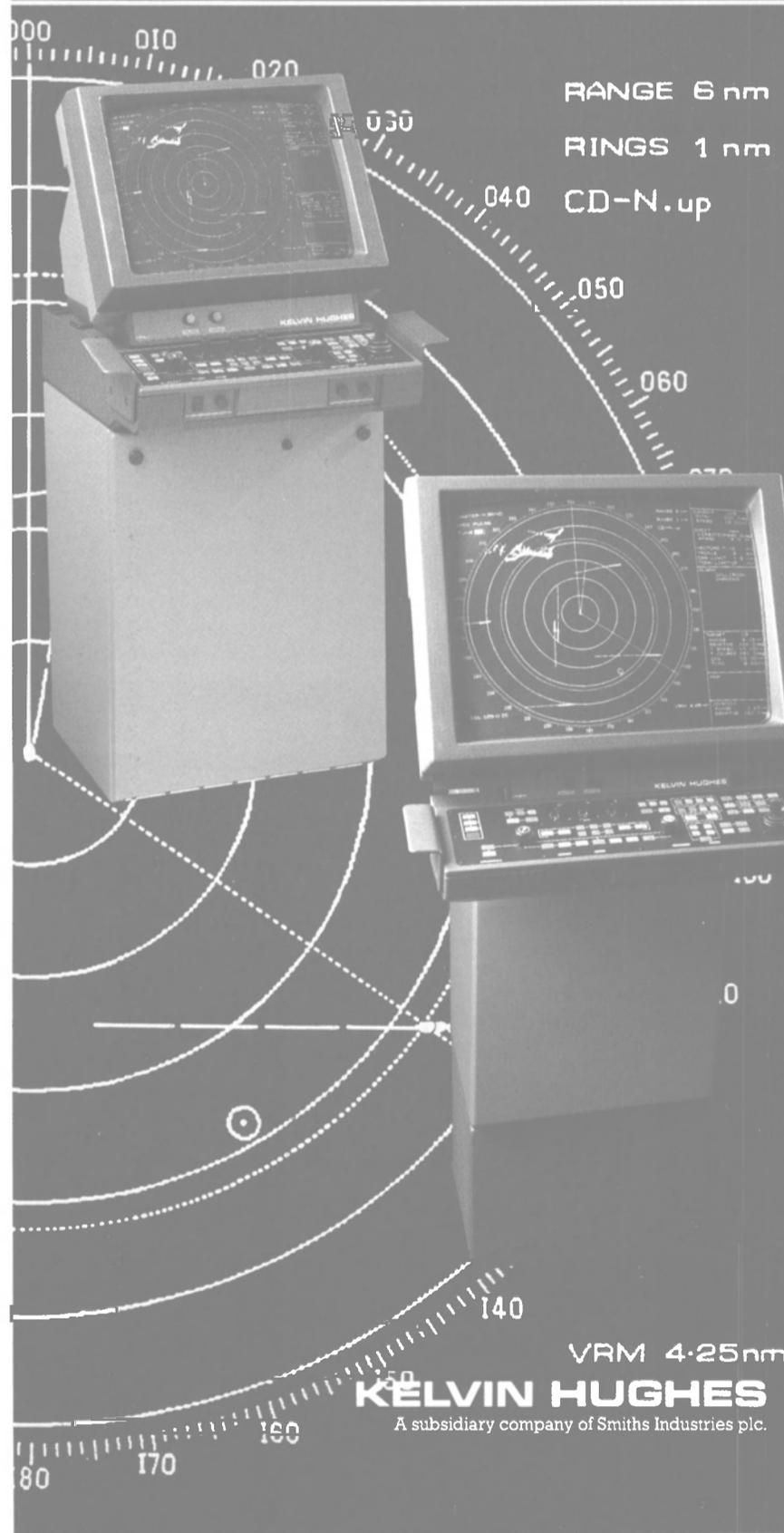
Decorated inside and out to resemble a vintage paddlewheeler, the Henrietta II's propulsion system is a pair of Cummins 6BT5.9 diesel engines, supplied by Cummins Mid-South, Jackson, Miss., which power

hydraulic pumps that boost hydraulic pressure sufficiently to drive two hydraulic motors that turn a 16-foot-diameter split paddlewheel. Each diesel engine develops 134 hp at 1,800 rpm. A pair of Newage 35-kw generators are also powered by the pair of Cummins engines. Both are keel cooled using Fernstrum equipment.

The hydraulic system was de-

(continued)

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The new generation *Concept* radar systems from Kelvin Hughes provide a unique and flexible approach to ergonomic bridge layout.

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Outstanding Shallow-Draft

(continued)

signed and installed by Skipper Hydraulic, Gretna, La.

The Henrietta II features an enclosed main deck cabin and a covered second deck. The pilothouse is elevated a few feet above the second deck to provide the pilot with excellent visibility.

ISLAND COUNTESS Freeport Shipbuilding

Freeport Shipbuilding & Marine Repair, Inc., Freeport, Fla., has delivered the passenger vessel Island Countess to its Upstate New York operators Empire Boat Tours.

The 101-foot-long Island Countess has a beam of 27 feet, a full load draft of 5 feet and a passenger capacity of 523. She is propelled by two 300-hp Detroit Diesel 8V92 diesel engines fitted to Michigan Wheel four-bladed bronze 34-inch-diameter propellers via Allison model MH reduction gears and has a speed of 12 knots.

U.S. Coast Guard-certified for excursion service 20 miles offshore, the Island Countess's two enclosed decks are fully air conditioned by two 5-ton water to air heat pumps. She is operated in the Thousand Islands Region of the St. Lawrence Seaway by Empire Boat Tours on sightseeing/excursion tours, party cruises, theatre, comedy, luncheon and dinner cruises. She is able to seat 344 passengers for her luncheon and dinner cruises.

In speaking about the Island Countess, Paul Quackenbush, president and owner of Empire Boat Tours, said, "We are very pleased with it and our customers are very pleased with it. Our luncheon and dinner cruise operations are soaring."

The Island Countess, sister vessel of the Island Dutchess, was designed by Mr. Quackenbush and Jim Murray, president of Freeport Shipbuilding. She was custom-built by Freeport Shipbuilding, which entered the boatbuilding business in April 1981.

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ISLAND COUNTESS Equipment List

Main engines (2)	Detroit Diesel
Propellers	Michigan Wheel
Generator engines	John Deere
Generators	Lima
Reduction gears	Allison
Engine controls	Mathers
Steering controls	Wagner
Bowthruster	Seamaster
VHF radios	Uniden
Radar	Raytheon
Compass	Ritchie
Depth sounder	Data Marine
Fir pump	Crown
Bilge pump	Fomar
Sewage pump	Hydromatic
Shafts	Armco Aquamet

MASSACHUSETTS Gulf Craft

Massachusetts Bay Lines, Inc., Hingham, Mass., recently took delivery of the 345-passenger commuter service boat M/V Massachusetts at ceremonies at Rowes Wharf in Boston.

Built by Gulf Craft, Inc., Patterson, La., the M/V Massachusetts has an overall length of 95 feet, beam of 28 feet and draft of 6 feet. She is powered by four Detroit Diesel 12V71TI main engines and is fitted with Twin Disc reduction gears and four Columbian Bronze propellers and will cruise at speeds of about 22 knots. Her auxiliary power is provided by two Detroit Diesel

371 diesel engines and two KATO 30-kw generators.

According to Massachusetts Bay Lines president **William Spence**, the vessel is expected to provide water transportation service to hundreds of commuters from Hingham to Boston on a daily basis.

The "new generation" Massachusetts, which is constructed of aluminum, is fully heated and air conditioned on all her decks by Carrier air conditioning and heating systems. She has a partially open upper deck forward and aft and is equipped with spacious booth seats and full handicapped access.

Besides commuter service, the Massachusetts, which is the sixth boat in the Massachusetts Bay Lines fleet, will be available for sightseeing and excursion cruises, as well as business meetings.

**MASSACHUSETTS
Equipment List**

Main engines (4)	Detroit Diesel
Propellers (4)	Columbian Bronze
Generator engines (2)	Detroit Diesel
Generators (2)	KATO
Reduction gears (4)	Twin Disc
Engine controls	Morse
Steering controls	Hydraulics/Gulf Craft
VHF radios	Raytheon
Radar	Furuno
Compass	Danforth
Loran	Furuno
Loudhailer	Cybernet
A/C & heating units	Carrier
A/C pumps	STA-RITE
Bilge pump	Peabody Barnes
Fire pump	Berkley
Fresh water pump	Sears
Hydraulic pumps	Hydreco
Sewage pump	Peabody Barnes
Sanitation pump	Peabody Barnes
Water heater	Kenmore
Battery chargers	Lamarche
Engine room blowers	LF Gaubert
Life floats	Jim Buoy
Water lights	Guest

**MAUI PRINCESS
Aluminum Boats**

Aluminum Boats, Inc., Crown Point, La., delivered the 117-foot converted passenger boat Maui Princess to Sealink of Hawaii, Inc., a Maui passenger vessel operator.

The conversion of the 149-passenger Maui Princess by Aluminum Boats involved the extension of the passenger compartment by 50 feet aft, the addition of all new seats, 7-1/2 tons of air conditioning equipment and an open promenade deck for 100 passengers above the passenger cabin. She was converted from the 110-foot crewboat Sabine Pass. To provide easier access, sliding port and starboard cabin doors were installed. Also a total of 7 feet was added to the stern for a combination dive/swim and loading platform.

Because the converted boat has the multipurpose role of cruise vessel, ferry and freighter, airline-type seats were chosen and mounted on tracks for quick removal and conversion of the passenger cabin into a cargo bay. When carrying both passengers and cargo, the vessel can haul up to 10 tons of cargo. When in her all-cargo mode, the Maui Princess can haul up to 60 tons of cargo.

Aluminum Boats rebuilt the vessel's Detroit Diesel 12V71 diesel engines and overhauled her two Delco 40-kw generators.

**SPIRIT OF CHICAGO
Blount Marine**

Blount Marine Corporation, Warren, R.I., recently delivered the 600-passenger elegant dinner/excursion

boat M/V Spirit of Chicago to Holiday Cruise VI, Inc., a subsidiary of Cruise International, Norfolk, Va.

The 192-foot Spirit of Chicago, with a beam of 36 feet and loaded draft of 7 feet, is powered by a pair of Detroit Diesel 12V71TI diesel engines. The vessel is operating on Lake Michigan from the Navy Pier and has three fully enclosed, carpeted, climate-controlled decks.

She joins five sister ships currently in the Cruise International fleet.

In addition, **Richard D. O'Leary**, president of Cruise International, recently announced plans to construct five more dinner/excursion vessels over the next two years. Contracts for the first two of these vessels have been awarded to Blount Marine.

Luther H. Blount, president and founder of the shipyard, has over 40 years' shipbuilding experi-

(continued)

**GULF CRAFT INC.
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The "MV Massachusetts" was designed and constructed by Gulf Craft Inc. for Mr. William Spence, President of Massachusetts Bay Line.

The unique design of this 300 passenger vessel incorporates the versatility of a fast and efficient commuter vessel with dining elegance in luxurious cruising comfort.

The "MV Massachusetts" is 100' long, has a beam of 25', draft of 5.5', and a hull depth of 8.5'. She is powered by four (4) Detroit Diesel model 12V71T1 diesel engines, coupled with Twin Disc 514C, 2:1 ratio reduction gears, producing 720 SHP each at 2300 RPM. The four V12's produce speeds up to 28 M.P.H., thus enabling her to function as a fast commuter vessel. Electrical power is provided by two (2) 30 KW, Kato generators driven by

Detroit Diesel model 3-71 diesel engine.

Two (2) special features of the "MV Massachusetts" are the main and upper decks. The main deck is fully enclosed while the upper deck is enclosed midship and provides open and spacious observation and entertainment areas both forward and aft.

Both decks offer dinette seating, a full service bar, wall to wall carpeting and sliding glass windows. A state of the art climate control system guarantees year round passenger comfort.

For more information regarding Gulf Craft's services and facilities, write or call

Gulf Craft, Inc.

3904 Highway 182, Patterson, LA 70392.
Telephone: (504) 395-5254.

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Outstanding Shallow-Draft

(continued)

ence, particularly in passenger ship construction. While in France in the late 1960s, he studied the operation of the Bateaux Mouches, a small dinner boat enterprise in Paris. The Bateaux Moches served as a model for Blount's first dinner boats, the Le Bateaux fleet, which operated

out of Washington, D.C., and Fort Lauderdale, Fla. Nearly 20 years later, the Spirit of Chicago takes her place as the largest and most elegant of 25 dinner/excursion vessels, conceived, designed and constructed by Blount Marine.

SPIRIT OF CHICAGO Equipment List

Main engines (2)	Detroit Diesel
Auxiliary engines	Detroit Diesel
Generators (2)	Detroit Diesel
Reduction gears	Twin Disc

Propellers	Columbian Bronze
Bowthruster engine	Detroit Diesel
Engine controls	Mathers
Keel coolers	Blount Marine
Stuffing boxes	Blount Marine
Steering system	Wagner
Main shaft bearings	Rexnord
Stern bearings	BFGoodrich
Freshwater pressure system	Peabody-Barnes
Sanitary system	Peabody-Barnes
Bilge pump	JABSCO
Fire pump	Gorman-Rupp
Wash-down pump	Gorman-Rupp
Radar	Furuno

VHF radiotelephones	Raytheon
Depth sounder	Data-Marine
Compass	Dirigo
Horn	Kahlenberg
Searchlight	ITT JABSCO
A/C & heating	Dunham-Bush

VINEYARD SPRAY Gladding-Hearn

Gladding-Hearn Shipbuilding, Somerset, Mass., has delivered the 300-passenger, high-speed ferry Vineyard Spray to Bay State Cruises.

The triple-deck aluminum vessel has an overall length of 82-1/2 feet, beam of 28-1/2 feet and draft of almost 7 feet. She is powered by Deutz MWM TBD604B V-12 diesel engines rated at 1,690 bhp at 1,800 rpm each, which are fitted to two Lips five-bladed propellers via two 5-inch diameter stainless steel propeller shafts and Reintjes WVS 842P marine gear boxes.

The Vineyard Spray, which can reach speeds in excess of 30 knots, is International Catamaran (Australia)-designed and has two enclosed lounges with upholstered seats, pay phones, and a bicycle rack on the upper deck. She is used on daily round trips from Boston to Vineyard Haven in Martha's Vineyard. The entire trip takes about three hours.

VINEYARD SPRAY Equipment List

Main engines (2)	Deutz MWM
Reduction gears	Reintjes
Generators	Lister
Propellers	Lips
Steering	Hough Marine
Controls	Morse
Compass	Ritchie
Radar	Furuno
Loran	Digital Marine
Autopilot	Robertson
VHF radio	ICOM
Depth sounder	Datamarine
Horn	Buell
Bilge pump	Jabsco
Cellular phone	Motorola
Cellular pay phone	Railfone
Navigation lights	Aqua-Signal
Battery charger	Professional Mariner
Searchlight	Phoenix
Extinguishers	Walter Kidde
Halon system	Walter Kidde
Wipers	American Bosch
Seating	Marine Interiors
Muffler	Cowl
Paint	Awlgrip
Paint	Sterlin
Paint	International Paint

YUKON QUEEN Munson Manufacturing

Munson Manufacturing, Inc., Edmonds, Wash., recently delivered the custom-built, welded aluminum Alaskan excursion boat Yukon

YUKON QUEEN Equipment List

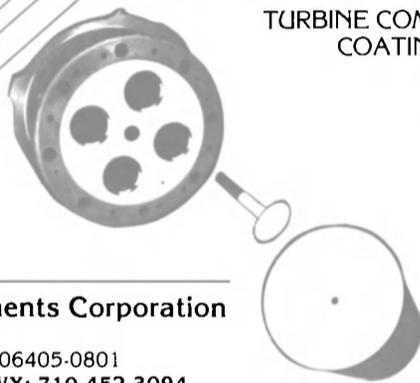
Main engines (3)	Triple Luger
Marine jets	Hamilton
Generators (2)	Northern Lights
Engine controls	Morse
Steering controls	Wagner
VHF radio	ICOM
Radar	Furuno
Compass	Coastal Navigator
Loran	Morrow
Fuel filters	Racor

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Queen to Holland America Line-Westours.

The Yukon Queen, with an overall length of 64 feet, a beam of 17 feet and draft of 2 feet 9 inches, is designed to comfortably carry 49 passengers. Six-cylinder, four-cycle, turbocharged, aftercooled Triple Luger L6140As, manufactured by Alaska Diesel Electric, rated for 550 hp at 2,100 rpm, and coupled to three Hamilton 1031 jets, power her to speeds of 30 knots. Aside from

E.N. Bisso And Son Add Powerful Tug To Fleet

A newly named docking tugboat, described by its owners as the most powerful such craft in the port of New Orleans, has been commissioned by E.N. Bisso and Son, Inc., tug operators and marine contractors. The M/V J.A. Bisso II, formerly the Evelyn Edwards, has gone into service after minor renovation following its acquisition in 1987.

The tug measures 125 feet in length with a 29.6-foot beam. Two Fairbanks-Morse 10-cylinder opposed piston engines produce 4,600 horsepower at 900 rpm, driving the

the main propulsion system, the engine compartment holds two auxiliary 8-kw Northern Lights diesel generators, six 8-D batteries for the 24-volt electrical system, and one battery for the 12-volt emergency electrical system. She will have a range of about 450 miles.

Designed to carry up to 300 cubic feet of luggage, the Yukon Queen operates on the Yukon River, from Dawson City to Eagle in Alaska. ■

boat through Falk gears with a 2.5 to 1 ratio. The engines were overhauled by Bisso personnel. Changes included addition of an engine monitoring and alarm system, a new stack, installation of bow bumper and side fenders, and a new Microphor marine sanitation system.

The tug will be used primarily in ship docking on the Mississippi River from the river's mouth to Baton Rouge. It is equipped for hawser towing and offshore work.

The J.A. Bisso II was built in New Iberia, La., in 1965. E.N. Bisso and Son operate 12 tugs.

For more information and free literature on E.N. Bisso and Son, Circle 25 on Reader Service Card

Stauff Introduces New Full-Port High-Pressure Ball Valve

Stauff Corporation recently announced the availability of their new high-flow, high-pressure, 1/4-turn shut-off valve.

The company's new range of direct mount SAE flange valves were developed especially for rigorous applications that require high performance ball valves.

Features of Stauff's new valves are: up to 5 inches with working pressures up to 3,000 psi; up to 2 inches with working pressures up to 6,000 psi; SAE flange connections for easier installation and repair; no threads in fluid path for reduced leakage; all body parts are machined steel for reduced torque operation and problem-free high-pressure switching; special self-lubrication seals also reduce operating torque; and minimum safety factor of 3:1.

Stauff Corporation, with U.S. headquarters in Waldwick, N.J., has manufacturing facilities throughout the world. Stauff is a leading producer of superior quality hydraulic

components and accessories. Stauff products are available via a network of distributors and warehouses in all industrial countries.

For more information and free literature on Stauff's new valves,

Circle 55 on Reader Service Card

Navy Awards \$2.3-Million Contract To Southwest Marine

Southwest Marine, Inc. has been awarded an advanced planning contract for \$2.3 million for the destroyer USS O'Brien (DD-975) by the U.S. Navy. The contract contains an option worth \$21.9 million for production work. The Navy will exercise the option based on availability of funds.

The repair period for the work is November 14, 1988 to November 1, 1989. The work, which includes an upgrade of the combat systems and a complete power plant overhaul, will be performed at the company's San Diego Division.

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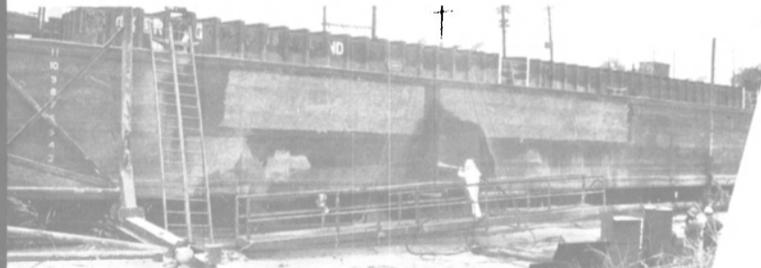
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Newport News Awarded Contracts Totaling \$3.7 Billion To Construct Two Carriers

Newport News Shipbuilding has been awarded a \$2.9-billion modification to an existing contract to provide for the construction of two Nimitz Class aircraft carriers. The total target price for the construction, including the original contract award of \$724 million, amounts to nearly \$3.7 billion.

The earlier contract, signed in March, was for the designing and planning for construction of the two new aircraft carriers and for purchase of long lead time materials. Together with the \$612-million Navy contract awarded to Newport News for two Los Angeles Class attack submarines, this award raises the shipyard's backlog to \$8.7 million.

Edward J. Campbell, president and chief executive officer of Newport News Shipbuilding, said: "We are most pleased with this award. It will enable our trained and experienced carrier construction work force to go from one ship to the

next without interruption, allowing us to build them in the most cost-efficient manner. This award, along with current submarine construction contracts, will ensure continuation of stable employment at the shipyard for the next several years."

The two new Nimitz Class aircraft carriers are designated CVN 74 and CVN 75. CVN 74 is scheduled for delivery in 1996, and CVN 75 in 1998. When christened, CVN 74 will be named the John C. Stennis.

Newport News Shipbuilding is also currently building two other Nimitz Class carriers, the Abraham Lincoln (CVN 72) and the George Washington (CVN 73), and has contracts for the construction of 11 Los Angeles Class attack submarines.

For free literature giving full information on the facilities and capabilities of Newport News Shipbuilding,

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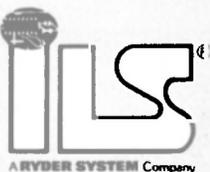
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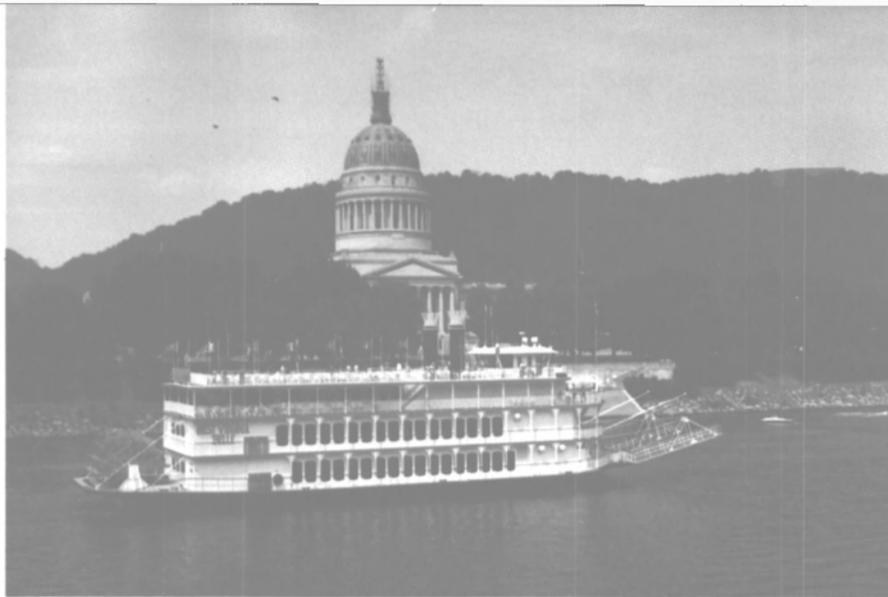
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The riverboat West Virginia Belle, built by Patti Shipyards, features a unique Cummins propulsion system.

Patti Shipyard Delivers 1,200-Passenger Riverboat To Robert's River Rides

One of the largest passenger excursion boats built this year has been put into service powered by a trio of 500-horsepower Cummins KTA-19 engines. The vessel sails on all-day excursion trips between South Charleston, W. Va., and Huntington, W. Va.

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

By any standards, the West Virginia Belle is simply spectacular. Built by Patti Shipyards, Inc., Pensacola, Fla., and designed by their own in-house architectural staff, the West Virginia Belle measures 197 feet 9 inches by 46 feet with a 10-foot draft. She features two totally enclosed decks, a partially enclosed third deck, and an open fourth deck topped by a pilothouse. Although the boat will be certified for at least 1,200 passengers, Mr. Kehl will limit capacity to 1,000 on all-day 100-mile trips.

While the KTA-19 engines are one of the standard workhorses of the Cummins marine diesel line, the propulsion system aboard the West Virginia Belle is unique.

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

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

WEST VIRGINIA BELLE Equipment List

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

"We have used similar isolation systems on smaller horsepower engines before," said **Dave Adams** of Cummins engineering department. "But, this is the first installation we know of on engines in the 500 horsepower range."

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

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

Among the state-of-the-art systems onboard the riverboat are an eight station TV monitoring system, centralized liquor dispensing, electronic engine controls with five control stations, three Microphor sewage treatment systems and an Aquafine ultraviolet water purifier.

For free literature detailing the boatbuilding services of Patti Shipyard,

Circle 30 on Reader Service Card



The recently converted 341-foot 5-inch Northern Eagle is one of the largest surimi factory trawlers in the world. The conversion work was performed by Ulstein Hatloe of Norway.

Ulstein Converts Containership To Fish Factory Trawler For U.S. Owner

Ulstein Hatloe A/S, Ulsteinvik, Norway, has delivered one of the world's largest surimi factory trawlers to her U.S. owners, after undergoing an extensive conversion at the yard.

The 341-foot 5-inch Northern Eagle was delivered to her New York-based owners Northern Eagle Partners Ltd. earlier this year after she was converted from a containership to a surimi factory trawler. The Northern Eagle, which is being used off the coast of Alaska to fish for pollack to produce into surimi, a versatile fish paste, has a molded breadth of 52 feet, design draft of 20 feet and speed of 14 knots. She is powered by two Bergen Diesel engines rated at 2,425 kw at 680 rpm each. She is fitted with a bevy of Ulstein equipment, including: a controllable-pitch propeller, Ulstein/Lohman reduction gear, propeller nozzle, high-lift flap rudder and an 800-hp bowthruster.

Electrical power is supplied by

NORTHERN EAGLE Equipment List

Main engines(2)	Bergen Diesel
Shaft generators	Leroy Somer
Generator engines	Caterpillar
Generators	Caterpillar
Emer. generators	Caterpillar
CP propeller	Ulstein
Reduction gear	Ulstein/Lohman
Propeller nozzle	Ulstein
High-lift flap rudder	Ulstein
Steering gear	Tenford
Bowthruster	Ulstein
Radar	Furuno
Color plotters	Furuno
Loran C	Furuno
SatCom	JRC
SSB radiotelephone	Skanti
VHF	Standard
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Trawl, sweep line, gilson, cod end, out haul & net drum winches	Hydraulik Bratvaag
Deck cranes	Hydraulik Bratvaag
Cargo freezer plant	Sabroe
Doppler current indicator	Furuno
True-motion trawl system	Ross
Digital depth indicator	Ross
Net sounder system	Krupp
Ship sounder	Krupp

Caterpillar equipment, with two Caterpillar generator engines rated at 640 kw at 1,800 rpm each and two Caterpillar SR 4 generators rated at 750 kw at 1,800 rpm each. Emergency power is provided by a Caterpillar 330 4T generator set with a Caterpillar SR 4 generator rated at 125 kva at 1,800 rpm.

The Northern Eagle features a full suite of sophisticated electronic communications and navigation equipment. Some of her navigation equipment includes one Furuno FR-1662-S navigation radar, two Furuno FCR-1411/6 color radars, two Furuno color plotters, and three Furuno C LC 90 Lorans. She is equipped with a JRC JUE-45A satcom, two Skanti SSB radiotelephones, three Standard VHF's, one Cobra SSB CB radio, a Furuno FD-525 VHF/ADF and a Furuno FD-181 IMO Standard MF/HF ADF.

The factory trawler is fitted with state-of-the-art fishing and production equipment. Her cargo hold capacity is approximately 2,300 m³. Since the processing of surimi requires large amounts of freshwater, and the Northern Eagle can produce as much as 400 tons per day.

She normally has a crew of 60-70, but has accommodations for as many as 88.

Her conversion was designed by Guido Perla & Associates of Seattle, Wash.

For free literature detailing the shipbuilding and converting services of Ulstein Hatloe,

Circle 29 on Reader Service Card

Daewoo Wins \$150-Million Order To Build Rig Platform

South Korea's Daewoo Shipyard was recently awarded a \$150-million contract by ONGC of India to construct an offshore steel oil rig platform on a consortium basis with Nippon Kokan K.K. of Japan.

The rig is expected to be delivered in March 1990.

National Specialty Products Introduces New Line For Marine/Offshore Industries —Literature Available

National Specialty Products Inc., based in Houston, Texas, primarily an industrial manufacturer of gangways and fiberglass industrial products, has recently expanded a product line to encompass the needs of the marine and offshore industries.

National Specialty Products manufactures breathing air cabinets, storage cabinets, and fire hose cabinets, and has now developed a new product line for the marine industry—all fiberglass survival suit cabinets, life jacket boxes and hose reels for wash-down of vessels and offshore platforms.

For more information and a free catalog on the full product line from National Specialty Products,

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PROPULSION UPDATE

MAN B&W Diesel To Power Chandris Luxury Cruise Liner Being Built By Meyer Werft

—Literature Available—

MAN B&W Diesel GmbH, Augsburg, West Germany, recently achieved a considerable sales success when its L40/54 four-stroke diesel engines were selected to power the new Chandris Cruise Line's cruise ship, which will be built at the Papenburg yard of Meyer Werft.

Seven sets of the medium-speed L40/54 design have been ordered by Meyer Werft for use aboard the new 45,000-grt cruise vessel. Four of the sets will be used to provide propulsion for the 1,400-passenger ship, while the three remaining sets will be installed as auxiliary units. MAN B&W will supply two six- and two nine-cylinder engines which will develop a total of 19,960 kw in a "father-and-son" arrangement, which offers excellent operational flexibility and economy, for propulsion. They will drive two variable-speed propellers via two duplex reduction



The diesel engine type shown, MAN B&W Diesel's 6L 40/54, will be used as part of a four-engine "father-and-son" power plant aboard a new Chandris cruise ship being built by Meyer Werft, Papenburg.

gear units. For auxiliary power, 7,980 kw of the "son" engines will be utilized as well as another three six-cylinder engines to produce a total output of 9,900 kw.

Under the \$150-million contract, the Chandris cruise liner is scheduled for delivery in the spring of 1990. She will have an overall length of 682-1/4 feet, width of 95 feet and service speed of 18 knots. Chandris plans to use her in the Caribbean cruise market.

With this new engine order further strengthens MAN B&W Diesel's position as one of the leading suppliers of propulsion equipment

in the passenger ship market. Since 1985, 65 large four-stroke engines have been supplied to the cruise ship and ferry sector by the Augsburg plant.

One of MAN B&W Diesel's most prestigious orders from the cruise sector was the supply of nine 9-cylinder L58/64 diesel engines for a diesel-electric installation aboard the QE2 as part of a major refit at Lloyd Werft of Bremerhaven, West Germany. The engines are now in operation as part of the world's most powerful merchant marine propulsion plant.

The medium-speed L40/54, which incorporates several design features from the L58/64 diesel, is designed to operate in the 500-514 rpm range on heavy fuel with a viscosity of 700 cst.

For free literature on the full line of marine diesel engines offered by MAN B&W Diesel,

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Northwest Marine Gets \$4.8-Million Contract To Perform Navy Overhaul

Northwest Marine Iron Works, Portland, Ore., has been awarded a firm-fixed price contract worth \$4,775,510 for the regularly scheduled drydocking and topside overhaul of the fleet oiler USNS Kawihiwi (T-AO-146).

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Kiene Diesel Accessories' products, The K-Series of Cylinder Pressure Indicators and the Kiene Indicator Valves, or "Cocks" as they are sometimes known, continue to be used by major engine manufacturers and operators worldwide.

The K-Series of indicators are currently available in two models covering two pressure ranges. For engines with peak firing pressures from 700 psi (45 kg/cm²), the K-100 with a pressure range of 0-2,000 psi (0-140 kg/cm²) is recommended, and for engines with peak firing pressures between 1,000 to 2,200 psi, the K-107 with a pressure range of 0-3,000 psi (0-210 kg/cm²) is available.

The indicator is designed to connect to all standard indicator valves (cocks), and allow the operator to quickly measure the engine peak pressures while the engine is in operation and under load. The K-Series instrument is recommended by many engine builders throughout the world, and used by major engine operators worldwide.

The Kiene V-Line and A-Line Indicator Valves were also developed as an answer to the problem of indicator valves opening during engine operation, thus causing a loss of power from a cylinder and an unsafe operating condition. The Kiene Valve (Cock) eliminates the opening of the valves during operation by using the "open against/close with engine pressure" concept, whereby the pressure the engine develops acts to hold the valve closed, instead of opening the valve as occurs with most other valves.

Kiene's current production includes indicator valves for engines manufactured by builders such as Oy Wartsila of Finland, Fairbanks-Morse Engine Division of Colt Industries, Cooper Energy Services and others.

Kiene has the capability to manufacture indicator valves with pipe threads, British standard threads (Whitworth or parallel pipe), metric threads, and other thread configurations that may be required by engine builders or operators.

For more information and free literature on products from Kiene Diesel Accessories,

Circle 60 on Reader Service Card

Bird-Johnson Acquires Columbian Bronze Stainless Steel Propeller Patterns —Free Color Brochure Offered

Bird-Johnson Company of Walpole, Mass., recently announced the acquisition of a new series of stainless steel propeller patterns from the recently closed Columbian Bronze Corporation of Freeport, N.Y. These patterns will expand the company's standard line of workboat and fishboat fixed-pitch propellers. The new patterns, formerly supplied as "Hydrosonic Style I," will be offered by Bird-Johnson as the "Atlantic No Rake (ANR)" Type.

Also purchased were numerous Kaplan Style patterns which will broaden the variety of short delivery nozzle propellers available and a number of custom designed spare or replacement propeller patterns.

Bird-Johnson's Seattle Operations of Seattle, Wash., will be the principal manufacturing site for these new fixed-pitch propellers. The Seattle operation consists of a small propeller repair and Michigan Wheel distribution shop as well as a foundry facility largely engaged in the casting and finishing of Coolidge Propellers. Coolidge Propellers are currently available in Type B, Type C, Type D, Atlantic, Pacific and Kaplan Styles from 3 feet to 12 feet diameter and in a variety of blade configurations.

Bird-Johnson Company is one of the leading

U.S. manufacturers of controllable and fixed-pitch propellers for commercial and naval applications with facilities in Walpole, Mass., Pascagoula, Miss., and Seattle, Wash.

For information regarding Bird-Johnson's dealer/distributor network, and for a free copy of their four-color fixed-pitch propeller capabilities brochure,

Circle 42 on Reader Service Card

Seebeckwerft Receives Order To Build Second Cruise Ship For Seabourn Cruise Line



Model of the Seabourn Pride, which is under construction at West Germany's Seebeckwerft AG. The yard recently received an order to build a sister ship of the Seabourn Pride for a Norwegian owner.

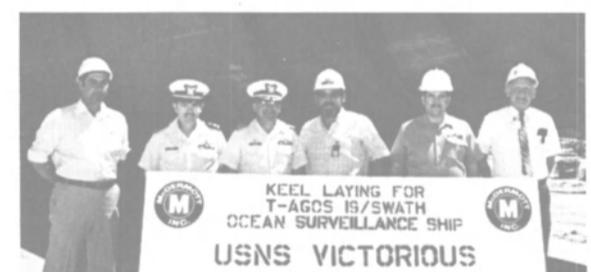
Seebeckwerft AG of Bremerhaven, West Germany, recently received an order to build a second luxury cruise ship for Seabourn Cruise Line, after the Norwegian ship operator exercised an option from a previously awarded contract.

The as-yet-unnamed vessel, yard newbuilding No. 1070, will be the sister ship of the Seabourn Pride, which is currently under construction at Seebeckwerft. Like her sister ship, newbuilding No. 1070 will have an overall length of 439 feet, beam of 62-1/4 feet, design draft of 16-1/2 feet and cruising speed of about 19 knots. She will be targeted for the luxury market, with a passenger capacity of 212 in 106 outside suites. Both ships will offer elaborate and spacious public rooms, restaurants, a marina and an elaborate health spa.

The Seabourn Pride is expected to be delivered in November 1988.

For free literature on the shipbuilding services of Seebeckwerft,

Circle 53 on Reader Service Card



MCDERMOTT KEEL-LAYING CEREMONIES—Keel-laying ceremonies for the Navy's T-AGOS 19/SWATH Ocean Surveillance Ship, the USNS Victorious, were recently held at the McDermott Shipyard in Amelia, La. Attending were, left to right: **John Mayeaux**, surveyor, American Bureau of Shipping; Chief Warrant Officer **David Hawthorne**, USCG, Marine Inspection; Comdr. **James P. Wysocki**, OCM (MSC) Morgan City, La.; **Gary Newchurch**, division manager, McDermott Shipyard; Lt. Comdr. **Rehe Ruesch**, resident supervisor of shipbuilding; and **William Jenkins Jr.**, Project Officer, Military Sealift Command.

For free literature giving full details on the facilities and capabilities of McDermott Shipyard,

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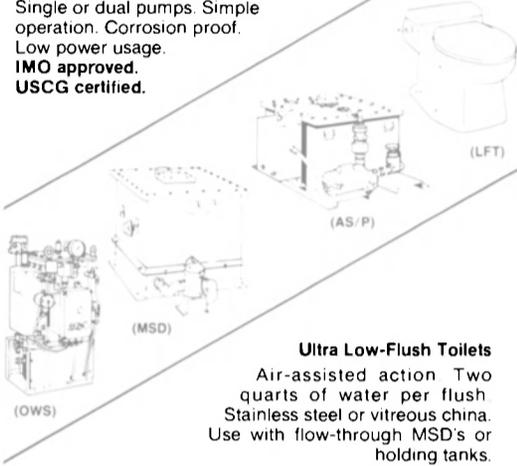
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Circle 155 on Reader Service Card

ZF Of North America Announces Key Appointments

ZF of North America, Inc. (ZF-NA) recently
announced the following personnel changes.



Russ Polansky

Adam Blum

Russ Polansky has been promoted to ac-
counts manager, marine transportation depart-
ment. His responsibilities include sales of ma-
rine transmissions to the pleasure craft and
commercial markets, as well as handling and
developing specific marine accounts.

Mr. Polansky has been with ZF of North
America for over three years. Prior to joining the
marine department, he held field engineering
and sales engineering positions in the heavy
duty automotive transmissions group of ZF-
NA.

Adam Blum recently joined the marine divi-
sion to assist the account manager. He will back
up the field sales force by phone and work with
customers in all aspects of marine transmission
sales. Previously, Mr. Blum was with Zenith
Electronics Corporation in Glenview, Ill.

National Specialty Products Introduces Marine And Offshore Industries Product Line

National Specialty Products, Inc., Houston,
Texas, primarily an industrial manufacturer of
gangways and fiberglass industrial products, has
recently expanded their product line to encom-
pass the needs of the marine and offshore indus-
tries.

National Specialty Products manufactures
breathing air cabinets, storage cabinets, and fire
hose cabinets. The new product line for the
marine industry includes all-fiberglass survival
suit cabinets, life jacket boxes and hose reels for
wash-down of vessels and offshore platforms.

For more information and a free catalog of the
full product line from National Specialty Prod-
ucts,

Circle 91 on Reader Service Card

Rados International Finalizes Design Converting Seiner Into Oceanographic Research Vessel

Rados International Corporation, naval archi-
tects and marine engineers of San Pedro, Calif.,
has announced the finalization of a new design
for the University of Southern California, Insti-
tute for Marine and Coastal Studies, to convert
an existing tuna purse seiner fishing vessel into a
state-of-the-art oceanographic research vessel.

Labeled as "The region's most capable acade-
mic research ship," and sponsored by the
Ocean Studies Foundation, the vessel Osprey,
ex-Theresa Ann, built in 1973 by San Diego
Marine Construction Company as an 1,100-ton-
capacity tuna fishing vessel, will soon provide an
enormous potential and advancement for the
university as a marine research platform.

Currently moored in the Terminal Island por-
tion of the Los Angeles Harbor, the 220-foot ves-
sel is now undergoing the necessary conversion

modifications required for the implementation
of oceanographic and research equipment.

Originally designed and construction super-
vised by Rados in 1973, the vessel was donated
in part to the University by Van Camp Sea Food
Company/Ralston Purina Company in late
1984.

The refurbished Osprey has been earmarked
to provide new research functions, including
resource assessment of the national 200-mile
exclusive economic zone, geology of the conti-
nental margin which includes seismic activity
and sediment transport along continental
shelves, nature of acoustical and optical scatter-
ing within the oceans, relationships of atmos-
pheric weather patterns to changes in marine
environments, and identification of sources and
distributions of marine pollutions.

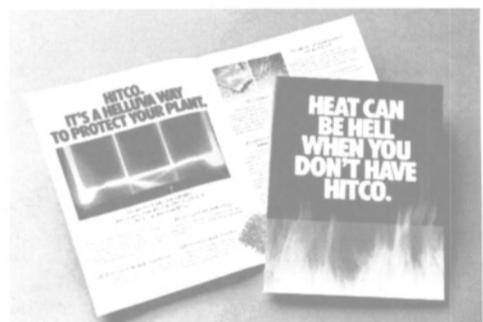
The vessel has been redesigned to incorporate
a slow speed maneuvering/propulsion system,
multiple scientific laboratories, various ocean-
ographic cranes and winches, and a complement
of vital A-Frames. These in conjunction with the
originally designed bulbous bow, passive flume
stabilization system, and fuel efficient single
diesel engine propulsion system, provide for a
highly efficient research vessel and reasonable
alternative for design and construction of a new-
er vessel.

Completion of the conversion is expected by
mid to late 1988.

For information and free literature on Rados
International Corporation,

Circle 38 on Reader Service Card

New Brochure From Hitco Outlines Asbestos-Free Insulation Textiles



The new brochure available from Hitco Materials Division
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placement textile; Irish Refrasil®, a high-tem-
perature asbestos-replacement textile; Fabrisil®,
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Fab®, an aramid and glass fiber insulation.

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AUTHORITY
REQUEST FOR PROPOSALS
FOR A NEW HUDSON DEPOT
C-40380
SF-06-34-74
(READVERTISED)**

SEALED PROPOSALS WILL BE RECEIVED BY the New York City Transit Authority, 25 Chapel Street, Room 1047, Brooklyn, NY 11201 until 4:30 P.M. local time on Tuesday, August 16, 1988

Request for Proposals (RFP) C-40380 (Readvertised) seeks proposals for the design, environmental permit acquisition, and construction of a depot to replace the current Hudson Depot, which is located on Pier 57 and an access area immediately to its east between 11th Avenue and the Hudson (North) River in Manhattan, N.Y.C. The depot would house approximately 260 buses and have sufficient space to perform maintenance work, inspection, and associated pick-up work and house supporting storeroom facilities and administrative offices, etc. The Authority anticipates that the new facility would be located either directly north or south of the existing depot and could be either floating or pile-based. The contractor would design and construct the facility and the adjacent dockage and access areas, and obtain environmental permits necessary for the project. The Authority has established a goal of 15% Disadvantaged Business Participation for this contract.

The release date of this RFP is Thursday, June 16, 1988. This RFP Solicitation No. C-40380 (Readvertised) may be obtained, free of charge, at the Bid Solicitation Desk, 6th Floor, Room 607, 25 Chapel Street, Brooklyn, NY 11201 or by calling the Contract Manager, Bruce Whitelaw at (718) 330-3118 Fax # (718) 330-0770. For information regarding site tour and pre-proposal conference, contact Mr. Whitelaw. Inquiries and Proposals are to be addressed to Mr. Whitelaw at the Address below. The Closing time and date for the receipt of Proposals are 4:30 P.M. local time on Tuesday, August 16, 1988.

**N.Y.C. Transit Authority
CONTRACTS DEPARTMENT
25 Chapel Street—Room 1046
RFP C-40380 (Readvertised)
Brooklyn, NY 11201
Attention: Mr. Bruce Whitelaw**

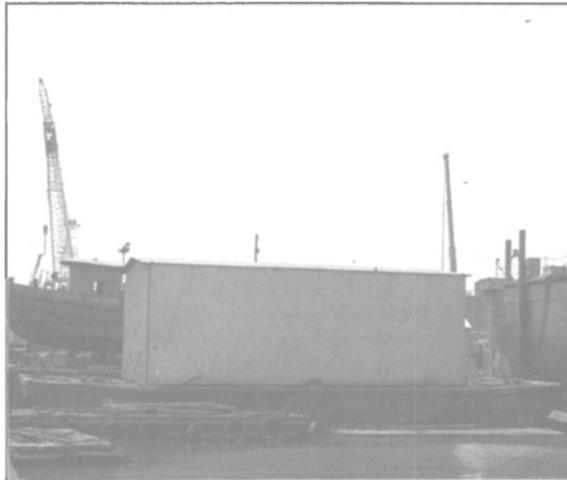
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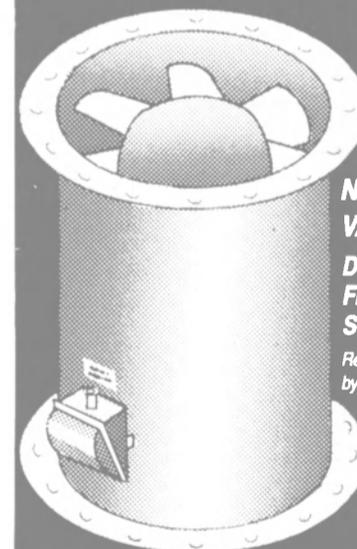
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AESA Wins \$50-Million Order To Build Three Catamarans For U.S. Cruise Market

Astilleros Espanoles S.A. (AESA) of Spain recently received a \$50-million order from a consortium of companies to build three 600-passenger catamarans for the U.S. cruise market.

The three 282-foot catamarans, which would be chartered by a number of U.S.-based operators including SeaEscape of Miami, Fla., would be some of the largest in the world cruise market.

The catamarans, which will be built by AESA's Seville yard and delivered within the next two years, will be used mainly in the one-day cruise market.

Atlantic Association, a Cayman Islands' company, which is a shareholder in SeaEscape, is a principal in the joint venture. The firm has been involved in the cruise ship industry for several years.

For free literature on the shipbuilding and ship-repairing services and facilities of Astilleros Espanoles,

Circle 57 on Reader Service Card

New Powerful Icebreaker Under Construction At Gotaverken Arendal

Gotaverken Arendal (GVA) of Gothenburg, Sweden, is constructing a new, powerful 4,850-ton icebreaker for the Swedish Board of Navigation, which will be able to plow through six-foot ice.

The new 24,500-hp icebreaker, the Oden II, will be 353-1/2 feet long, with a maximum beam of 96-1/2 feet and draft of 23 to 28 feet. She will be equipped with four medium-speed diesels, which will drive two controllable-pitch nozzled propellers through reduction gearing, for a top speed of 17 knots in open water.

The Oden II will be able to clear a channel through ice from 5-1/2 to 6 feet thick. This, plus the vessel's ability to ram ice at full speed and penetrate some of the largest ice ridges, will give her performance characteristics similar to some of the most powerful U.S. and Canadian icebreakers.

Through an agreement with Dome Petroleum/Canmar of Canada, GVA was able to incorporate Canadian know-how and experience along with their own into the construction of the vessel.

The Oden II is expected to be delivered in October 1988, a year after her keel was laid.

For literature describing the shipbuilding services of GVA,

Circle 52 on Reader Service Card

MMS Delivers Computerized Maintenance Management Systems For Pan Ocean

Marine Management Systems (MMS) recently completed delivery of their PC-based Spare Parts Inventory Management (SPIM), Planned Maintenance (PMS) and Condition Monitoring (CMS) systems, for Pan Ocean Shipping Company of Seoul, South Korea, according to an announcement made by MMS president, Eugene D. Story.

Operating under a contract awarded through the Marine Management Centre (MMC) in London, England, MMS' SPIM, PMS and CMS systems were implemented for two Pan Ocean car carriers recently constructed at Daewoo Shipyard, Okpo, South Korea, and will be supplied for two additional car carriers, currently under

construction at Daewoo.

MMS' SPIM system will provide full shipboard inventory management control, while the PMS system will help reduce ship repair and downtime costs.

For more information and free literature from MMS,

Circle 63 on Reader Service Card

Robert Ames Named President, Port Of Portland Commission

Robert Ames, president of the First Interstate Bank of Oregon, has been selected as the new president of the Port of Portland Commission by Governor Neil Goldschmidt.

Mr. Ames succeeds Cecil Drinkward, who resigned as port commission president recently. Mr. Drinkward, Mr. Ames and three others were appointed to the port in January 1987.

Mr. Ames stated that he does not foresee making any policy changes from Mr. Drinkward's 14-month tenure as president of the Port of Portland Commission.

Textron Marine Collaborates With Swedish Company To Build High-Speed Passenger Ferries



Model of the SES-Jetrider vessel. Two of this type of ship are being constructed in Sweden for use as high-speed passenger ferries.

Two twin-hulled Surface Effect Ships (SES) under construction at Karlskrona, Sweden are the product of close collaboration between the Swedish company Karlskronavarvet AB and the U.S. company Textron Marine Systems.

The vessels are being built for Norwegian owners and will be used as high-speed passenger ferries between Helsingborg, Sweden and Copenhagen, Denmark. Surface Effect Ships for use as cargo ferries, coastal patrol boats, military attack crafts and larger passenger vessels are also under development or planned.

The SES concept of a power-driven vessel, partially supported on an air cushion confined between twin side hulls and curtain-type end seals is not new. Textron Marine Systems have themselves been researching the project for years. Since 1984, however, Karlskronavarvet have made several changes to the basic Textron design, which will allow the new ferries to operate at speeds of about 45 knots at full load.

The SES-Jetrider hull has been built of a three-layer GRP/PVC sandwich. The hull is made of a PVC core between two layers of GRP, making it strong, lightweight, corrosion-resistant and fire-resistant.

In addition, the SES-Jetrider has been equipped with waterjet propulsion instead of the usual screw propulsion.

Karlskronavarvet claims that at a speed of 45 knots with full load, the SES-Jetrider vessel will consume less fuel than almost any comparable craft.

For free literature detailing the SES-Jetrider concept from Karlskronavarvet and Textron Marine Systems,

Circle 20 on Reader Service Card

FOR MORE INFORMATION ON EQUIPMENT AND SERVICES ADVERTISED IN THIS ISSUE

CIRCLE THE APPROPRIATE NUMBER ON READER SERVICE CARD OPPOSITE

ADVERTISER	EQUIPMENT /SERVICE	CIRCLE NO.
ADRICK MARINE	AIR CONDITIONING/REFRIGERATION EQUIPMENT	108
ALLIED SIGNAL/SAMSON OCEAN SYSTEM	ROPE	338
ASTILLEROS ESPANOLAS	SHIPBUILDING/REPAIR	184
BLOHM & VOSS	STERN TUBE SEAL	128
CARLING TURBINE	BLOWERS/EXHAUSTERS	112
CATERPILLAR	SEA CARE SERVICE:IN-HULL OVERHAUL KITS	110
COMSAT MARITIME SERVICES	COMMUNICATIONS EQUIPMENT	150
DEL GAVIO	HYDRAULICS	155
A. L. DON	PILOT LADDERS	118
ECKOLD LTD	ECKOLD KRAFT FORMS	148
ENVIROVAC	ORCA SEWAGE SYSTEMS	158
EVERPURE	WATER PURIFICATION SYSTEM	168
FCS INC	CERAMIC COATED COMBUSTION COMPONENTS	208
FAST SYSTEMS	PACE OIL/WATER SEPARATOR	228
R.W. FERNSTRUM	KEELCOOLERS	165
FINCANTIERI	SHIPBUILDING/REPAIR	239
FISH EXPO 88	TRADE SHOW	290
GAYLORD INDUSTRIES	EXHAUST HOODS	238
GULF CRAFT	SHIPBUILDING	248
HBC	BARGE BUILDING	218
INDIKON	CRANKSHAFT WEB DEFLECTION INDICATOR	248
INVENTORY LOCATOR SERVICE	CROSS REFERENCE/PARTS DATA BASE	258
JIM'S PUMP REPAIR	PUMP REPAIR	332
JOHNSTON BROTHERS	METAL LETTERS	294

ADVERTISER	EQUIPMENT /SERVICE	CIRCLE NO.
KELVIN HUGHES	RADAR SYSTEMS	201
McELROY	DECK MACHINERY	138
MAN B&W HOLEBY DIESEL	GENSETS	288
MARINE SYSTEMS CORP	SEMINAR SERIES:NAVY SHIP REPAIR	298
MARINE TRAVELIFT	BOAT HOISTS	121
MICROPHOR	SEPARATORS/SANITATION DEVICES/SUMPS/PUMPS	199
L.Q. MOFFITT	BEARINGS/STAVES/SLEEVES/	227
MUNSON MFG	SHIPBUILDING	308
PALMER INTERNATIONAL	POLYMERS	270
PETTIBONE-TIFFIN	CRANES	182
PORTABLE GUN DRILLING	SHIPBUILDING EQUIPMENT	194
SEAWARD	FENDERS	146
SERVICE MARINE	SHIPBUILDING	328
SKIPPERLINER	SHIPBUILDING	318
SULZER-ESCHER WYSS	C-P PROPELLERS	348
TECHNICAL SERVICES GROUP	INSTRUMENTATION/CONTROL SERVICES	307
TRINITY MARINE GROUP/HALTER MARINE	SHIPBUILDING	278
UNIVERSAL MARINE MEDICAL SUPPLY	MEDICAL SUPPLIES	130
VSE CORP	DESIGN SERVICES	287
WATERCOM	TELECOMMUNICATIONS SYSTEM	280
WHITE METALS	ABRASIVE BLASTING	188
ZIDELL INC	BARGES	178
ZODIAC OF NORTH AMERICA	RIGID HULL INFLATABLE BOATS	281

The listings above are an editorial service provided for the convenience of our readers.

Circle Seal Offers New Safety Relief Valve For Pressures To 200 PSI

A new series of compact safety relief valves for pressures to 200 psi is now available from Circle Seal Controls, Anaheim, Calif. Designated the 500 Series Relief Valves, they provide a cracking pressure ac-

curacy of +/- 5 degrees, and an instant reseal at 90 percent of cracking (above 10 psi).

According to Circle Seal, the 500 Series Relief Valves provide zero leakage to 95-98 percent of cracking pressure. As pressure increases, the cross-shaped Q-ring forms a tighter and more efficient seal against the metal seat of the valve up to cracking pressure. Interchangeable springs provide a wide range of

cracking pressures: from .5 to 150 psi. They are adjustable only from the inlet side for safety against tampering.

The 500 Series valves are easy to install and provide long, maintenance-free service. They may be preset at the factory to required cracking pressure, and are available in aluminum, stainless steel or brass with a wide choice of Q-ring materials for a broad temperature and

media compatibility.

These valves are available in a choice of configurations: in-line, discharge-to-atmosphere and manual override. Deflector caps and ASME coded versions are also available.

For more information and free literature on the 500 Series Relief Valves from Circle Seal Controls,

Circle 49 on Reader Service Card

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BLS-1-903	3	1	9600
BLS-2-603	3	2	13320
BLS-2-903	3	2	17760
BLS-1-604	4	1	9600
BLS-1-904	4	1	12800
BLS-2-604	4	2	17280
BLS-2-904	4	2	23040
BLS-1-605	5	1	12000
BLS-1-905	5	1	16000

Stock No.	Width (Inches)	Ply	Basket Hitch
BLS-2-605	5	2	21000
BLS-2-905	5	2	28000
BLS-1-606	6	1	14400
BLS-1-906	6	1	19200
BLS-2-606	6	2	24480
BLS-2-906	6	2	32640
BLS-1-908	8	1	25600
BLS-2-908	8	2	40960
BLS-1-910	10	1	32000
BLS-2-910	10	2	48000
BLS-1-912	12	1	38400
BLS-2-912	12	2	53760

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This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER/Engineering News. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR/EN assumes no responsibility for errors. If you are interested in having your company listed in this Buyers Directory Section, contact John C. O'Malley at (212) 477-6700.

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Adrick Marine Corp., 320 Cantor Ave., Linden NJ 07036
Bailey Refrigeration Co., Inc. 2323 Randolph Avenue, Avenel, NJ 07001
Stal Refrigeration AB, Butangsgatan 16, S-60187 Norrköping SWEDEN

ANODES—Cathodic Protection

Electrocatalytic Inc., 2 Milltown Ct., Union NJ 07083

BALLAST

Genstar Stone Products, Executive Plaza IV, Hunt Valley, MD 21031
Mineral Research & Recovery Inc., 4565 S. Palo Verde, Ste 203, Tucson AZ 85714

BARGE BUILDING

HBC Barge, Brownsville PA 15417

BARGES—Leasing

McDonough Marine Service, P.O. Box 1825, Parkersburg WV 26101

BASKET STRAINERS

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

BEARINGS—Rubber, Metallic, Non-Metallic

Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062

Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

Kingsbury Inc., 10385 Drummond Rd., Philadelphia PA 19154

Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, OH 44309

Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186

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Infrasonik AB (an ASEA Stal Co.), S-612 20 Finspong, SWEDEN

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Bergeron & Associates, P.O. Box 726, Chalmette LA 70044

Jack Faulkner Inc., 2419 Caddy Lane, P.O. Box 371, Flossmoor IL 60422

Mowbray's Tug & Barge Sales Corp., 35 De Hart St., Morristown NJ 07960

Ocean Marine Brokerage Services, P.O. Box 1257, Port Canaveral, FL 32927

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Milligan Marine Supply Inc., 5832 Harvey Wilson, Houston TX 77020

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Eldec Corporation, 16700 13th Ave. West, P.O. Box 100 Lynnwood, WA 98036

Imo-Delaval, Inc., Gems Sensors Division, One Cowles Rd., Plainville CT 06062

Indikon Division, Metravis Instruments Inc., 26 New St., Cambridge, MA 02138

NAMCO Controls, 7567 Tyler Blvd, Mentor OH 44060

Teleflex Inc., 771 First Ave., King of Prussia, PA 19406

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

WABCO, 1953 Mercer Rd., Lexington KY 40511

CRANES—HOISTS—DERRICKS—WHIRLEYS

ASEA-Hagglund, Inc., 50 Chestnut Ridge Rd., Montvale NJ 07645

The Crosby Group, Inc., P.O. Box 3128, Tulsa OK 74101

Del Gavio Marine Hydraulics Inc., 207 W. Central Ave., Maywood NJ 07607
telex: 132610 DELMARINE

Marine Travelift, Inc., 49 E. Yew St., Sturgeon Bay, WI 54235

Morgan Crane Co., Inc. (Hiab SeaCranes and QMC Trident, Ferrari, Fassi marine cranes), 1009 E Chestnut Ave., Santa Ana CA 92701

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Morgan Crane Co., Inc. (Hiab SeaCranes and QMC Trident, Ferrari, Fassi marine cranes), 1009 E Chestnut Ave., Santa Ana CA 92701

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Colt Industries Inc. Fairbanks Morse Engine Div. 701 Lawton Ave., Beloit, WI 53511

Diesel America Inc., 5217 River Rd., New Orleans LA 70123

FCS Inc., 22 Main St., Center Brook CT 06409

General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, MA 02360

Kiene Diesel Accessories, 325 S. Fairbanks St., P.O. Box 386, Addison IL 60101

DIESEL ENGINE—Spare Parts & Repair

Bergen Diesel A/S, P.O. Box 924, N-5001 Bergen NORWAY

Bergen Diesel Inc., 2701 Delaware Ave., Kenner LA 70062

Chrome Locomotives, P.O. Box 197, Silvis IL 61282

Colt Industries Inc. Fairbanks Morse Engine Div. 701 Lawton Ave., Beloit, WI 53511

Cummins Engine Co., Inc., Mail Code 40642, Box 3005 Columbus, IN 47202-3005

Goltens, 160 Van Brunt St, Brooklyn NY 11231

MAN B&W Diesel GmbH, Stadtbachstrasse 1, D-8900 Augsburg 1, Federal Republic of Germany

MAN B&W Diesel, 50 Broadway, 18th Fl., New York, NY 10004

Markisches Werk GmbH, P.O. Box 1442, D-5884 Halver 1, Federal Republic of Germany

Sulzer Brothers Inc., 200 Park Ave., New York, N.Y. 10166

DIVING & SALVAGE

Muldoon Marine Services, P.O. Box 3221, Terminal Island, CA 90731

Parker Diving Service Inc., Berth 69, Los Angeles Harbor, P.O. Box 5272, San Pedro CA 90733

ELECTRICAL EQUIPMENT

Eldec Corporation, 16700 13th Ave West, P.O. Box 100, Lynnwood WA 98036

SPD Technologies, 13500 Roosevelt Blvd, Philadelphia PA 19116

Ward Leonard Electric, 31 South St., Mt. Vernon, NY 10550

Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, OR 97201

ELECTRONIC INFORMATION SYSTEMS

Inventory Locator Service Inc., 3820 Premier Ave., Memphis TN 38118

ELECTRONIC SYSTEMS

Marine Electric RPD, Inc., 666 Pacific St., Brooklyn, NY 11217 TX: 125327

ENGINE TEST EQUIPMENT

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EQUIPMENT—Marine

Atlas Copco Rental, 70 Demarest Dr., Wayne, NJ 07470

Thomas Coudon Associates, 6655 Amberton Dr., Baltimore, MD 21227

Kearfoot Marine Products, 550 South Fulton Ave., Mount Vernon, NY 10550

Maritime Power Corp., 200 Henderson Street, Jersey City, NJ 07302

Space Machine & Engineering Corp., 2346 16th Ave North, St Petersburg FL 33713

EVAPORATORS

Atlas-Danmark Desalination Systems A/S, Stamholmen 93, 2650 Hvidovre (Copenhagen), Denmark

Equipment Engineering, 666 Baker St., #265, Costa Mesa CA 92626

MECO (Mechanical Equipment), 861 Carondelet St., New Orleans LA 70130

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

FANS—VENTILATORS—BLOWERS

Carling Turbine Blower Company, 10 Nebraska St., P.O. Box 88, Worcester MA 01613

Jon M. Liss Associates, Inc., 411 Borel Ave., P. O. Box 5554, San Mateo, CA 94402

Robinson Industries, P.O. Box 100, Zelenople, PA 16063

FASTENERS

Action Threaded Products Inc., 6955 S. Harlem, Bedford Park, IL 60638

Band-It Division, Houdaille Industries Inc., P.O. Box 16307, Denver CO 80216

Hardware Specialties Co., Ships Division, 48-75 36th St, Long Island City NY 11101

Lee Brass Company, P. O. Box 1229, Anniston AL 36202

Mapeco Products, Inc., 725 Glen Cove Ave., P.O. Box 6, Glen Head NY 11545

Non-Ferrous Bolt & Mfg Co., 4085 Nevso Dr., Suite C, Las Vegas NV 89103

Okabe Co., Inc., 175 Lively Blvd., Elk Grove Village, IL 60007

FENDERING SYSTEMS/BUOYS—Dock & Vessel

Intertrade Ltd., Marine Products Div., 15301 Transistor Lane, Huntington Beach CA 92649

Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062

Kohlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

Milligan Marine Supply Inc., 5832 Harvey Wilson, Houston TX 77020

Schuyler Manufacturing, 16901 Woodinville-Redmond Rd, Woodinville WA 98072

Seaward International, Inc., Clearbrook Industrial Park, P.O. Box 98, Clearbrook WA 22624

FILTERS

Marketec, Inc., 27 Bowers Lane, Chatham NJ 07928

Parker Filter Division, 16810 Fulton County Rd., #2, Metamora, OH 43540

FUEL ADDITIVE

U.S. Borax, Industrial Chemicals, 3075 Wilshire Blvd., Los Angeles CA 90010

FURNITURE

Bailey, Carpenter & Insulation Co., 2323 Randolph Avenue, Avenel, NJ 07001

GALLEY EQUIPMENT

Gaylord Industries, 10900 S W Avery St, P.O. Box 1149, Tualatin, OR 97062

GANGWAYS, LADDERS

A.L. Don, 1 Don Plaza, Dock St., Matawan NJ 07747

Rampmaster Inc., 9825 Osceola Blvd., Vero Beach, FL 32960

Westmont Industries, 10805 Painter Ave., Santa Fe Springs, Los Angeles, CA 90670

Wooster Products Inc., 1000 Spruce St., P.O. Box 896, Wooster, OH 44691

HEAT EXCHANGERS

Alfa Laval Inc., 2115 Linwood Ave., Fort Lee NJ 07024

ITT Standard Heat Transfer Technology, Buffalo, NY 14240

MECO (Mechanical Equipment), 861 Carondelet St., New Orleans LA 70130

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

HORNS/WHISTLES

Kahlenberg Bros Co., P.O. Box 358, Two Rivers, WI 54241

HYDRAULICS

Aeroquip Corporation, 300 South East Ave., Jackson, MI 49203

Cunningham Marine Hydraulics Co., 201 Harrison St., Hoboken NJ 07030

Del Gavio Marine Hydraulics Inc., 207 W Central Ave., Maywood NJ 07607;
telex: 132610 DELMARINE

Parker Hannifin Corporation, 17325 Euclid Avenue, Cleveland, OH 44112

INCINERATORS

Teamtec A/S, P.O. Box 100, N-4912 Gjeving, NORWAY

INSTRUMENTATION

Technical Services Group, 2900 Main St., Alameda CA 94501

INSULATION—Cloth, Fiberglass

Bailey, Carpenter & Insulation Co., 2323 Randolph Avenue, Avenel, NJ 07001

The Claremont Company, 174 State Street, P. O. Box 952, Meriden CT 06450

Duracote Corp., 350 North Diamond St., Ravenna, Ohio 44266

Soundcoat, One Burt Drive, Deer Park NY 11729

JOINER—Watertight Doors—Paneling—Ceiling Systems

Astech, 3030 S. Red Hill Ave., Santa Ana, CA 92711

Bailey Distributors, Inc., 2323 Randolph Avenue, Avenel, NJ 07001

Dampa Inc., The Gatehouse at North Park, Suite 106-108, Hunt Valley MD 21030

Simpson Timber Co., Third & Franklin, Shelton WA 98584

Walz & Krenzer Inc., 1390 Mt. Read Blvd., Rochester NY 14606

KEEL COOLERS

R.W. Fernstrum & Co., 1716 Eleventh Ave., Menominee, MI 49858

Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062

Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

The Walter Machine Co., Inc., 84-98 Cambridge Avenue, Jersey City, NJ 07307

LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights

Carlisle & Finch, 4562 W. Mitchell Ave., Cincinnati OH 45232

Phoenix Products Company, Inc., 4769 North 27th Street, Milwaukee, WI 53209

LINE BLINDS

American Piping Products Inc., Box 1056, New Hyde Park, NY 11040

LUBE-OIL CENTRIFUGES

Keith Dixon Warehouse Supplier, Authorized distributor for Spinner II, 650 Whitehead Rd., Lawrenceville NJ 08648

Hamworthy Engineering Ltd., Fleets Corner, Poole, Dorset, BH17 7LA ENGLAND

Spinner II Products Div., T.F. Hudgins Inc., P.O. Box 920946, Houston, TX 77292

MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING

AMT, Inc., 2400 NW 39th Ave., Miami FL 33142

Del Gavio, 207 W. Central Ave., Maywood, NJ 07607. Telex: 132610 DEL-MARINE

Goltens, 160 Van Brunt St., Brooklyn, NY 11231

In-Place Machining Co., 1929 North Bufum St., Milwaukee WI 53212

MARINE LUMBER

McCauley Lumber Co., P.O. Box 38027-A, Detroit MI 48238

MEDICAL SUPPLIES

Universal Marine Medical Supply, 69-06 3rd Ave., Brooklyn NY 11209

METAL MARKERS/LETTERS

Johnston Brothers Enterprises, Inc., P.O. Box 1138, Patterson, LA 70329

J. P. Nissen Company, P.O. Box 188, Glenside PA 19038

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS

Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Hwy., Arlington, VA 22202

Aero Nav Laboratories, Inc., 14-29 112 St., College Point, NY 11356

American Professional Captains Association, P.O. Box 350398, Ft. Lauderdale FL 33316

American Systems Engineering Corp., P.O. Box 8988, Virginia Beach, VA 23452

Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, MD 20015

Amtech Services, Inc., P.O. Box 84148, Seattle WA 98124

Armora Sales Inc., 2 Marineview Plaza, Hoboken NJ 07030

B.C. Research, 3650 Westbrook Mall, Vancouver, B.C. Canada V6S 2L2

Del Breit Inc., 326 Picayune Place (Suite 201), New Orleans, LA 70130

CDI Marine Co., 900 Regency Square Blvd., Suite 203, Jacksonville, FL 32211

C.T. Marine, 18 Church Street, Georgetown, CT 06829

Childs Engineering Corp., Box 333, Medfield, MA 02052

Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, MA 02026

Crane Consultants, 15301

York, NY 10004; P.O. Box 205, Solomons MD 20688; 2 Skyline Pl., 5203 Leesburg Pike, Falls Church VA 22041.
Seaworthy Electrical Systems, 17 Battery Pl. N.Y. N.Y. 10004
George G. Sharp, Inc., 100 Church St., New York, NY 10007
T.W. Spaetgens, 156 W. 8th Ave., Vancouver BC CANADA V5Y 1N2
R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235
Systems Engineering Associates (SEACOR), 200 East Park Dr., Suite 600, Mt Laurel NJ 08054
TIMSCO, P. O. Box 91360, Mobile AL 36691
Tracor Hydraulics, Inc., 7210 Pindell School Rd., Laurel, MD 20707
VSE Corporation, 1417 No Battlefield Blvd, Chesapeake VA 23320
Thomas B. Wilson, Associates, 1258 North Avalon Blvd., Wilmington, CA 90744

NAVIGATION & COMMUNICATIONS EQUIPMENT

AT&T, 412 Mt Kemble Ave., Room N420, Morristown NJ 07960
Atkinson Dynamics, 10 W Orange Ave., So San Francisco CA 94080
Comsat Maritime Services, 950 L'Enfant Plaza SW, Washington DC 20024
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080
General Electric Company, Mobile Communications Division, Lynchburg, VA 24502
Harris Corporation, RF Communications Group, 1680 University Ave., Rochester NY 14610

Henschel Corporation, 9 Hoyt Dr., P.O. Box 30, Newburyport MA 01950
ITT Mackay, 441 U.S. Highway #1, Elizabeth, NJ 07202
Kelvin Hughes Ltd., New North Rd., Hainault, Ilford, Essex IG6 2UR England
Mackay Communications, 441 US Highway #1, P. O. Box 331, Elizabeth NJ 07207

Naval Electronics, 5417 Jetview Circle, Tampa FL 33634
Narcontrol Simulation A/S, Bekkjordet 8A, P.O. Box 1024, N-3191 Horten NORWAY
Ocean Satellite Television Ltd., Avmar House, 61 Brushfield St., London E1 6AA ENGLAND

Petroleum Communications Inc. (Petrocom) Head Office: 5901 Earhart Expwy., New Orleans LA 70123; 556 Jefferson St., Suite 100, Lafayette LA 70501; Allied Bank Plaza, Suite 5440, 1000 Louisiana St., Houston TX 77002
Racal Marine Inc., 70 Jackson Dr., Cranford NJ 07016
Radio-Holland USA, Inc., 6033 South Loop East, Houston, TX 77033
Raytheon Marine Company, 46 River Rd., Hudson NH 03051
Raytheon Service Company, 5760 Northampton Blvd., Ste 102, Virginia Beach VA 23455

Robertson Shipmate Inc., 3000 Kingman St., Suite 207, Metairie LA 70006
S P Radio A/S, DK 9200 Aalborg DENMARK
SPT Audio, 8928 Kirby Dr., Houston TX 77054
Sperry Marine Inc., 1070 Seminole Trail, Charlottesville VA 22906
Standard Communications, P.O. Box 92151, Los Angeles CA 90009
Standard Radio & Telefon AB, P.O. Box 501, S-162 15 Vallingby, SWEDEN
Telesystems, 2700 Prosperity Ave., Fairfax, VA 22031 USA
Watercom Communications Systems, 453 E. Park Place, Jefferson IN 47130

OILS—Marine—Additives
B P North America Petroleum, 555 US Route 1, So. Iselin, NJ 08830
Chevron USA, 575 Market St., San Francisco, CA 94105
Texaco, International, 2000 Westchester Avenue, White Plains NY 10650

OIL/WATER SEPARATORS
Alfa Laval Inc., 2115 Linwood Ave., Fort Lee NJ 07024
Centrico, Inc. (Westhalia Separators), 100 Fairway Court, Northvale, NJ 07647
FAST Systems Inc., 1717 Sublette Ave., St Louis MO 63110
Marketec, Inc., 27 Bowers Lane, Chatham NJ 07928
Microphor, Inc., 452 E Hill Rd., P.O. Box 1460, Willits, CA 95490

PAINTS—COATINGS—CORROSION CONTROL
American Abrasive Metals Co., 460 Coit St, Irvington NJ 07111
Palmer International, P.O. Box 8, Worcester, PA 19490
Unitor Ships Service, Unitor Marine Chemicals Division, 3 High St., Rickmansworth, Herts, WD3 1SW UNITED KINGDOM
White Metals Inc., 6300 Midvale, Houston TX 77087

PIPE-HOSE—Cargo Transfer Clamps, Couplings, Coatings, Supports
Aeroquip, 300 South East Ave., Jackson, MI 49203
Deutsch Metal Components, 14800 S. Figueroa, Gardena, CA 90248
Stauff Corporation, 21-23 Industrial Park, Waldwick NJ 07463

PORT SERVICES
Port of Iberia, P.O. Box 897, New Iberia LA 70561

PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines
Allison Gas Turbine Division, General Motors Corp., P.O. Box 420 Speed code U6, Indianapolis, IN 46206
Bird Johnson Company, 110 Norfolk St., Walpole, MA 02081
Bergen Diesel A/S, P.O. Box 924, N-5001 Bergen NORWAY
Bergen Diesel Inc., 2701 Delaware Ave., Kenner LA 70062
Boston Metals Co., 313 E. Baltimore St., Baltimore, MD 21202
Burmeister & Wain Alpha Diesel AS, DK-1400 Copenhagen K, Denmark
Caterpillar Inc., Engine Division, 100 N E Adams, Peoria IL 61629
Cincinnati Gear Co., 5657 Wooster Pike, Cincinnati, OH 45227
Calt Industries Inc. (Fairbanks Morse Engine Div.), 701 Lawton Avenue, Beloit, WI 53511

Combustion Engineering, Inc., Windsor, CT 06095
Deutz Corp., 7585 Ponce de Leon Circle, Atlanta, GA 30340
Fincantieri, Diesel Engines Division—GMT, Bagnoli della Rosandra 334, Trieste, ITALY
GE Naval & Drive Turbine Systems Department, 166 Boulder Dr., Fitchburg MA 01420
General Motors, Electro-Motive Division, LaGrange, IL 60525
KHD Canada Inc., 180 Rue de Normandie, Boucherville, Quebec J4B 5S7, Canada
KaMeWa, P.O. Box 1010, S-681 01 Kristinehamn, SWEDEN
Kohlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
Krupp MAK Maschinenbau GmbH, P.O. Box 9009, D-2300 Kiel 17, WEST GERMANY

Lips Propellers, 3617 Koppens Way, Chesapeake, VA 23323
Marine Gears, Inc., P.O. Box 689, Greenville MS 38707
Markisches Werk, Halve, P.O. Box 1442, D-5884 Halver WEST GERMANY
MAN B&W Diesel, 50 Broadway, New York, NY 10004
MAN B&W Diesel A/S, Ostervej 2, DK-4960 Hoelby, Denmark
MAN B&W Diesel A/S, Alpha Diesel, Niels Juels Vej 15, DK-9900 Frederikshavn Denmark
MAN B&W Diesel GmbH, Stadtbachstrasse 1, D-8900 Augsburg 1 Germany
MAN High Performance Diesels (Nurnberg), 160 Van Brunt St., Brooklyn NY 11231

Michigan Wheel Corp., 1501 Buchabab Ave., SW, Grand Rapids MI 49507
MTU of North America, 10450 Corporate Dr, Houston TX 77478
North American Marine Jet P.O. Box 1232 Benton, AR 72015
Northwest Marine Services Corp., 6452 So. 144th St., Tukwila WA 98168
Schottel-Werft, Josef Becker GmbH, KG, D-5401 Spay, WEST GERMANY
Sulzer Brothers, Dept. Diesel Engines, CH-8401 Winterthur, Switzerland
Sulzer/Escher Wyss, Ravensburg WEST GERMANY
Ulstein Maritime Ltd., 96 North Bend Street, Coquitlam BC CANADA V3K 6H1

Ulstein Propellers, N-6065 Ulsteinvik, NORWAY
Ulstein Trading Ltd. A/S, N-6-65, Ulsteinvik, Norway
J.M. Voith GmbH, Marine Division, Postfach 1940, 7920 Heidenheim/Brenz, WEST GERMANY
Voith Schneider America Inc., 121 Susquehanna Ave., Great Neck, NY 11021

Wartsila Power Inc., 5132 Taravella Rd., P.O. Box 868, Marrero, LA 70072
ZF of North America, Marine Sales, 500 Barclay Blvd, Lincolnshire IL 60069

PUMPS—Repairs—Drives
Del Gaudio, 207 W. Central Ave., Maywood, NJ 07607. Telex: 132610 DEL-MARINE
Goltens, 160 Van Brunt St., Brooklyn, NY 11231
Imo-Delaval, Inc., IMO Pump Division, Box 447, Monroe NC 28810
Jim's Pump Repair, 48-55 36th St., Long Island City NY 11101
Leitritz Corporation, 165 Chestnut St., Allendale NJ 07401
Megator Corporation, 562 Alpha Drive, Pittsburgh, PA 15238
Vita Motivator Co., 84 Wall St., Farmingdale, NY 11735
Wilden Pump & Engineering Co., 22060 Van Buren St., P.O. Box 845, Colton, CA 92324

REFRIGERATION—Refrigerant Valves
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, NY 11231

ROPE—Manila—Nylon—Hawsers—Fibers
Allied Signal Inc., Fibers Division, 1411 Broadway, New York, NY 10018
American Manufacturing Co., Cordage Div., P.O. Box 52125, Lafayette LA 70505
Samson, Phoenix St., Shirley, MA 01464

SANITATION DEVICES—Pollution Control
Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111
FAST Systems Inc., 1717 Sublette Ave., St Louis MO 63110
Microphor, Inc., 452 E Hill Rd., P.O. Box 1460, Willits CA 95490
Research Products/Blankenship (Incinalet), 2639 Anjon, Dallas, TX 75220

SCUTTLES/MANHOLES
L.S. Baier & Assoc., 7527 NE 33rd Dr., Portland OR 97211
Juniper Industries, 72-17 Metropolitan Ave., Middle Village, NY 11379
Mock Manufacturing Inc., 777 Rutland Rd., Brooklyn, NY 11203

SHIPBREAKING—Salvage
The River Smelting & Refining Co., 4195 Bradley Rd Cleveland OH 44109
The Tidell Explorations, Inc., 3121 S.W. Moody St., Portland, OR 97201

SHIPBUILDING EQUIPMENT
American Marine, P.O. Box 8126, New Orleans LA 70182
Hilman Inc., 2604 Atlantic Ave., Wall, NJ 07719
M.A.N.—GHH, Sterkrade Werfstrabe 112 D-4100 Duisburg 18, West Germany
MAN—GHH, P.O. Box 110240, D-4200 Oberhausen 11, West Germany
NEI Syncrolift, Inc., 8970 S W 87th Ct., Miami FL 33176
Portable Gun Drilling Systems Inc., P.O. Box 123, Auburn WA 98071

SHIPBUILDING—Repairs, Maintenance, Drydocking
Aluminum Boats Inc., 304 Midway Dr., River Ridge LA 70123
Astilleros Espanoles S.A., Padilla 17, 28006 Madrid, SPAIN
Avondale Industries Inc., P.O. Box 50280, New Orleans LA 70150
Bay Shipbuilding Corp., 605 N. 3rd Ave., Sturgeon Bay, WI 54235
Blount Marine, Box 368, Warren RI 02885
Bollinger Lockport & Larose, P.O. Box 250, Lockport LA 70374
Burmeister & Wain Skipsvaerft A/S, P.O. Box 2122, Refshaleoen, DK-1015 Copenhagen, DENMARK
Curacao Drydock (U.S.A.) Inc., 26 Broadway, Suite 741, New York, NY 10004

Danyards A/S, P.O. Box 719, DK-9900 Frederikshavn DENMARK
Equitable Shipyards Inc., Trinity Marine Group, Box 29266, New Orleans LA 70189
Fincantieri SpA Cantieri Navali Italiani, Via Cipro 11, 16129 Genoa ITALY
Houston Ship Repair, 1621 Woods Dr., P.O. Box 489, Channelview, TX 77530
Hyundai Corporation, ShipSales Dept., 140-2 Kye dong, Chongro-ku, Seoul, KOREA
Hyundai Mipo Dockyard Ltd., 456 Cheonha-Dong, Ulsan, KOREA
Keppel Shipyard Limited, 325 Telok Blangah Road, P.O. Box 2169, Singapore 0409

Koch Ellis Barge & Ship Service, P.O. Box 9130, Westwego, LA 70094
Paul Lindenau GmbH & Co., Schiffswerft u. Maschinenfabrik, D-2300 Kiel-Friedrichsort, West Germany
Lisnave, Apartado 2138, 1103 Lisbon, Codex PORTUGAL
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, WA 98134
M.A.N. GHH Sterkrade, P.O.B. 110240, D-4200 Oberhausen 11, West Germany
Marco, Inc., 2300 W Commodore Way, Seattle, WA 98199
Marinette Maine Corporation, Marinette, WI 54143
Munson Manufacturing, 150 Dayton, Edmonds WA 98020
Newport News Shipbuilding, 4101 Washington Ave., Newport News, VA 23607

Northwest Marine Ironworks, P. O. Box 3109, Portland OR 97208
Portland Ship Repair Yard, 5555 N Channel Ave., Portland, OR 97217
Ryan Marine Inc., P.O. Box 400, Port Bienville Industrial Park, Pearltoning MS 39572
Service Marine Industries, P.O. Box 3606, Morgan City LA 70381
Southwest Marine, Inc., P.O. Box 13308, San Diego, CA 92113
3 Maj Associates Shipbuilding Industry, P. O. Box 117, 51001 Rijeka YUGO-SLAVIA
Trinity Marine Group, Box 29266, New Orleans LA 70189
Versatile Pacific Shipyards, Inc., P. O. Box 86099, North Vancouver BC Canada

Wartsila Marin Industri AB, P.O. Box 1090, SF 00101 Helsinki, FINLAND
Zidell Explorations, Inc., 3121 S.W. Moody Street, Portland, OR 97201
Zodiac of North America Inc., Thompson Creek Rd., P.O. Box 400, Stevensville, MD 21666

SHIP MANAGEMENT
Texaco Marine Services Inc., P. O. Drawer 1028, Port Arthur, TX 77641

SIMULATOR TRAINING
Marine Safety International, Marine Air Terminal, LaGuardia Airport, NY 11371
SILENCERS
Riley-Beard, P.O. Box 31115, Shreveport, LA 71130

STUFFING BOXES
Johnson Rubber Co., Duramax Marine Div., 16025 Johnson St., Middlefield, OH 44062
Kohlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

SURVIVAL EQUIPMENT
Parkway/Imperial, 241 Raritan St., So. Amboy, NJ 08879
Viking Life Saving Equipment (America) Inc., 38 NW 11th St., Miami FL 33136

TANK CLEANING
Houston Ship Repair, 1621 Woods Dr., P.O. Box 489, Channelview, TX 77530
Marketec, Inc., 27 Bowers Lane, Chatham NJ 07928

TANK LEVELING INDICATORS
Imo-Delaval, Inc., Gems Sensors Division, One Cowles Rd., Plainville CT 06062
King Engineering Corp., P.O. Box 1228, Ann Arbor MI 48106
Marine Moisture Control, 60 Inip Dr., Inwood, NY 11696

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

TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.
Curtis Bay Towing, World Trade Center, Suite 800, Baltimore MD 21202
Jack Faulkner, 1005 W. Harimaw Ct., Metairie, LA 70001
McAllister Bros., Inc., 17 Battery Pl., New York, NY 10004

VALVES AND FITTINGS
Aeroquip, 300 South East Ave., Jackson, MI 49203
Bailey, Division of CMB Industries, P.O. Box 8070, Fresno, CA 93747
Cajon Co., 9760 Shepard Rd., Macedonia, OH 44056

Matatec Appoints Marindustry North American Representative For China State Shipbuilding

Matatec Marine International Ltd., Whitley Bay, U.K., the worldwide representative of the various ship repair yards throughout mainland China, has appointed Marindustry Worldwide, Inc., Mahwah, N.J., as North American representative for China State Shipbuilding Corporation Ship Repair Yards.

China's ship repair industry is divided into four main geographic areas: Dalian (one yard), Tianjin (four), Guangzhou (three), and Shanghai (seven) repair facilities which include graving docks and floating docks of all sizes up to 70,000 dwt. The largest drydock is located at Shanhaiguan Shipyard in the Tianjin area with a graving dock 240 meters long by 29 meters wide (about 787-1/2 feet by 95 feet).

Matatec Marine International Ltd. is associated with Matatec Hatch Cover Services International Ltd., which specializes in the modification and repair of cargo access equipment.

Marindustry Worldwide, Inc. is also USA representative for Arab Shipbuilding & Repair Yard, Bahrain; Clark Kincaid Ltd., Greenock; Fincantieri CNI, OARN Yard Genoa and Taran-to Yard; Halifax and Dartmouth Industries, Halifax, Nova Scotia; Stone Manganese Marine Ltd., Birkenhead; and Wilton Fijenoord B.V., Schiedam, the Netherlands.

For more information on China State Shipbuilding Corporation Ship Repair facilities or the other companies mentioned,

Circle 43 on Reader Service Card

Chemiquip Products Co., Inc., 3 W. 18th St., New York, NY 10011
Circle Seal Controls, Brunswick Corporation, P.O. Box 3666, Anaheim, CA 92803

Cla-Val Co., P.O. Box 1325, Newport Beach, CA 92663
Crawford Fitting Company, 29500 Solon Road, Solon, OH 44139
Deutsch Metal Components, 14800 S. Figueroa, Gardena, CA 90248
Elliott Manufacturing Co., Inc. (Remote Valve Operating Equipment), P.O. Box 773, Binghamton, NY 13902

Lexair Inc., Airmatic/Beckett, 299 Gold Rush Rd., Lexington KY 40503
Loeffler Machine, US #1 & Robbins Ave., Pennell PA 19047
Newman's Inc., 7500 E Redding Place, Box 1856, Tulsa OK 74101
Nupro Co., 4800 E. 345th St., Willoughby, OH 44094
PBM Inc., RD 6, Box 387A, Sandy Hill Rd, Irwin PA 15642

Pancoast Marine Division, Front & Porter St., Philadelphia, PA 19148
Parker Hydraulic Valve Division, 520 Ternes Avenue, Elyria, OH 44035
Parker Actuator Division, 9948 Rittman Road, P.O. Box 450, Wadsworth, OH 44281-0450
Parker Systems Division, 651 Robbins Drive, Box 3500, Troy, MI 48007-3500

Swagelok Company, 5171 Hudson Dr., Hudson, OH 44236
Tate Andale Inc., 1941 Landsdowne Rd., Baltimore, MD 21227
Teleflex Inc., 771 First Ave., King of Prussia, PA 19406
Waukesha Bearings Corp., 405 Commerce St., P.O. Box 798, Waukesha, WI 53186
Whitey Co., 318 Bishop Road, Highland Heights, OH 44143
Williams Valve Corp., 38-52 Review Ave., Long Island City NY 11101

VIBRATION ANALYSIS
DLI Engineering Corp., 253 Winslow Way West, Bainbridge Island, WA 98110
Vibranalysis Engineering Corp., 4380 S. Wayside, Suite 100, Houston TX 77087

WASTEWATER TREATMENT
EES Corporation/Omnipure, An Eltech Systems Company, 12850 Bourne-wood Dr., Sugarland TX 77478

WATER PURIFICATION TREATMENTS
Electrocatalytic Inc., 2 Milltown Ct., Union NJ 07083

WATER PURIFIERS
Alfa Laval Inc., 2115 Linwood Ave., Fort Lee NJ 07024
Atlas-Danmark Desalination Systems A/S, Stamholmen 93, 2650 Hvidovre (Copenhagen), Denmark
Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559
Riley-Beard, P.O. Box 31115, Shreveport, LA 71130

WEATHER CHART RECORDERS
Alden Electronics, 40 Washington St., Westborough, MA 01581

WELDING
Miller Electric Mfg. Co., P.O. Box 1079, Appleton, WI 54912
Welding Consultants of Wisconsin, 6517 Radburn Lane, Greendale WI 53129

WIRE ROPE
Sling Max, P.O. Box 2068, Aston PA 19014

WIRE ROPE LUBRICATION SYSTEMS
Atlantis Services, 1057 Kings Ave., Jacksonville FL 32207
Dynalube, The Kirkpatrick Group, 415 N. Loop 12 at Pioneer Dr., P.O. Box 150907, Irving TX 75014

WINCHES AND FAIRLEADS
Braden Carco Gearmatic, P.O. Box 547, Broken Arrow, OK 74013
Fritz Culver, Inc., P.O. Box 569, Covington, LA 70434
Gearmatic—see 'Braden Carco Gearmatic' above.
Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134
Nashville Bridge Co., P.O. Box 239 Nashville TN 37202
Smith Berger Marine Inc., 516 S. Chicago St., Seattle, WA 98108

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

WINDOW WIPERS
Marketec, Inc., 27 Bowers Lane, Chatham NJ 07928

WIRE AND CABLE
Seacoast Electric Supply Corp., 225 Passaic St., Passaic, NJ 07055
Seacoast Electric Supply Corp., 1505 Oliver St., Houston, TX 77007

U.S. Navy Frigate Ingraham Launched By Todd Pacific Shipyards

The Los Angeles Division of Todd Pacific Shipyards Corporation recently launched the U.S. Navy guided-missile frigate USS Ingraham (FFG-61) at ceremonies at the San Pedro yard.

The principal speaker at the event was the Hon. **Elton Gallegly**, Congressman, 21st District, California. The ship's sponsor was Mrs. **Dudley L. Carlson**, wife of Vice Adm. **Dudley L. Carlson**, USN. The matron of honor was Mrs. **Cynthia R. Furlong**.

Other principals at the ceremony included Rear Adm. **Peter M. Hekman Jr.**, Deputy Commander Surface Combatants, Naval Sea Systems Command; Capt. **Robert H. Randall**, USN, Supervisor for Shipbuilding, Conversion and Repair, Long Beach; **John T. Gilbride Jr.**, president, Todd Shipyards Corporation; and **Richard L. Grothen**, vice president and general manager, Todd Pacific Shipyards, Los Angeles Division.

The Oliver Hazard Perry Class frigate has a displacement of 3,585 tons, length of 445 feet, beam of 45 feet and is powered by two GE LM2500 marine gas turbine engines.



The USS Ingraham (FFG-61) is powered by GE LM2500 marine gas turbines.

She is the 18th frigate of this class launched by the Los Angeles Division.

For literature detailing the shipbuilding services of Todd Pacific Shipyards,

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MarineSafety Conducts Trident Team Training For USN With Simulators

A special close-in navigation and maneuvering course was recently conducted for 15 officers and men of the soon-to-be commissioned USS Tennessee, the first Trident II submarine. The submarine team training is a new course conducted by MarineSafety International at its Newport, R.I., simulator complex. For the past two years MarineSafety has been conducting shiphandling training for up to 1,000 officers a year who are attending the Surface Warfare Officers School. Over 15 types of Navy ships and numerous ports are simulated to provide training for Surface Officers prior to at-sea assignments. Four visual shiphandling ship simulators were utilized for the Trident training.

MarineSafety's instructors for the course were experienced submarine commanders recently retired from the Navy. They worked in close cooperation with the sub's present commanding officers (Blue and Gold Crews).

Similar courses are planned for other Trident pre-commissioning crews and the training is expected to be made available for other types of operational submarine crews.

MarineSafety, a professional training organization, is a wholly owned subsidiary of FlightSafety International, with corporate headquarters at LaGuardia Airport, New York. MarineSafety operates simulator research and training facilities at Kings Point, N.Y., and Newport, R.I.

For more information and free literature from MarineSafety International,

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MHI To Construct Biggest Cruise Ship Ever Built In Japan

Mitsubishi Heavy Industries (MHI) has received an order to build a 960-passenger cruise ship from Japanese shipowner Nippon Yusen Kaisha (NYK Line). At 49,000 gross tons, she would be the biggest cruise ship ever built in Japan.

To be built at MHI's Nagasaki yard, the cruise ship will have a length of about 787 feet, breadth of 97 feet and draft of 24.6 feet. Her propulsion machinery will be diesel electric, with four sets of MAN B&W medium-speed diesel engines each developing 11,750 bhp at 400 rpm. These engines will generate electricity through four 8,200-kw generators and one auxiliary, distributing power through 6.6 kv main switchboard to two cyclo-converters. The electric power will be used

in part to drive two propulsion motors of 11,500 kw each, as well as two controllable pitch propellers. The ship will also be equipped with two bowthruster units.

Due for completion in the first half of 1990, she will be the first Japanese cruise ship specifically aimed at the lucrative U.S. market. She has a proposed cruising itinerary which includes the Far East in the spring, Alaska/Vancouver in the summer, the west coast of Mexico/Panama Canal/Caribbean for autumn and the South Pacific/Oceania/Southeast Asia for winter.

On her 12 decks, this luxury liner will have two restaurants, several lounges, a night club, cafe, cinema, casino, card room, disco, gym, sauna, spa, jacuzzi, boutique and a beauty salon. She will feature luxurious passenger accommodations.

For free literature full detailing the shipbuilding facilities of MHI,

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New Fuel-Saving, Cost-Cutting Computerized System For Workboats Offered By Advanced Control Systems

Detailed Brochure Available

Advanced Control Systems (ACS) Incorporated, Houston, Texas, reports that fleet and boat operating costs can be reduced for more profitable operations with the installation of their new Boat Operating Systems (BOS).

The Boat Operating System accurately senses the rpm of each engine, fuel burn-rate of each engine and ground speed developed from a Loran C input. The data, which is continuously stored on a disc in a microcomputer, is displayed by bar graphs in real-time on a large display screen in the pilothouse of the boat. By providing consistent and reliable data on engine functions and water conditions, BOS allows the captain to quickly adjust his controls to achieve maximum available operating efficiency with a minimum consumption of fuel and oil. Setting the throttle to a lower rpm translates to saving money—most of the time reducing fuel costs

by a reported 15 percent or more.

Fuel and lube oil savings are just some of the benefits offered by the BOS. Because the captain has reduced his rpm and is still accomplishing the same work with his boat, the engine is running at lower pressures and temperatures. The net result is less mechanical wear, reduced maintenance and repair costs along with lower lubrication and replacement expenses.

Boat Operating Systems are designed and manufactured for inland and open seas operators. These boat operating systems have been designed to improve fleet performance. ACS reports that BOS is producing lower operating costs, reduced maintenance expenses and reliable engine performance.

A new descriptive brochure on the Boat Operating System from ACS is available. For your copy,

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PROPULSION UPDATE

Wartsila Vasa 46 Main Engines To Power UBC's New RO/RO Vessel Building At HHI In Korea

English United Baltic Corporation's new RO/RO vessel will be equipped with Wartsila Diesel's Vasa 46-type main engines. The 13,000-dwt vessel, under construction at Hyundai Heavy Industries' shipyard in Ulsan, Korea, will have a father-and-son main engine installation consisting of one six-cylinder and one nine-cylinder Vasa 46 engine. The total output of the machinery is 13,600 kw.

The new vessel, which is bigger than any of UBC's existing ships, will be delivered in July 1989 and is scheduled for traffic between the U.K. and Finland. The vessel is ice-strengthened to 1A Super standards and the advanced propulsion machinery allows optimized operation regardless of route and output need. The main engines will be manufactured at Wartsila Diesel's new production facilities in Turku, Finland, and they will be delivered to the shipyard by the end of the year.

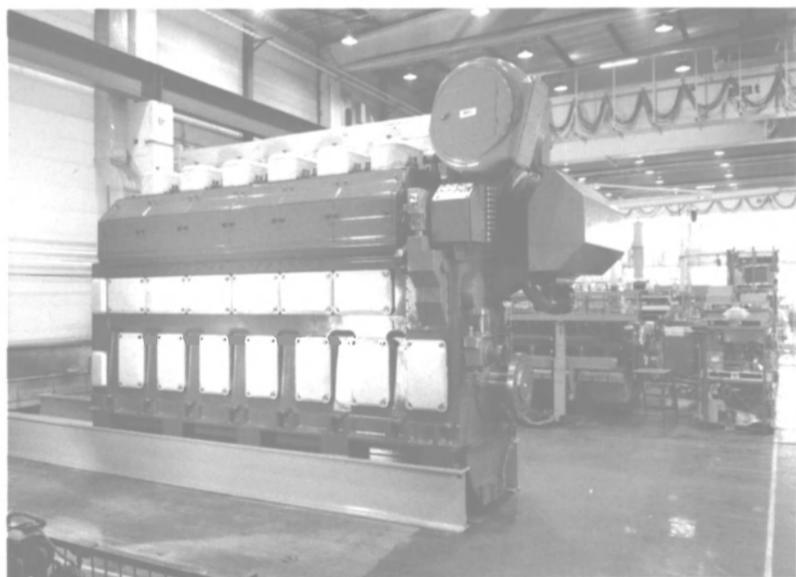
The Wartsila Vasa 46 selected for the new UBC vessel is an innovative medium-speed heavy fuel engine designed for maximum operational reliability. The Vasa 46 was

launched in June last year and has awakened great interest in the market. The most significant design features of the Vasa 46 are the thick-pad bearing technology for reduced bearing loads, the SwirlEx charging system for high efficiency, and Twin Injection, the double injection system for a high rate of combustion and low fuel consumption. The anti-shake technology of the Vasa 46 includes rigid engine structure, full balancing and resilient mounting.

The first Vasa 46 engine will be delivered this month to the J.J. Sietas shipyard in Hamburg, where it will be installed as the main engine for the German Schiffahrtsgesellschaft Odin KG's new RO/RO vessel. The Vasa 46 is offered in four-, six-, eight- and nine-cylinder in-line versions and in 12-, 16-, and 18-cylinder V-versions. The output range of the engine is 3,600-16,300 kw and the speed range 450-514 rpm.

For more information and free literature on the Wartsila Vasa 46 engine,

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United Baltic Corporation's new RO/RO vessel will be equipped with Wartsila Vasa 46 main engines. Shown above is a six-cylinder version of the engine.

\$1.7-Billion Order For Four Greek Frigates Won By Blohm And Voss AG

A \$1.7-billion order from the Greek Navy for four MEKO-class frigates has been won by Blohm and Voss AG of Hamburg, West Germany. The order includes electronic and weapons systems which will be financed by credits under the U.S.

Foreign Military Sales program.

Blohm and Voss's Hamburg facility will construct the first frigate, while the remaining three will be assembled from components supplied by the West German firm to Hellenic Shipyards Co., Scaramananga, Greece. The Greek contribution to the project is valued at about \$200 million. The project is reported to be the largest purchase by the Greek Navy in years.



Munson Manufacturing, Edmonds, Wash., recently completed this 35-foot pilot boat for the San Francisco Bar Pilots Association.

Munson Manufacturing Delivers Volvo-Powered Pilot Boat

Boat Designed For Heavy Seas Beyond San Francisco's Golden Gate

Munson Manufacturing, based in Edmonds, Wash., has delivered a new 35-foot pilot boat to the San Francisco Bar Pilots Association, which was specially designed for the heavy seas beyond San Francisco's Golden Gate. The Hammerhead type vessel is now in service picking up pilots who guide larger vessels in and out of San Francisco Bay.

The boat is propelled by a pair of Volvo AQAD41 engines with Volvo 290 dual props. The power steering package incorporates a Morse rotary cable helm and steering cable and Volvo power steering. Propulsion guidance involves a Morse MT-2 dual engine, single lever control. Morse controls are also installed at a second, remote control station at the dive door.

The engine room was insulated with Barrier 104, and the whole vessel utilizes sprayed foam for insulation and flotation. Engine spaces are protected by a Firelay manual halon system.

Electrical power underway is provided by the engine-driven 24-vdc system through a BIC breaker panel. A Marinco 30-amp shore power inlet also was provided. Lights on the boat include the Warn-A-Light Model 851 white strobe on the roof, Jabsco 14780 150-amp quartz floodlights, Perko 2-1/2-inch mast and pole light, Jabsco remote spotlight, Heller navigation lights, Morse docking light, and Guest 807-2R dome lights.

Cabin windows encompass a three-section windshield, four sliding windows, and two fixed windows aft. Sea Glaze provided a watertight cabin door. The enclosed head is from Rariton Crown and discharges into a 20-gallon flush, fill, and vent freshwater system uses Jabsco pressure water pump.

Electronics in the vessel include a RAY 410 loud hailer with outside speaker, Robertson AB100DL auto-

pilot with an F100 remote at the dive door; Furuno FR 803-D radar; and a rack is provided for five handheld radios.

For free literature fully detailing the boatbuilding services and facilities of Munson Manufacturing,

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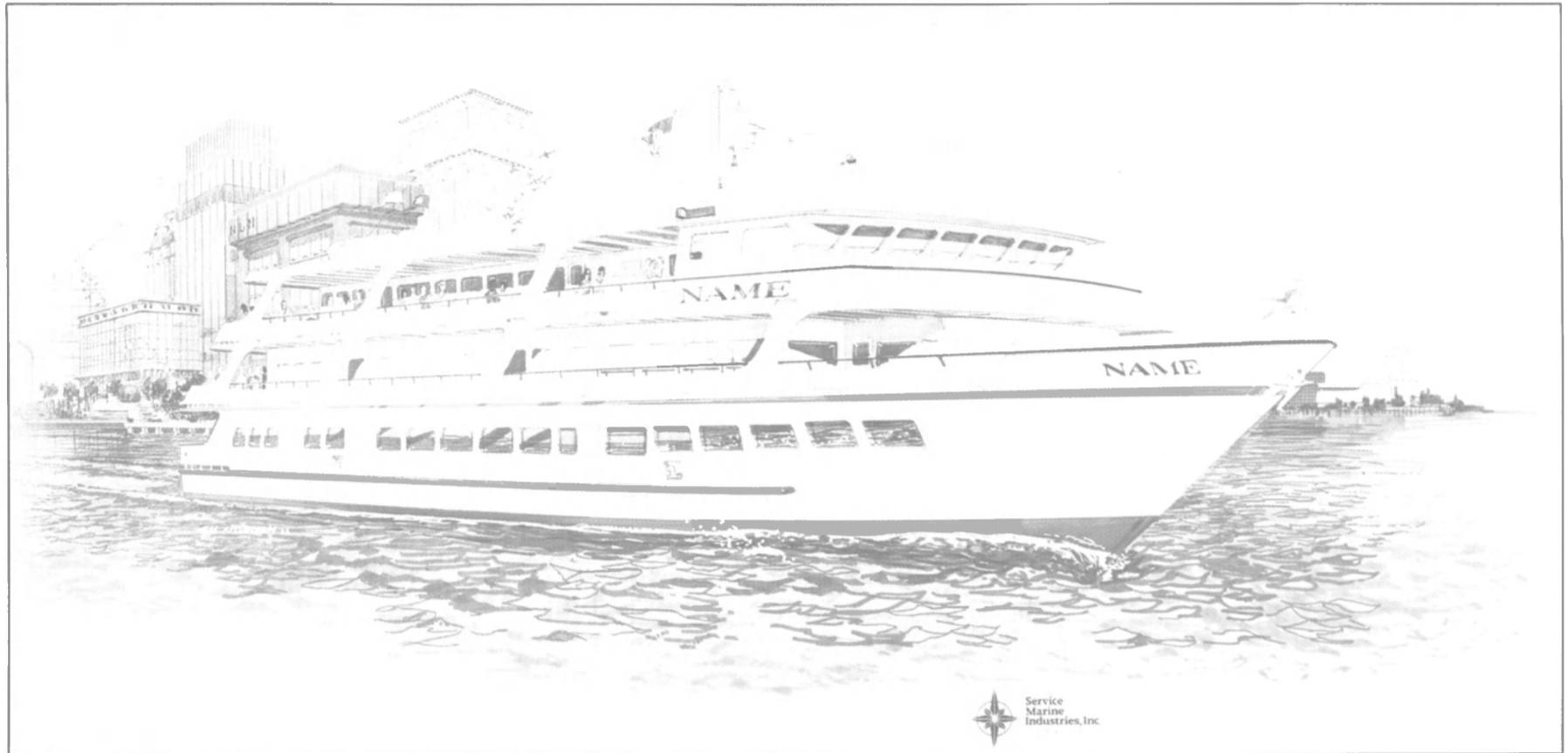
PILOT BOAT Equipment List

Main engines (2)	Volvo
Propellers	Volvo
Propulsion controls	Morse
Power steering	Volvo
Autopilot	Robertson
Radar	Furuno
Breaker panel	BIC
Pressure water pump	Jabsco
Shore power inlet	Marinco
Floodlights	Jabsco
Mast & pole light	Perko
Remote spotlight	Jabsco
Navigation lights	Heller
Docking light	Morse
Dome lights	Guest
Horn	Seaday
Halon system	Firelay
Heater	Red Dot
Cabin door	Sea Glaze
Head	Rariton Crown
Life raft	Avon

Maj. Gen. Henry J. Hatch Named Chief Of Engineers By President Reagan

Maj. Gen. Henry J. Hatch was recently nominated by President Reagan as the next Commanding General and Chief of Engineers of the U.S. Army Corps of Engineers. When confirmed by the U.S. Senate, he will succeed Lt. Gen. E.R. (Vald) Heiberg III, who retired last month. General Hatch, currently Director of Civil Works in the office of the Chief of Engineers, has also been nominated to the grade of lieutenant general.

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We will build to your design, or you can use our complete in-house services from design and engineering to global warranty assistance. We also handle your spare parts requirements promptly and accurately.

Each of our six shipyards specializes in certain vessels and each is staffed by shipbuilding experts supported by advanced computer aided design and manufacturing.

You receive personal attention—whether your requirements are small or large. Our list of satisfied repeat customers includes some of the smallest, and largest operators in the world. That's because each shipyard is a separate cost center and self-reliant.

They do benefit from centralized administrative functions which reduce their costs—and yours. Our shipyards also gain from the considerable resources of our parent company, Trinity Industries, Inc.

The experience gained in building over 9000 vessels pays dividends in every boat we build. No other shipbuilder in the world can match our record in production, adaptability, innovation, stability, and quality.

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