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New York Harbor becomes the focal point once again for the Annual Society of Naval Architects and Marine Engineers Conference and the 10th International Maritime Exposition.

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Improving Current Strategic Sealift 64

Petrobras To Purchase Dow Chemical Rig For \$75 Million

Petrobras, the Brazilian state-owned oil company, is set to purchase the third-generation rig Sovereign Explorer from Dow Chemical for around \$75 million.

The Sovereign Explorer is to become a production unit for the Marlim or Albacore fields in the deep waters of the Campos Basin. The semisubmersible rig will probably start as a drilling unit on the fields prior to undergoing conversion to a production unit capable of handling between 80,000 and 100,000 barrels per day at a Brazilian shipyard.

The Sovereign Explorer, a GVA4000 design built in 1984 by Cammell Laird in Birkenhead and completed in Sweden, is considered one of the best third generation rigs in the North Sea.

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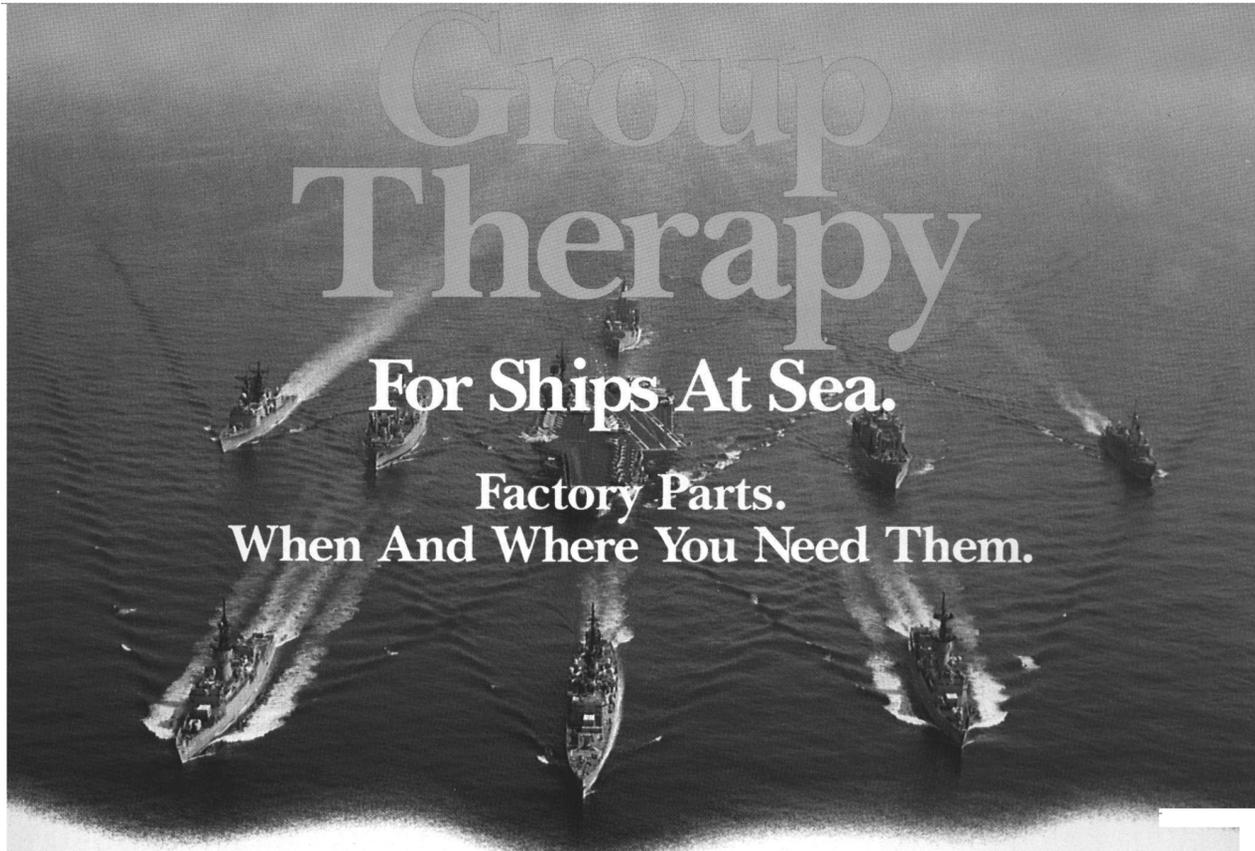
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GE Steam Team

**Carnival Cruise Lines
Contracts For New Ship**

Carnival Cruise Lines has signed a contract with Kvaerner Masa-Yards for construction of an additional 70,000 gross-registered-ton SuperLiner. The new vessel, to be named Fascination, will cost in excess of \$315 million and will be a sister ship to the Sensation which is already under construction at Kvaerner Masa-Yards.

The Finnish yard previously delivered the 70,000-ton SuperLiners Fantasy and Ecstasy to Carnival. The Sensation is scheduled for delivery in late fall of 1993, with the Fascination expected in the early fall of 1994.

According to Kvaerner Masa-Yards' president and CEO **Martin Saarikangas** this order is of extreme importance to the yard in a time when few shipbuilding orders are being placed in the world.

According to Carnival chairman

and CEO **Micky Arison**, it was the delivery of the line's newest ship, the M/S Ecstasy, which began service in June, that motivated the company to accelerate its plans for newbuildings. "The Ecstasy went far beyond our highest expectations which were based on the success of the Fantasy a year earlier. Not only has Ecstasy set and broken our passenger records several times, but passenger acceptance was so enthusiastic we were compelled to order the Fascination," Mr. **Arison** said.

He added that the popularity of these two ships demonstrates that they are equally well-suited for either the three- and four-day or seven-day market.

Mr. **Arison** said that though no decisions have been made on the itineraries of either ship, the addition of the Fascination will present some interesting possibilities for fleet-wide ship deployment. Mr. **Arison** said the company was exploring a variety of options including the redeployment of a vessel or vessels outside the North American cruise market.

Carnival is one of the world's largest cruise lines based on number of passengers carried. Together with Holland America Line and Windstar Cruises, it currently operates 176 ships in Alaska, the Caribbean, South Pacific and the Orient. The company also operates Carnival's Crystal Palace Resort & Casino, a 1,550-room property in Nassau, Bahamas. Carnival also has contracted to construct three new ships for Holland America Line. The first of these, the Statendam, is scheduled for delivery in late 1992, with the second, the Maasdam, and third, the Ryndam, to be delivered in late 1993 and 1994, respectively.

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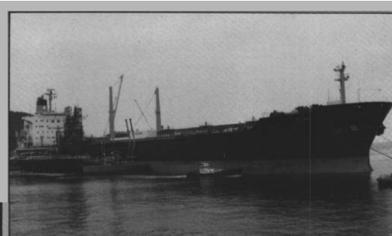
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**Marine Society Of N.Y.
To Hold Annual Dinner
April 6, 1992, In NYC**

The Marine Society of the City of New York, formed in 1770, will hold its annual dinner on April 6, 1992, at the Downtown Athletic Club.

The Society is a charitable and educational organization, the regular membership being composed entirely of shipmasters, all of whom must be, or have been, captains of merchant vessels under the United States flag. It was formed in colonial days, and formally chartered by King George III in 1770 to "...improve maritime knowledge and relieve indigent and distressed shipmasters, their widows and orphans..."

From that day to this, the Society has endeavored to improve maritime knowledge, and it has relieved, insofar as it is able, the needs of over 5,000 distressed shipmasters, their widows and orphans. Today, it has masters' widows on a monthly allotment basis, many of whom require advice, counsel and assistance to their allotment. President George Washington was among the early honorary members of the Society.

Among the records of the Society, covering a span of more than two centuries, many achievements stand out: a respected member, Capt. Robert Richard Randall, in the year 1801 provided the foundation of Sailor's Snug Harbor, the only institution in America accepting old or disabled seamen free of charge for life. The president and first vice president of the Marine Society of New York are, by office, members of the board of trustees of Sailor's Snug Harbor.

For more information,
Circle 40 on Reader Service Card

**Barge Industry Says
USCG Proposal Could
Paralyze Oil Transport**

The U.S. Coast Guard has proposed that all petroleum-carrying ships and barges operating in U.S. waters be able to provide proof they have new, higher levels of insurance sufficient to pay the cleanup costs of a major oil spill—or stop operating. But the tug and barge industry, which transports almost 30 percent of all U.S. petroleum, claims that if implemented, the rule would shut down the waterborne movement of petroleum—including gasoline, diesel fuel, home heating oil, lube oils and other petroleum products in many coastal areas of the U.S.

"Many coastal states are totally dependent on waterborne transportation of oil for the bulk of their citizens' energy requirements. This proposal is big trouble for energy consumers," said **Joe Farrell**, president of the American Waterways

Operators (AWO), the primary trade association of the tug and barge industry.

The Coast Guard proposal is an outgrowth of the Oil Pollution Act of 1990, a bill passed by Congress last year in the wake of the Valdez spill. Among other provisions, the bill requires the Coast Guard to develop rules to enforce the requirement that all petroleum transportation companies carry a Certificate of Financial Responsibility (COFR) for each vessel—proof that they can fully cover their liability for a catastrophic spill.

Insurance companies in the U.S. and abroad have stated they will refuse to issue the insurance guarantees necessary to comply with the new requirements. Without such guarantees, virtually all petroleum transport companies must cease operations.

"One can infer from the Coast Guard's proposed rule that the new requirements for COFRs are manageable, when in fact, they are not," said Mr. **Farrell**. "Arguably, the

Coast Guard has been caught between the Congress—which was frenzied by the Valdez spill when it passed the new Oil Pollution Act—and the insurance industry, which claims it cannot provide the necessary guarantees for companies to get a COFR. Without a COFR, petroleum transport vessels cannot operate."

Mr. **Farrell** noted that the Coast Guard intends to conduct a regulatory impact study in order to determine the economic effects of its proposal. "To the extent that the proposal has redeeming qualities, it is by its stated requirement to conduct a regulatory impact study, and publish it before the Coast Guard publishes its final rule on this issue. The answers to the questions about economic impact should make an irrefutable case that something has to give. AWO intends to help make this case, directly from the industry it represents, and indirectly by working with allied industries and American consumers of energy."

**Turner Marine Fleeting
Begins Operations
In New Orleans**

Turner Marine Fleeting, Inc., a full-service fleeting and harbor service company in New Orleans, recently commenced operations. The company's headquarters and primary operations are located at mile 64.1 on the Mississippi River Gulf Outlet (mile 10 on the Intercoastal Waterway, east of the Harvey Locks).

Turner Marine Fleeting provides fleeting, shifting, tug assist services, barge cleaning, cover stacking and spreading, according to Capt. **Kenny Montz**, operations manager of the new firm. Mr. **Montz** notes that up to 72 jumbo hopper barges can be serviced and fleeted at the company's location.

For free literature giving more information on Turner Marine Fleeting,

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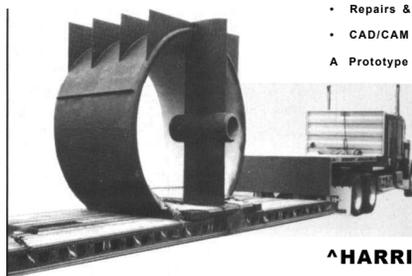
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Litton Awarded Contract To Develop Hull-Mounted Fiberoptic Sub Sonars

Litton's Guidance & Control Systems division, Woodland Hills, Calif., has been selected by the U.S. Navy to develop and demonstrate the operational advantages of hull-mounted submarine fiberoptic sonars.

Litton officials said the \$5.8 mil-

lion, two-year program, awarded by the U.S. Navy's Underwater Systems Center, New London, Conn., is aimed at providing expanded data handling capacity in a less complex system, as well as demonstrating the substantial weight and cost reduction potential of planar arrays built from new structural materials coupled with fiberoptic acoustic sensors and optical telemetry.

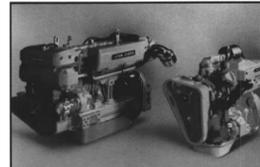
Litton will manage the program, design and develop the fiberoptic acoustic sensor, telemetry and ship-

board fiberoptic-related electronic and electro-optic equipment.

General Electric will integrate the system into the submarine's combat system and Martin Marietta will design and fabricate the mechanical structure that houses the system's acoustic devices and couples it to the vessel's hull.

Under a separate, but parallel contract, General Electric and Martin Marietta are developing the BSY-2 antisubmarine combat system for the Seawolf (SSN-21).

John Deere Enters Marine Engine Market



Two new marine engines are available from John Deere—the 250-hp 6-cylinder 6076AFM (left) and the 4-cylinder 80-hp 4039DFM.

For years John Deere has been a leader in the agricultural machinery market. Now, that expertise is going to work on the water as Deere Power Systems Group (DPSG) introduces its first marine diesel engines. The first two in a series of marine engines are available now for purchase in North America, and a worldwide offering is scheduled for 1992.

While these marine engines are the first offered by DPSG, John Deere engines have long been a presence on the water. For years, various companies have purchased Deere industrial engines and marinized them to meet their particular requirements.

The first official involvement Deere had in marine applications was back in the early '70s with American Marine Company of Singapore, explained **Michael Shaw**, product market manager during DPSG's development of the marine engine.

John Deere has built more than three million diesel engines in its three manufacturing facilities worldwide since 1949. The company markets its engines through 21 distributors in North America (Canada, the U.S. and Mexico) and more than 30 distributors in Europe, Central and South America, the Middle East, Africa and the Asian Basin.

For further information on Deere Power Systems,

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Ingalls Awarded Additional \$27.2 Million Contract By U.S. Navy

The U.S. Navy has awarded Ingalls Shipbuilding division of Litton, Pascagoula, Miss., an additional \$27.2 million contract to provide continuing engineering and support services for the Navy's Ticonderoga (CG-47) Class Aegis guided missile cruiser program.

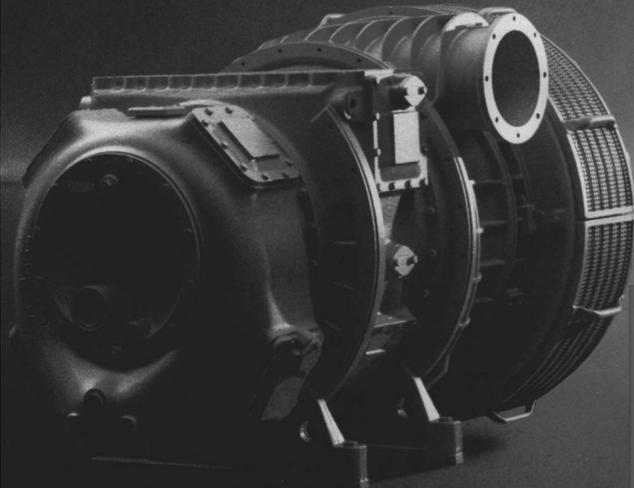
This funding brings to \$230 million the total amount awarded to Ingalls since 1981 to provide services in support of the entire Aegis cruiser class. Ingalls provides the Navy with engineering design, training support, logistical support, data management, and configuration management for the Aegis cruiser program.

For free literature on the facilities and capabilities of Ingalls Shipbuilding,

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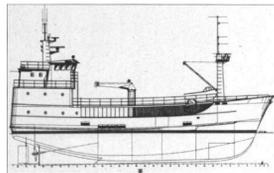
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Caterpillar-Powered Fishing Vessel Delivered By Rodriguez Boat Builders



Profile drawing of the Caterpillar-powered Pacific Monarch.

A trend toward more versatile fishing vessels may be established by a new craft, the Pacific Monarch, built by Rodriguez Boat Builders, Bayou La Batre, Ala., for service in Alaska and the Bering Sea.

In recent years, fishing vessel designers and builders have been caught in a squeeze of conflicting requirements. Competitive pressures demand more efficiency in handling and preserving product for stowage, causing the newer vessels to be more specialized. On the other hand, shorter and shorter seasons force the specialized vessels to either spend a lot of time tied up in the off-season, or adopt makeshift measures to fish in ways for which they are not designed.

In the Pacific Monarch, Elliott Bay Design Group has produced an arrangement that offers relatively quick, inexpensive conversion, allowing operations as either a longliner or a crabber. In either configuration she is properly arranged and outfitted, as if designed to specialize in the task at hand.

According to Ken Lane, Elliott Bay's vice president and leader of the Pacific Monarch project, the two keys to ease of conversion are the hold arrangement and resolution of the conflicting deck space needs of the two types of vessel.

The Pacific Monarch resolves the hold problem by providing insulated, refrigerated hold compartments that may be used for storage of fish on one voyage and flooded for crab on the next trip.

Except for the conversion features, the 125-foot-long by 34-foot-beam vessel is conventional. The hull is steel, designed per ABS and USCG rules. Propulsion power is provided by a pair of 2624-hp Caterpillar engines, and the three diesel generators have a total capacity of 685 kw.

For free literature on the capabilities and facilities of Rodriguez Boat Builders,

Circle 58 on Reader Service Card

AT&T Signs \$49.5-Million U.S. Navy Contract For EMSP Modifications

AT&T has signed a \$49.5 million contract with the U.S. Navy for modifications to its Enhanced Modular Signal Processor (EMSP). The modifications include the development of a water-cooled enclosure for subma-

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rines and a new helicopter enclosure. Other modifications include the development of new circuit card modules, custom integrated circuits (ASICs), and additional software development.

Built to the Navy's Standard Electronic Module Format E (SEM E) specifications, the EMSP is being tailored to user needs under the Acoustics Systems Integration Program (ASIP) to further enhance antisubmarine capabilities of Navy submarines, helicopters and surface

ships.

Long a Navy standard, the EMSP, built by AT&T to support a fleet-wide upgrade of ASW systems, will give the Navy a much needed edge in locating submarines that are increasingly quiet and therefore difficult to detect.

The new EMSP contract will be managed at AT&T Federal Systems' Guilford Center facility near Greensboro, N.C., with design and engineering support from AT&T Bell Laboratories in Whippany, N.J.

Electric Boat Receives \$3.2 Million Contract For Submarine Work

The Electric Boat Division of General Dynamics, Groton, Conn., has received a \$3,252,117 contract to perform all efforts to prepare for the maintenance, repair, alterations, testing and routine work on the Los Angeles Class attack submarine USS Dallas (SSN-700).

Would You Believe It?



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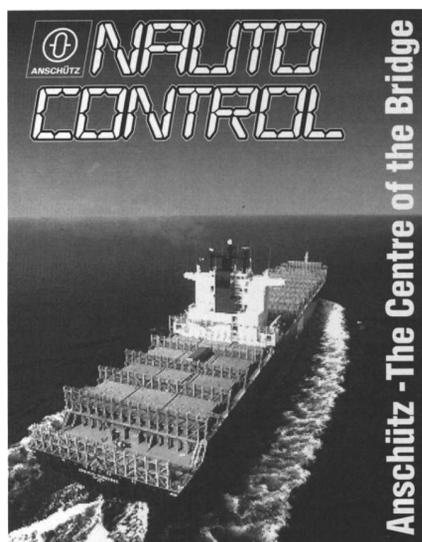
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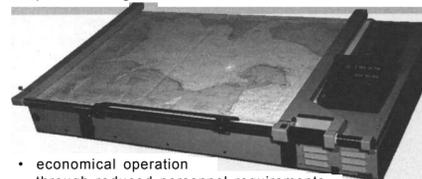
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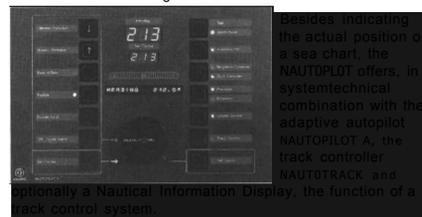


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FELS Completes Galaxy I, \$100 Million Jackup Rig

Far East Levingston Shipbuilding Ltd. (FELS) has completed Galaxy I, which it calls one of the world's most capable jackup rigs, to the satisfaction of its owner, Santa Fe Drilling Operations, Inc.

In recognition of a job well done, Santa Fe is paying FELS a special bonus of about \$1 million.

Galaxy I is the third jackup rig delivered by FELS to Santa Fe. Built at a cost of approximately \$100 million, it took slightly more than two years to complete. The rig was delivered to Santa Fe at FELS' Pioneer Yard and left Singapore on board a special vessel for Rotterdam, where it will be deployed for oil and gas exploration in the North Sea.

Galaxy I, which contains the most advanced technologies, can withstand higher waves and more ad-

verse weather in deeper waters than other jackups in service today, providing the capability for employment where other jackups can't function.

FELS is presently building a fourth Santa Fe harsh environment cantilever jackup for delivery in 1992.

For free literature on the facilities and capabilities of FELS,

Circle 31 on Reader Service Card

Marinette Marine Delivers Third MCM To U.S. Navy



The USN mine countermeasures ship Patriot (MCM-7) built by Marinette Marine Corporation.

Marinette Marine Corporation, Marinette, Wis., recently turned over the mine countermeasures ship Patriot (MCM-7) to the U.S. Navy. The event is the last significant milestone for the MCM-7 and marks the culmination of 10 years of Marinette Marine Corporation (MMC) involvement in mine countermeasures vessel design and construction for the Navy.

The MCM-7 is the third mine countermeasures ship to be built by MMC. The ship is 224 feet long, approximately 39 feet wide, and displaces approximately 1,300 tons when fully loaded. The placement of the Patriot and her sister ships into the U.S. Navy fleet provide a quantum increase in mine countermeasures capability.

The MCM-7 will remain at Marinette Marine for approximately two months to allow the Navy crew to complete the crew training necessary to safely operate the ship while transiting to its home port of Charleston, S.C.

For free literature detailing the facilities and capabilities of Marinette Marine,

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U.S. Shipyards Win Navy Repair Pacts

A number of Navy repair and maintenance contracts were recently awarded to U.S. yards on the East and Gulf Coasts.

In the Northeast, American Shipyard of Newport, R.I., was awarded a \$1.02 million contract for the selected restricted availability on the frigate USS Samuel B. Roberts (FFG-58).

In Virginia, Marine Hydraulics International of Norfolk was awarded a \$317,000 contract for ship repairs on the aircraft carrier USS Kitty Hawk (CV-63).

Other Norfolk repairers, Dreadnought Marine and The Jonathan Corporation, were also awarded contracts. Dreadnought Marine was awarded a \$139,052 contract for ship work on the USS Hunley (AS-33), while Jonathan Corporation will perform repairs on the cruiser USS Thomas S. Gates under a \$1.59 million contract.

In Orange, Texas, Century Marine, Inc. is performing repairs on the crane ship S.S. Green Mountain under a \$1.68 million pact.

Boats & Barges

180-Foot Supply Boat Converted To Standby/Rescue Vessel By Steiner Shipyard



The Veesea Typhoon has been rebuilt to ABS standards, Maltese Cross A-I hull, equipment and AMS machinery, ABS International Loadline and USCG OSV certification.

Steiner Shipyard, Bayou LaBatre, Ala., has completed the conversion of a 180-foot oil field supply boat into a standby/rescue vessel for use in the U.K. sector of the North Sea. The Veesea Typhoon is one of four standby/rescue vessels that will be operated by a joint venture between Vector Offshore, an English firm, and Seacor Marine, Inc. of Morgan City, La.

Converting the Veesea Typhoon to its new role involved returning the ship's mechanical systems to good working order, the addition of a two-level 44-foot by 30-foot rescue

module located aft of the main superstructure, updating crew quarters and the galley to accommodate 20 people, sandblasting and repainting the hull, and updating electronic navigation and communications equipment in the pilothouse.

To allow the vessel to combat the higher sea states often encountered during the winter months and to provide a more comfortable environment for the survivors, the bow and the bulwarks were raised and strengthened on the vessel. The pilothouse was also lifted for better visibility and enhanced safety.

Conversion of the Veesea Typhoon was extensive, according to Russell Steiner, president of Steiner Shipyard. Mechanical systems work included rebuilding both of its Caterpillar D-399 engines to bring them in compliance with ABS specifications. The two Caterpillar 3406 gensets were also rebuilt. A bow thruster, powered by a Caterpillar 3406 diesel only needed repair to its air starting system.

The major addition to the vessel was the construction of the rescue module consisting of forward and aft treatment areas, a hospital ward with bunks for 18 persons, a survivor reception area fitted with seating for 13 persons, a mortuary, survivor berths for 36 persons in a two-tier arrangement and survivor seating for 96 persons, also located on

both levels. Port and starboard rescue zones lead directly into the two level rescue module.

Aft of the main superstructure and the rescue module is the main cargo deck for transportation of offshore cargo and equipment. This area also holds two 15-man rescue craft that will be added to the boat when she reaches her port in Leith, Scotland.

Conversion of the Veesea Typhoon is the fourth vessel Steiner has built recently for Seacor Marine. Steiner just delivered the third of three new 225-foot supply boats to Seacor.

For free literature detailing the facilities and capabilities of Steiner Shipyard,

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Navy Awards Initial Design Contracts For Sealift Ships

The award of contracts to develop concept designs for strategic sealift medium-speed, roll-on/roll-off ships of two sizes, 950 feet and 700 feet, was recently announced by the U.S. Navy.

Nine shipyards received contracts, each of which carries a value of about \$250,000.

The yards (in alphabetical order) are as follows: Alabama Shipyard, Mobile, Ala.; Avondale Industries, New Orleans, La.; Bath Iron Works, Bath, Maine; Halter Marine, Gulfport, Miss.; Ingalls Shipbuilding, Pascagoula, Miss.; Los Angeles Shipyard Corporation, Los Angeles, Calif.; National Steel & Ship-

building, San Diego, Calif.; Newport News Shipbuilding, Newport News, Va.; Tampa Shipyards, Tampa, Fla.

The request for preliminary designs came in anticipation of a Pentagon mobility requirements study due this month, a Navy official said. That study will define more clearly the mix of new and used vessels and aircraft needed for military sealift operations.

The design phase, which should be completed by the end of the year, will be followed by the Navy matching the designs to the requirements specified in the study, then seeking bids for engineering designs in the spring.

About 22 to 45 additional sealift vessels will be needed, according to estimates.

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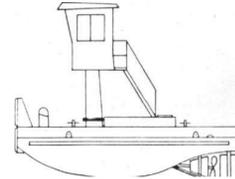
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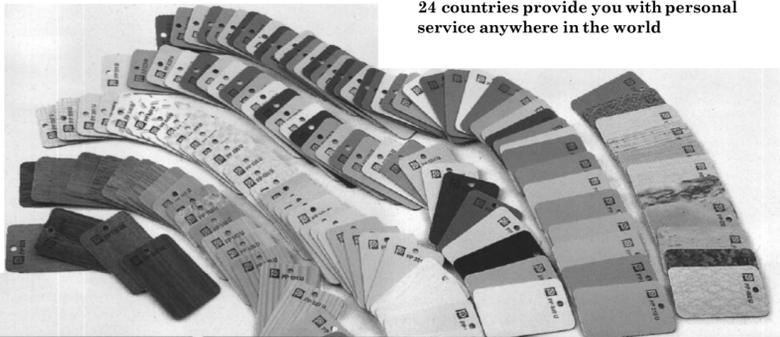
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**Washington State Ferry
Delivered In 168 Days
By Hydraulic Fishing Supply**

The 333-passenger ferry W.L. Callahan was recently delivered by Hydraulic Fishing Supply, Inc., Anacortes, Wash., to the State of Washington. The vessel was designed, built and delivered in a specified contract period of 168 days. Naval architects and marine engineers Elliot Bay Design Group, Seattle, Wash., provided the design and pre-cut steel for the project.

Larry DeCan, project foreman at Hydraulic Fishing Supply, said the 68-foot, 70-ton ferry will be used to shuttle residents, visitors and construction workers from Tacoma to McNeil Island. The island is home to the 1,000-inmate McNeil Island Correctional Facility and about 50 houses, where support staff reside.

According to Warren Gay, marine operations manager for the correctional facility, the W.L. Callahan will replace a recently sold 58-passenger ferry in the fleet that serves the island. Mr. Gay said the correctional facility operates one 300-passenger and one 89-passenger ferry

**W.L. CALLAHAN
Equipment List**

Main engines (2)	Pacific Detroit Diesel
Propellers (2)	Michigan
Generator engine	Kohler
Reduction gears	Twin Disc
Engine controls	Mathers Micro Commander
Steering controls	Wagner
Coatings	Devoe
VHF radio	Ranger
Radar	Furuno
Compass	Ritchie
Pumps	Jabsco

on a 24-hour basis. Vehicles are transported on two 267-ton, 20-vehicle barges pushed by 65-foot tugs. The tug-barge vehicle transport service is run on 10-hour-a-day schedules. In all, Mr. Gay said, more than 400,000 passengers a year are transported to and from the island.

Built at a cost of about \$812,000, the steel-hulled Callahan is part of a six-year McNeil Island Correctional Facility expansion plan. Inmate levels are expected to reach 1,800 by 1993 and its present staff of 600 is expected to grow as well.

The Callahan has a 25-foot beam and 4-foot draft and is powered by two 240-hp 871 Pacific Detroit Diesel engines. Other propulsion equipment includes 40-inch by 32-inch Michigan bronze propellers, 3-inch stainless steel shafting and Twin Disc reduction gears.

For free literature fully describing the vessel construction services of Hydraulic Fishing Supply,

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**Bauer Industries
Completes Excursion
Boat Interior Design**

The John James Audubon, formerly the Bayou Jean Lafitte, has undergone a complete interior renovation designed by Bauer Interiors, Inc., New Orleans, La. The 125-foot excursion vessel, owned and operated by The New Orleans Steamboat Company, will shuttle passen-

gers from the Aquarium of the Americas to the Audubon Zoo. The vessel will also be available for private charter and dinner cruises in the evening.

The primary consideration in the design direction of the renovation was to provide a sleek, contemporary interior, consistent with the exterior hull design. Colors and materials, such as paints, stains, wall fabrics, and carpeting, were selected based on user profiles, practicality, Coast Guard requirements

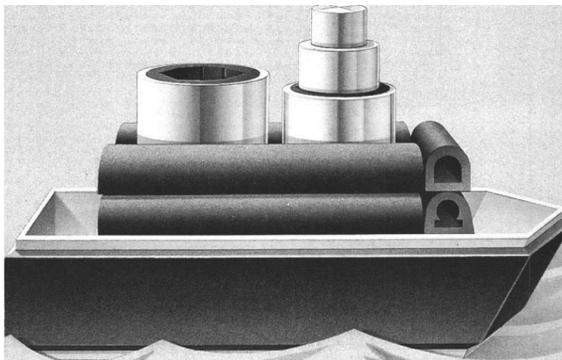
and desired ambience.

Bauer Interiors, Inc., founded in 1979, has considerable experience in interior design solutions for the marine, health care and hospitality industries. Bauer Interiors' marine experience spans from private luxury yachts to 600-passenger excursions boats.

For free literature detailing Bauer Industries' interior design services

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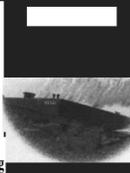
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**Seamen's Church Institute
Announces \$200,000 Grant
From Mobil Foundation**



The Rev. **James R. Whittemore** (right), executive director of The Seamen's Church Institute of N.Y. and N.J., accepts a Mobil Foundation grant of \$200,000 from **Gerhard E. Kurz**, president of Mobil Shipping and Transportation Company. The grant will assist in upgrading the Visual Ship Simulator, training staff and curricula of the Institute's Maritime Training Division.

The Seamen's Church Institute of New York and New Jersey (SCI) recently announced a grant of \$200,000 from Mobil Foundation, Inc., the Mobil Corporation's philanthropic arm. Mobil Shipping and Transportation Company president **Gerhard E. Kurz** presented the gift, which will benefit the Institute's Maritime Training facility, to the Rev. **James R. Whittemore**, executive director of the institute. The institute's Maritime Training Division has one of the world's most sophisticated visual ship simulators, a professional training staff, and tailor-made curricula, all of which will be enhanced by the grant.

The Seamen's Church Institute of New York and New Jersey, with headquarters in lower Manhattan, is an ecumenical voluntary agency of the Episcopal Church founded more than 157 years ago. The institute is dedicated to serving the ever-changing needs of seafarers from all nations and all creeds.

**Galveston Ship
Consolidates Yard,
Will Sell 35 Acres**

In a move to streamline its operations and release a portion of its shipyard property for sale, Galveston Shipbuilding will consolidate its services to a northeast 10-acre section of its 45-acre site in Galveston, Texas, according to owner **Harry J. Fiegel Jr.**

"We just had more space than necessary for the type of work we do," said Mr **Fiegel**. Twenty of the 35 acres released for sale are where new barge construction was done during a period when the yard designed and built double-skin and integrated tug-barge units of up to 55,000 deadweight tons. The remaining acreage supports the shipyard facility by providing parking, rail access, and additional waterfrontage.

According to Mr. **Fiegel**, the

tracts for sale include an operational shipyard with deepwater frontage, a railroad spur, a turning basin channeled to Intracoastal Waterway Mile 355, buildings, equipment, launching way, and a 1,000-ton Syncrolift drydock.

Mr. **Fiegel** said that Galveston Shipbuilding is adapting to new demands being placed on the shipping industry. The yard concentrates on custom modifications, repair and maintenance.

Galveston Shipbuilding's remain-

ing facilities at the consolidated site include 550- by 105-foot and 350- by 60-foot graving docks, deepwater channel and turning basin, three building ways, fabrication shop, and warehouse. The yard has four-nozzle-capacity blasting equipment for both interior and exterior sandblasting and painting, and a specialized closed-vent system for barge cleaning.

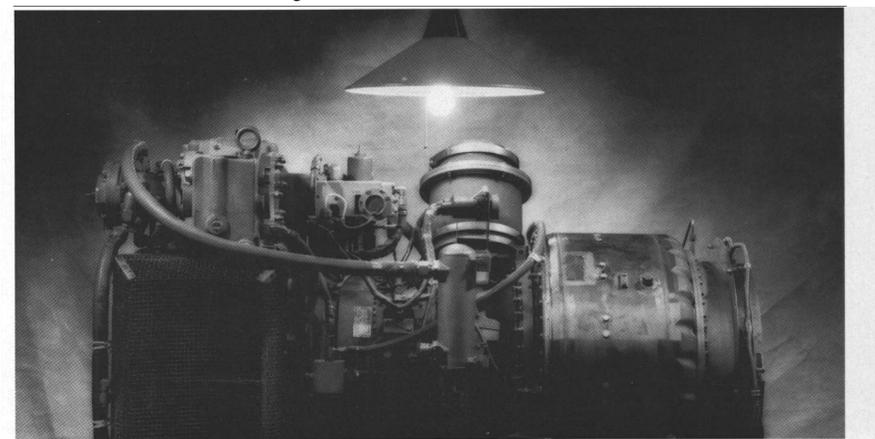
For free literature detailing Galveston Shipbuilding,

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**Metal Trades Lands
\$1.7 Million Contract
For Tug Overhaul**

Metal Trades, Inc., Hollywood, S.C., recently received a \$1,682,814 contract for the regular overhaul of the large harbor tug YTB-804. The pact was awarded by the Supervisor of Shipbuilding, Conversion and Repair, Charleston, S.C.

Only One Marine Turbine Has Ever Survived This U.S. Navy Torture Chamber.

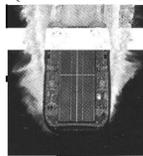


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Propulsion Update

Volvo Penta Offers Broader Commercial Marine Range—New Engine Suitable For Japan

Volvo Penta has launched a new diesel engine for propelling commercial boats. The engine has the designation TAMD102A and offers considerable competitive advantages for semi-planing and planing boats.

The in-line, six-cylinder, 9.6-liter turbo diesel is equipped with an after-cooler which increases the power and extends the service life as well as lowering fuel consumption and emissions. The engine is available in three configurations—294 kw (400 bhp), 265 kw (360 bhp) and 235 kw (320 bhp).

At the same time, Volvo has introduced its 6.7-liter TAMD71 engine as a modified, fully classable

version for auxiliary power in boats. It is available in two configurations—140 kw (187 bhp) at 1,800 r/min and 110 kw (147 bhp) at 1,500 r/min.

The new engine configurations are part of Volvo's venture in the commercial marine sector. Earlier this year the company introduced its enhanced customer support program—Cost Control Program—which comprises a three-year warranty and Non Stop Parts Service with quick and reliable parts delivery 24 hours a day.

The new TAMD102A marine diesel engine, which Volvo Penta has put into production, has increased the company's already broad com-

mercial engine range—nine engine families ranging from 18 to 612 bhp. They are supplied for propelling fire and rescue boats, pilot and police boats, fishing boats, ferries and tugs and for ships designed for different types of transport.

The Light Duty specification of the TAMD 102A is used primarily in semi-planing and planing boats. The Medium Duty specification is used in semi-planing and displacement boats.

The TAMD 102A will be of par-

ticular significance for sales to Japan—a market where Volvo has been active for 30 years and which has grown continuously. With its light-duty configuration of 400 bhp and its bore of 120 mm, the engine meets the requirements made by the authorities for power units fitted in the light, fast fishing boats in Japan.

For free literature on marine diesel engines from Volvo Penta,

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VIS Announces Release Of 'System-64' For Vessels Of All Sizes

Vessel Information Systems, Inc. (VIS) recently announced the release of the "System-64" for vessels of all sizes. The System-64 integrates instrumentation with alarms, for up to 64 points, to provide monitoring never before available to captains and vessel owners.

The System-64 allows vital vessel monitoring to be sent on one cable to one or more color monitors located onboard. This system will watch for problems before they occur and notify the captain and crew. Up to a month's history can be shown on the screen to help troubleshoot various problems with the vessel's machinery.

For more information and free literature from VIS,

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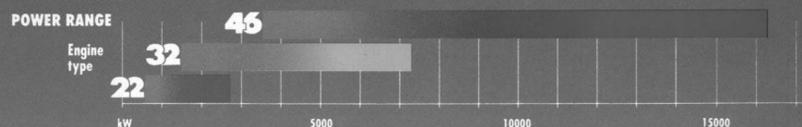
WÄRTSILÄ VASA
32

WÄRTSILÄ VASA
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**AWO Safety Seminar Set
For New Orleans, La.,
December 4-5, 1991**

The American Waterways Operators (AWO), the national trade association of the inland and coastal tug and barge industry, will hold its annual AWO Marine Safety Seminar December 4-5, 1991, at the Hyatt Regency at the Louisiana

Superdome in New Orleans.

The seminar agenda features some of the industry's top professionals, scheduled to speak on such topics as how to comply with ADA requirements; new benzene standards and future confined space entry requirements; new approaches to litigation and personal injury claims; back injury prevention; off-the-job safety; working safely in hydrogen sulfide atmospheres, and a penal discussion on customer

safety requirements.

This year's seminar will coincide with the Work Boat Show, being held December 5-7 at the Louisiana Superdome.

For further information, or for registration materials for the 1991 AWO Marine Safety Seminar, call or write: AWO Safety Seminar, American Waterways Operators, 1600 Wilson Boulevard, Suite 1000, Arlington, Va. 22209, (703) 841-9300; fax (703) 841-0389.

**O&K Awarded Dredger
Contract For Korea**

The Marine Technology Division of O&K Orenstein & Koppel AG in Lubeck, Germany, was recently awarded a contract for the complete engineering and delivery of the key dredging components for a modern underwater cutting wheel dredger. Also, two options were agreed on the supply of dredgers of identical construction.

The client, and the shipyard, is the Korean yard Halla Engineering & Heavy Industries Ltd. in Incheon. The operator is Halla Engineering & Construction Corp. in Seoul, another member of the Halla group. This contract has enabled O&K to obtain a first foothold on the Korean market in the face of tough international competition. The dredger is due to be commissioned in September 1992 and will be deployed mainly on landfill work during the construction of another major Halla shipyard.

**Cruiser To Undergo
\$2 Million Availability
At Continental Maritime**

The USS Valley Forge (CG-50), a Ticonderoga Class cruiser, will undergo a selected restricted availability (SRA) at Continental Maritime of San Diego, Inc., San Diego, Calif., under a \$2,085,002 contract.

**Underwater 92 Will Focus
On Advanced Technology,
January 13-15 In Houston**

"Working With Technology" will be the focus of a multitude of technical and educational sessions when the Association of Diving Contractors hosts its annual commercial diving and ROV symposium in Houston, Texas, January 13-15, 1992.

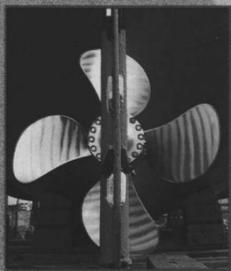
Underwater 92 is a three-day program of workshops, presentations and exhibits expected to draw over 2,000 attendees and 100 exhibits to Houston's Westin Galleria. The event will feature the commercial underwater industry's latest technology while exploring its uses, safety aspects and cost considerations.

This will mark the 20th anniversary of the symposium, which has become the largest gathering of diving industry personnel representing operations from across the U.S., including both inland and offshore markets.

Seventeen technical sessions are planned on topics concerning offshore procedures, including various aspects of sonar, search and navigation, pipeline, platform, and subsea completions.

For more information, contact: Robert Carpenter, ADC Media Coordinator, 4240 Highway 22, #3, Mandeville, La. 70448, (504) 624-4891, fax (504) 624-8159.

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Waterways Conference Delegates Urge Maritime Industry To Lobby For Repeal Of Shipping Taxes

Shipping leaders at the recent annual meeting of the National Waterways Conference, charging that the U.S. Government might be taxing the maritime industry out of the global marketplace, called for an uprising to force repeal of recent user fee increases.

Panelists at the National Waterways Conference, after detailing a dozen separate maritime user fees recently enacted or increased by Congress, urged the maritime industry to take action. Ostensibly, the new or enlarged fees pay for such things as Coast Guard services, dredging of shipping channels, and inspection of vessels for

possible insect pests. Many of them were enacted last year as part of a wide-ranging deficit reduction package.

A shipping company president, two port officials and **Harry N. Cook**, president of the National Waterways Conference, were included in the panelists who called for a stepped-up lobbying effort against the fees. Comdr. **Bruce A. Russell**, a USCG official responsible for implementing the new user fees, was also on hand. He limited his presentation to a series of slides explaining Coast Guard plans and acknowledged one hostile question—"Why should we pay for ser-

vice we don't want?"—with the suggestion, "Talk to your Congressman."

The president of Biehl & Co., **Don Waheed**, charged that the nation's competitive position in world trade has been weakened by imposition of excessive user fees imposed against the maritime industry.

Acting director at the Port of Houston, **Tom Kornegay**, told the group that new fees and taxes have resulted in a very noncompetitive situation for U.S. ports. He said a typical ship will now pay about \$80,000 in total fees. He joined others in warning that these fee increases have come at a time when other nations like Canada stand poised to take more shipping business away from the U.S.

Pat A. Younger, legislative affairs manager for the Port of Houston, listed these 12 new taxes and fees that should target for repeal or reduction:

- Harbor maintenance tax, which more than tripled last year, to 0.125 percent of the value of international cargo handled at U.S.

ports.

- Vessel tonnage tax, raised more than 350 percent, to a maximum of 27 cents a ton of vessel capacity.

- Coast Guard user fees.

- Customs user fee.

- A \$544 fee collected by the Agriculture Department Animal and Plant Health Inspection Service from each incoming ship—even when no inspection is performed.

- Federal Grain Inspection Service fee.

- Ship passenger international departure tax.

- The 4 percent transportation revenue tax.

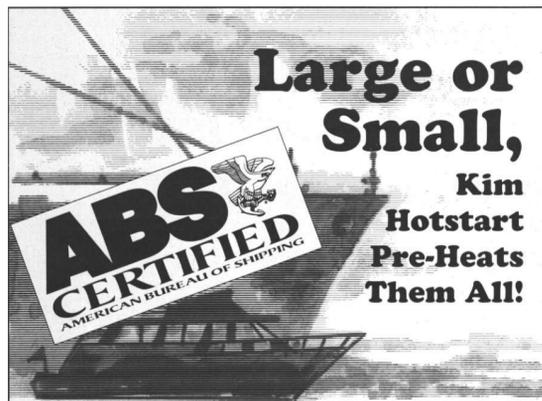
- Various navigation fees.

- State and local user fees.

- Section 404 permits.

- LUST—the leaking underground storage tank tax, amounting to one cent a gallon on most fuels used on inland waterways.

The National Waterways Conference is a trade group representing companies involved in U.S. domestic water transportation.



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Finnish Yard Delivers Hamilton Jet-Powered Helsinki Police Craft

The Helsinki Police recently commissioned a newly designed and built 8-meter high-speed all-aluminum patrol boat that features Hamilton Jet propulsion equipment.

Designed by Juha Snell Oy of Finland and built by Kellokoski, Finland, the Ville is powered by a single Hamilton model 271 waterjet propulsion system driven by a Volvo TAMD 61A marine diesel engine. At the engine's maximum rated speed of 2,800 rpm, the Hamilton Jet can push the 3.5 ton laden craft to a top speed of 32 knots. An economical cruising speed of 25 knots is achieved at 2,500 rpm.

While the integral intake screen on the jet is largely self-cleaning at

planing speeds, an MPM 1:1 gearbox was installed in the drivetrain to enable the jet to be back-flushed to remove debris such as ice pieces which may become trapped during the many hours of loiter speed patrol work the craft will carry out.

Hamilton's HSRC servo-hydraulic follow-up reverse control system, which synchronizes the reverse controller setting at the helm with the waterjet's twin duct reverse deflector position, makes fine maneuvering possible. For close quarters work, such as boarding operations, the engine is set to fast idle and the helm is used to rotate the craft and the reverse controller is used for ahead, astern or zero speed movement; precise positioning is achievable in all conditions.

For free literature detailing Hamilton Jet waterjet propulsion equipment,

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Unique Spillstop—Advanced Oil Spill Avoidance System

An American underpressure system called Spillstop is an advanced spill avoidance system for oil tankers. It employs slight, continuous, and pre-existing underpressure in a medium of inert gas of the ullage space of a ship's tank. Spillstop responds immediately in the event of an accidental hull rupture, according to MH Systems, Inc., which offers the system. From this baseline underpressure, timely reaction of the system is crucial.

Other underpressure systems on the market perform quite the opposite from Spillstop. No underpressure initially exists. These systems only begin to create underpressure with pumps after a rupture of the tanker's hull.

In the Spillstop system, the maximum underpressure is never allowed to exceed the structural capability of any tanker. Older tanker structures are thoroughly inspected, tested and analyzed prior to system installation. A comprehensive analysis by Dr. A. Mansour, professor of naval architecture and ocean engineering at the University of California, Berkeley, and a noted expert in the field of structural analysis, has shown that, "effects of negative pressure on tanker structure" are insignificant.

According to California-based MH Systems, the Spillstop system main-

tains the IMO Inert Gas requirement as all times, even at the time of rupture. The Inert Gas system is a mandatory requirement for all tankers in excess of 20,000 tons in order to prevent accidental combustion and explosion.

The Spillstop system maintains the inert gas mixture under negative pressure. A general misconception is that an inert gas mixture cannot be effectively maintained under negative pressure. Not only can the mixture be maintained inert, claims MH Systems, but its effectiveness is insensitive to variations in pressures. It is irrelevant to prevention of combustion or explosion whether the inert gas mixture is at a positive pressure or a negative pressure. Spillstop continuously compensates for ingress of oxygen due to leakage by introducing additional inert gas—the procedure that is currently followed in the positive pressure system for maintaining a specified inert gas mixture ratio.

Spillstop is computer controlled and totally automated with minimal need for human intervention. The system can be considered both a wholly new physical formulation and a new high tech implementation of the existing inert gas systems that are already in place in oil tankers.

MH Systems reports that Spillstop eliminates potential boil-off of the volatile cargo by maintaining the underpressure value less than the cargo's vapor pressure.

For free literature detailing Spillstop,

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MarAd Enters Into \$2 Million Agreement For CHCP With 4 Lines

The Maritime Administration (MarAd) has entered into a \$2,000,000 cost-shared cooperative agreement for the Cargo Handling Cooperative Program (CHCP) with American President Lines, Ltd., Crowley Maritime Corporation, Matson Terminals, Inc., and Sea-Land Service, Inc. The purpose of the CHCP is to jointly address and

promote innovations in maritime cargo handling through the identification, development and application of new technology.

Continuing a program begun in 1983, the agreement covers a new five-year period. Program costs will be equally shared on an annual basis by MarAd and the industry members, subject to the availability of funds. Through cost-sharing, all CHCP members share in the results of projects, developed and carried out by the industry members, that probably would not be done by any one company.

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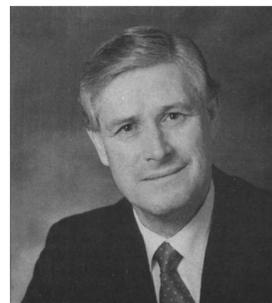
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November, 1991 Circle 346 on Reader Service Card



SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS

A Word From The President



Ronald K. Kiss

As the Society of Naval Architects and Marine Engineers' 39th president, I have the privilege of leading the society up to its centennial. SNAME has grown from a small New York-centered organization to a society with worldwide membership, recognition and prestige. When it was established in 1893, private shipbuilding was at a low level; there were hints of a naval shipbuilding resurgence; steel was emerging as a material for ship hulls; and welding, refrigeration, electronics and high-pressure steam were yet to be developed. Yet the fall of the United States from a position of world leadership in shipbuilding, with the decline of wooden ships, stirred an idea among a group of marine professionals—professionals with a vision and foresight. The idea was to create a professional marine-oriented society in the United States similar to several in existence abroad—a society where members had the opportunity to relate on technical issues and receive needed services.

The objectives, adopted in 1893, can be summarized as being to advance the state of the art; to afford facilities for the exchange of information and ideas; to disseminate the results of research, experience and information among the members; to encourage and sponsor such research; to cooperate with educational institutions and to promote the professional integrity and status of the members.

We've come a long way! Growing to about 2,000 members in its first 50 years and growing another five-fold to over 10,000 today is the ultimate testament to our wise founders. These founders included such leaders as William H. Webb, David W. Taylor, and Francis T. Bowles. Over the years, the society has achieved its objectives in numerous ways. It has established a scholarship program that provides graduate scholarships for advanced study in marine professional areas, and in 1957 it added an undergraduate scholarship program to encourage young people to enter the profession. Ten colleges are on the approved undergraduate list. Our society also pro-

vides the visitors for the Accreditation Board for Engineering and Technology (ABET) to evaluate and accredit colleges and universities offering degrees in naval architecture, marine engineering and ocean engineering. Clearly we have done more than "cooperate with educational institutions."

In the area of research, SNAME established a Technical and Research (T&R) Program just over half a century ago. Through the T&R Program the society encourages and sponsors maritime research into all areas of the sea sciences, with particular emphasis on the construction of large ships, small craft, marine vehicles and offshore structures.

SNAME was founded as an association of individuals. There continue to be no organizational memberships and no mandate for direct support of the industries from which it draws its members. Therefore, SNAME is uniquely qualified as a professional forum for discussion of the problems faced by its members in their technical pursuits. The society is widely recognized for its contributions to projects and programs of technical interest throughout the marine industry.

The T&R Program, through its committees and panels, reviews the state of the art, recommends, funds, and seeds needed research projects. It initiates, coordinates and directs projects, and highlights the need for technical investigations.

In addition to work in safety, energy saving and efficiency improvements, the program has also been instrumental in breakthroughs in hydrodynamics, structural design, propulsion, auxiliary systems, materials, ship operating practices and ship production techniques that are significant to the advancement of the marine industry.

Support for this program comes from annual contributions from every segment of the maritime and ocean-oriented industries. The society solicits contributions from the shipowners, ship operators, shipbuilders, suppliers, ship designers, ocean engineering organizations, specialty firms and individuals.

With the present depressed state of shipping and commercial shipbuilding, the continued support of the program is important to ensure that the industry continues to explore needed research to keep up with changing technology.

The centralized national nature of SNAME began to evolve on a geographic basis when its first section was established in Philadelphia in 1941. Since then, 16 more sections were created concluding with the Arctic Section which will celebrate its 10th birthday this month.

For a naval architect or marine engineer, SNAME is the premier technical society. It provides one of the best ways to keep abreast of change in our chosen profession. In particular, the technical sessions at the Annual Meeting are the key-stone of reported progress in our field. These are supplemented by symposia, local section meetings and outstanding journals (Marine Technology, Journal of Ship Research and Journal of Ship Production). For those members wanting to be involved with the evolution of change, the T&R Program offers the opportunity to work with technical leaders in specific technical areas.

Today the situation in our industry is no brighter than it was when SNAME was founded, but we have grown and flourished for 98 years. Plans are being made to celebrate our centennial in a proper fashion. But more importantly, through the hard work of numerous committees, plans are also being made to take SNAME into its second century with the same commitment to excellence and technical growth that the original founders exhibited. We plan to remain strong so future professionals in the field will have the same opportunities to benefit and learn from SNAME that thousands have already experienced.



SNAME 1991 An 10th Annual International

New York, New York,



One of the most important marine shows in the U.S., the Society of Naval Architects and Marine Engineers (SNAME) Annual Meeting and International Maritime Exposition will hold its 1991 conference in New York City from November 13-16. The three-day event will be held at the newly renovated New York Hilton Hotel.

The show returns to New York

following last year's presentation in San Francisco. Last year the show was held outside New York for the first time in its history. Attendance and the number of exhibitors was down slightly last year, due in part to the limited amount of exhibition space at the Hyatt Regency Hotel at the Embarcadero Center in San Francisco. This year, the number of exhibiting companies is in excess of 100 and attendance is expected to be in the area of 2,000, according to a society spokesman. The exhibition area will be located in the new Americas Halls facility on the hotel's third and fourth floors.

The 1991 International Maritime Exposition marks the 10th anniversary of the joining of the exhibition with the annual meeting. Located in Americas Hall I and II, the exposition will be showcasing over 100 companies providing an excellent forum to meet marine industry professionals. Exhibitors from Europe and North America will display marine products and services including diesel engine sales and repair, ship and boat construction, maintenance and repair, navigation and communication technology, valves and piping, lifesaving equipment, controls and control systems,

deck machinery and cargo-handling equipment and vessel design and engineering services.

The technical program will once again run concurrently with the exposition. The papers committee, under the direction of chairman Jack W. Abbott, has selected 15 papers covering a diversified array of subject matters to comprise the technical program scheduled for Thursday, November 14, and Friday, November 15.

The first two papers presented in the Trianon Ballroom on Thursday morning, November 14, will focus on resistance and powering. The



Annual Meeting & International Maritime Exposition

November 13-16

two papers presented in parallel in the Mercury Ballroom will be on ship design of submarines and a study comparing U.S. and U.K. frigate designs.

Thursday afternoon, papers focusing on ship performance and maneuverability will be presented in the Trianon Ballroom, while in parallel, papers in the Mercury Ballroom will examine icebreaker performance prediction and a progress report on Tension Leg Platforms.

On Friday morning, six papers will be presented in all. The three papers in the Trianon Ballroom will cover waves and motion, while three

miscellaneous papers concurrently presented in Mercury Ballroom address the topics of design and construction of a floating accommodation facility for aircraft carriers, design curves for specially orthotropic laminated plates, and axial and torsional vibration calculations on long-stroke diesel engines.

On Friday afternoon, one paper of particular note will be presented. "The Inadequacies of the Current Approach to Minimizing Oil Outflow from Damaged Tankers—A Proposed Alternative" by **Jeremy Hooks** advances the author's contention of the inadequacies of the

International Maritime Organization (IMO) formula for the protective location of segregated ballast tanks. Mr. **Hooks** favors an alternative arrangement with an intermediate deck at approximately mid depth in conjunction with double sides.

This year's annual Business Session will immediately follow the President's Luncheon. The agenda for this meeting will include a report on the elections that took place at the council meeting on Wednesday, November 13.

At noon, prior to the President's Luncheon in the East Ballroom on

Thursday, November 14, a general reception will be held in the foyer of the East Ballroom. Beginning at 12:30 p.m., the President's Luncheon will feature the presentation of several important society awards and an address by SNAME president **Ronald K. Kiss**.

On Friday, November 15 at 7:30 p.m., the Annual Banquet, the society's yearly black tie affair, will be held in the hotel's Grand Ballroom. The principal speaker at the banquet will be the Secretary of the Navy, **H. Lawrence Garrett III**. The banquet program will also feature presentations of the Taylor



**1991 SNAME
Annual Meeting**
—A Preview
(continued)

Medal to **Douglas Faulkner**, for "notable achievement in naval architecture," the Land Medal to **Robert G. Mende**, for "outstanding accomplishment in the marine field," the Smith Medal to **Allyn C. Vine** for "outstanding accomplishment in

ocean engineering," and the Webb Medal to **Amelio M. D'Arcangelo** for "outstanding contributions to education in naval architecture, marine or ocean engineering."

A detailed brochure covering the SNAME Annual Meeting, including registration and attendance information, can be obtained from SNAME Headquarters, 601 Pavonia Avenue, Jersey City, N.J. 07306; telephone: (201) 798-4800; or fax: (201) 798-4975.

**Technical Sessions
& Social Programs**

Thursday, November 14

Trianon Ballroom

9:30 a.m.—"Resistance and Powering Predictions for Transom Stern Hull Forms During Early Stage Ship Design," by **Siu C. Fung**.

10:45 a.m.—"Resistance and Seakeeping Characteristics of Fast

Transom Stern Hulls with Systematically Varied Form," by **Erkki Lahtiharju, Tuomo Karppinen, Matti Hellevaara and Timo Aitta**.

Mercury Ballroom

9:30 a.m.—"Submersible Pressure Hull Design Parametrics," by **James J. Gorman and Lisa L. Louie**.

10:45 a.m.—"A Comparative Study of U.S. and U.K. Frigate Design," by **Larrie D. Ferreiro and Mark H. Stonehouse**.

East Ballroom

Noon—President's Luncheon in the East Ballroom, with a reception in the East Ballroom Foyer.

2 p.m.—Business Session in the East Ballroom.

Trianon Ballroom

2:30 p.m.—"Theoretical Analysis of Generalized Hydrodynamic Interaction Forces on Ships in Shallow Channels," by **P. Kaplan and K. Sankaranarayanan**.

3:45 p.m.—"Classification of Ships by their Maneuvering Characteristics," by and **David R. Dellwo**.

Mercury Ballroom

2:30 p.m.—"Icebreaker Performance Prediction," by **Arno Keinonen, Robin P. Browne, Colin R. Revill, and Ian M. Bayly**.

3:45 p.m.—"Tension Leg Platforms—Progress and Prospects," by **J.A. Mercier, N.D. Birrell, J.C. Chivvis, and A.F. Hunter**.

Friday, November 15

Trianon Ballroom

8:15 a.m.—"Simulation of the Dynamics of a Ship Maneuvering in Waves," by **Peter Ottosson and Lennart Bystrom**.

9:30 a.m.—"A Nonlinear Numerical Method for Transient Wave/Hull Problems on Arbitrary Vessels," by **Brian Maskew**.

10:45 a.m.—"A Theoretical and Numerical Model of Ship Motions in Heavy Seas," by **Jacek S. Pawlowski and Don W. Bass**.

Mercury Ballroom

8:15 a.m.—"Design and Construction of a Floating Accommodation Facility for Aircraft Carrier Refueling and Overhaul," by **William A. Fox and Richard J. Kutchen**.

9:30 a.m.—"Design Curves for Specially Orthotropic Laminated Plates Under Combined In-Plane Loading," by **N.G. Tsouvalis and V.J. Papazoglou**.

10:45 a.m.—"Coupled Axial and Torsional Vibration Calculations on Long-Stroke Diesel Engines," by **Stig Baungaard Jakobsen**.

Trianon Ballroom

2 p.m.—"The Inadequacies of the Current Approach to Minimizing Oil Outflow from Damaged Tankers—A Proposed Alternative," by **Jeremy Hook**.

Grand Ballroom

7:30 p.m.—Annual banquet.

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American Composite Technology
American United Marine
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CTI Industries
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November, 1991

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Wartsila Marine
Waukesha Bearings
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ABB Turbocharger Co. will display exhaust gas turbochargers at Booths 186-187.

ABS
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At Booth 363, American Bureau of Shipping (ABS) will display its classification and certification services. Located worldwide through 154 exclusive offices, ABS is one of the world's leading classification societies, providing impartial marine technical services for ships and other marine structures.

ALLIED MARINE CRANE
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Allied Marine Crane, a division of Allied Systems Company, will exhibit at Booth 211. Allied Marine Crane designs, manufactures, and distributes a product line of fully hydraulic marine cranes, including double tapered box boom, telescopic boom and knuckle boom in capacities from 6 to 75 tons. These cranes are designed for applications in salt-laden atmosphere such as offshore drilling rigs, production platforms and work boats. Other

(continued)

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ANSCHUETZ
Circle 149 on Reader Service Card
Anschuetz integrated bridge system including the new Nautoplot charting table will be on display at Booths 127 and 128. Anschuetz Gyrocompasses,

autopilot and steering controls, Frydenbo rotary vane steering gear, Kockumation planned maintenance and spare parts control system, Kockumation Loadmaster, computer for loading and stability calculations and Lista spare parts cabinets for storage space will also be exhibited.

APPLETON MARINE
Circle 137 on Reader Service Card
Appleton Marine Inc. will displaying at Booth 408 its complete line of deck machinery including cranes, winches, windlasses, capstans, and UNREP equipment for military, offshore, and commercial applications. Marine cranes are available in ca-

pacities from 4,000 pounds to 200,000 pounds in box, telescoping, knuckle, and foldable boom models. Detailed specifications and data will be available.

APOLLO
Circle 107 on Reader Service Card
Apollo International (New York) and Apollo Maritime (Houston) service the domestic and international marine markets with cargo hoses, tank cleaning machines, ventilating fans, expansion joints and packings. The companies have full service facilities in New York and Houston and provide sales and technical assistance, repair and testing capabilities and recertification. They will display at Booths 354-356.

ATLANTIC MARINE
Circle 112 on Reader Service Card
Atlantic Marine, Inc. has facilities in both Jacksonville, Fla., and Mobile, Ala. The Jacksonville area shipyards, Atlantic Marine and Atlantic Dry Dock, have capabilities to build vessels up to 350 feet and dock vessels to 4,000 tons. Mobile's shipyards, Atlantic Marine and Alabama Shipyards, accomplish vessel repairs and conversions with drydocks to 40,000 long tons lifting capacity and build all size of inland and oceangoing vessels, offshore drilling rigs and heavy fabrication for industrial uses. The firm will exhibit at Booth 390.

BEAIRD
Circle 118 on Reader Service Card
Beaird Industries, Inc., MAXIM Evaporator Products will display at Booth 100. MAXIM heat recovery evaporators, custom built heat exchangers, demineralizers, condensers and silencers will be exhibited. Emphasis will be on standard evaporator designs, capability to design and manufacture custom equipment and experience with multi-effect evaporators. Information will be available on total in-house capability relating to fabrication of pressure vessels and other structures, as well as machine shop capability.

BFI SHIPBOARD WASTE SERVICES
Circle 171 on Reader Service Card
BFI Shipboard Waste Services, at Booth 17, will display information on its services. Working within the USDA and USCG guidelines, BFI was involved in the development of the currently approved MARPOL Annex V disposal procedures. From a single box up to tonnage volumes, BFI has the program and permits in place to handle shipboard disposal problems.

CATERPILLAR
Circle 133 on Reader Service Card
Computer aided design will be featured at Caterpillar's display at Booth 185. Marine Power System (MPS) software is available to assist propulsion system selection including engine(s), gear(s), propeller(s), with complete vessel and system analysis. AutoCAD drawing files are available for all Cat engines. Technical Marketing Information (TMI) is an online system Cat Dealers can access to source the technical information a customer requires. Caterpillar supplies the worldwide marine industry with diesel and heavy fuel engines and power systems from 70 to 7,300 hp and 50 to 5,500 electrical kw.

CENTRICO
Circle 155 on Reader Service Card
Centrico, Inc., at Booth 133, will display its state-of-the-art fuel oil and lube oil purification systems. On exhibit will be a Westfalia automatic centrifuge with electronic timing unit.

COASTDESIGN
Circle 134 on Reader Service Card
Coastdesign Inc. is a Canada-based publisher/developer of sophisticated and high-tech software for naval architects, shipyards and vessel operators. Its hull design program AutoSHIP has been in the market for the last six years and is currently one of the top-selling PC-based hull definition programs. The firm will exhibit at 138B.

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See us at S.N.A.M.E. at the Apollo Maritime Booth #354 and *356

Circle 289 on Reader Service Card

CTI INDUSTRIES

Circle 135 on Reader Service Card
At Booth 176, CTI Industries, Inc., will exhibit information on its condenser/heat exchanger restoration services; using metal alloy inserts and a patented installation procedure, CTI can save up to 80 percent of the cost of retubing. CTI Specialty Coatings services includes corrosion protection, high temperature and cavitation resistant coatings used in stacks, IG systems, rudders and struts.

DEANSTEEL MFG.

Circle 165 on Reader Service Card
At Booth 402, Deansteel Manufacturing Co., Inc., will display a cutaway sample of its U.S. Coast Guard-approved A-60 joiner door and frame unit. They will also display joiner trim systems, marine berths and furniture. Current literature and specifications will be available.

DEUTSCH METAL COMPONENTS

Circle 191 on Reader Service Card
Deutsch Metal Components, at Booths 158-159, will feature the Pyplok Swage marine fitting system which is a cold work method of joining pressure metal piping. Approved for use by the U.S. Navy, ABS, USCG and other marine agencies worldwide.

ENVIROVAC

Circle 119 on Reader Service Card
Envirovac Inc. is the leading manufacturer of EVAC vacuum sewage collection systems for the marine industry. Maximum flushing water consumption is three pints per flush. Small diameter piping can be used with non-sloping lines, vertical lift capabilities can be applied. Also manufacturer of the ORCA line of MSDs for vessels which carry 12-500 passengers. The ORCA is compact, lightweight, easy to install and maintain, and is microprocessor-controlled and USCG and IMO approved. The firm will display at Booths 200 and 202.

EXXON COMPANY INTERNATIONAL

Circle 163 on Reader Service Card
At Booth 139, Salesmen and technical advisers will be available to answer commercial and technical questions regarding Exxon's successful line of marine lubricants, Exxmar, which were developed for marine crosshead and trunk piston diesel engines. Information regarding other premium quality marine products, as well as the Exxcare and Exxcare Plus oil analysis systems will also be available.

Exxcare Plus is an extension of Exxcare and monitors wear metals besides providing normal analysis and trend reporting. The system was designed to assist operators and ship engineers with efficient care of Exxon lubricants in service and to check wear possibilities of various ship-board equipment.

FIBERGRATE

Circle 136 on Reader Service Card
At Booth 360, Fibergrate Corporation will display information on its corrosion resistant structural materials such as grating handrail, ladders, structural members and stairtreads. Products are manufactured from lightweight, durable structural fiberglass. Products require no maintenance, according to the company, and carry Class I Flame Spread Resistance.

FRANK MOHN HOUSTON

Circle 109 on Reader Service Card
At Booth 143, Frank Mohn Houston, Inc., will display environmentally safe submerged cargo pumps for oil/product/chemical carriers, oil spill recovery equipment and emergency offloading equipment.

FURUNO USA

Circle 114 on Reader Service Card
At Booth 392, Furuno USA will display its latest ARPA radar, radar, and navigation and communication equipment for commercial vessels.

GERARD TECHNOLOGY

Circle 108 on Reader Service Card
Gerard Technology Associates is a manufacturer's representative. Some of the products repre-

sented by GTA include Golar Marine Incinerators, Golar Eductors, Custom-Pac 2000 Marine Compactors, Marine Aluminum Helideck, Marine Aluminum Accommodation Ladders, Norsafe Lifeboats, Safety Windows, Wagner Steering Gear and Moland Automation Monitoring Systems. They will display at Booths 178-180.

HENSCHEL

Circle 104 on Reader Service Card
At Booths 118 and 119, Henschel Inc. will exhibit ship control and automation equipment. The firm has been a leader in marine controls and monitoring for over 75 years. Henschel designs, manufac-

tures and distributes maneuvering systems, remote controls, temperature monitoring and control, machinery automation, cargo and ballast systems and alarm and monitoring systems. The system can be independent or fully integrated.

IN-PLACE MACHINING

Circle 121 on Reader Service Card
In-Place Machining Company will display at Booth 122. The company performs ship repairs in port or at sea. They specialize in straightening crankshafts, refurbishing crankpins and main journals without rotating the shaft, "R-Stamp" Certified welding, optical alignment and MetalStitch. The

company also provides complete in-place machining services such as milling, boring, drilling, etc.

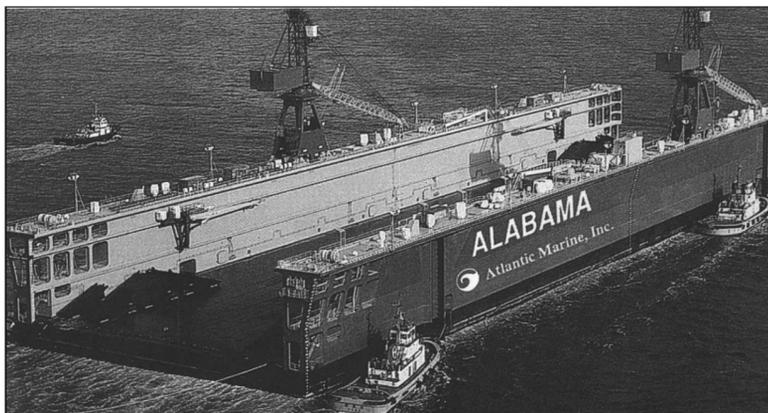
INVENTORY LOCATOR SERVICE

Circle 160 on Reader Service Card
At Booth 147, Inventory Locator Service, Inc., will display information on its 24-hour inventory locating service. The service lets suppliers list inventory—buyers see who has the part, quantity, condition, etc., and can contact the seller directly.

L.C. DOANE

Circle 130 on Reader Service Card
(continued)

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The ALABAMA has a lifting capacity of 225,000 DWT or 40,000 tons displacement.
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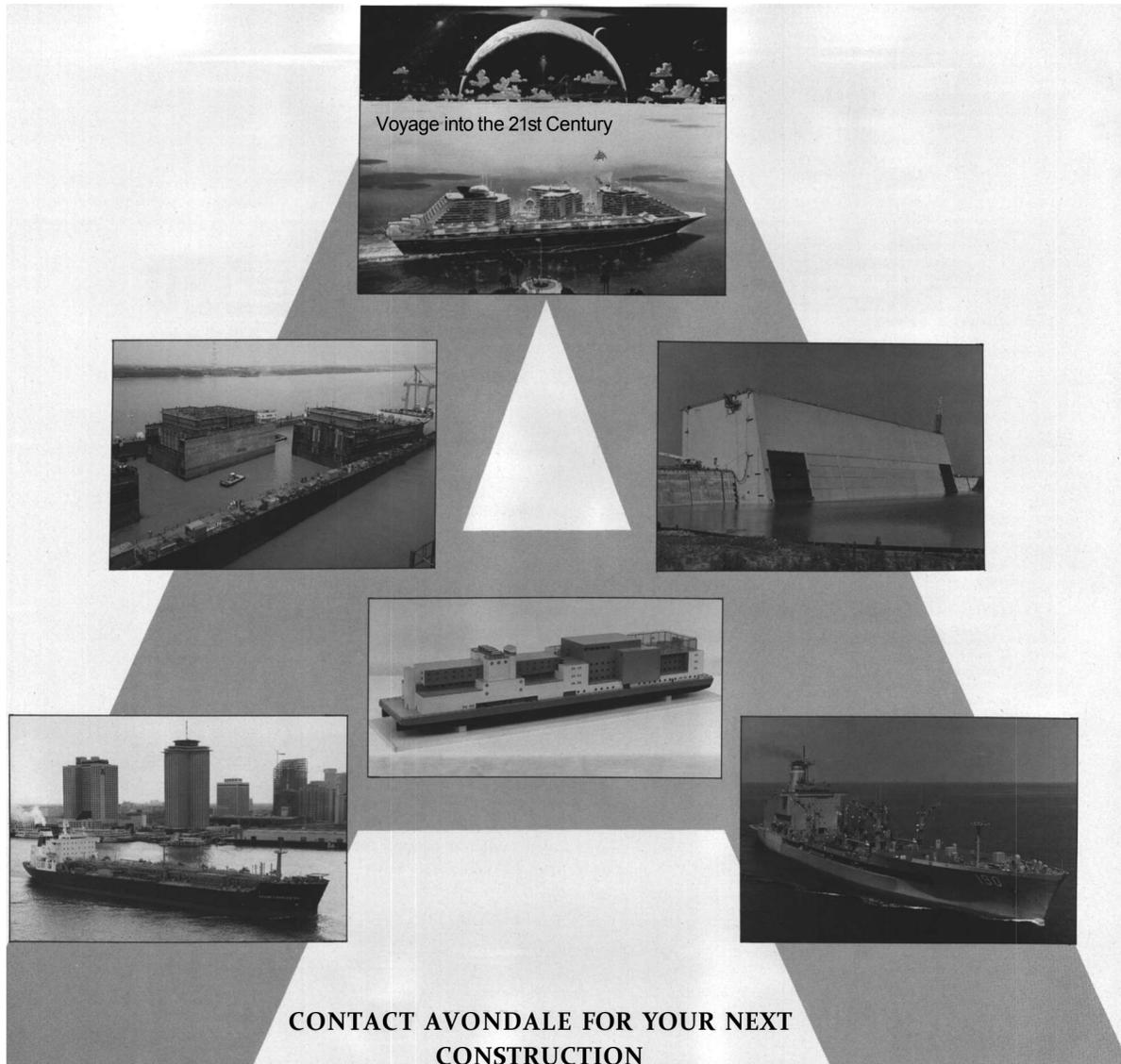


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28 Maritime Reporter/Engineering News



**1991 SNAME
Annual Meeting
—A Preview
(continued)**

The L.C. Doane Company will exhibit at Booth 320. The company offers fluorescent lighting fixtures (1/A/W Mil-F-16377) and visual landing aids (1/A/W NAEC specifications), and UL595 marine lighting for desks, mirrors, berths and overhead general lighting, UL1570 low voltage and emergency fluorescent lighting. Applications include U.S. Navy ships, tugs, barges, tankers, fishing boats, luxury yachts and also confinement and high abuse applications.

LEISTRITZ

Circle 147 on Reader Service Card

Leistriz Corporation will display information on its lube oil, fuel oil pumps for engine room service, cargo pumps, stripping pumps for viscous products like asphalt, #6, molasses, etc. The company will exhibit at Booth 162.

LENAPE FORGE

Circle 156 on Reader Service Card

At Booth 105, Lenape Forge Inc. will exhibit ferrous and non-ferrous machined and tested forgings for naval and commercial ships. A full range of non-destructive testing facilities heat treating and machining capabilities are offered by Lenape Forge.

LTC INTERNATIONAL

Circle 152 on Reader Service Card

LTC International manufactures a complete line of portable, dust-free vacuum blasting machines. The company will exhibit at Booth 406.

MACKAY COMMUNICATIONS

Circle 189 on Reader Service Card

Mackay Communications Inc. will display at Booths 149 and 150. Mackay Communications are leaders in sales/service marine electronic navigation/communication products. Mackay's GMDSS radio products will be introduced. They will also display ARPA/radar with interfacing to laserplot/nav/chart system, as well as the Standard A and Standard C satellite terminals.

MAN B&W DIESEL

Circle 169 on Reader Service Card

At Booth 124, MAN B&W Diesel, Inc. will promote their revised two stroke MC program as well as their new generation of large bore medium speed engines. Also promoted will be MAN B&W Holeyby generator sets. MAN B&W Diesel has a complete program of marine engines ranging from 450 to 51,840 kw.

MARCON ENGINEERING

Circle 151 on Reader Service Card

At Booth 110, Marcon Engineering International will display non-ferrous aluminum brass, GNI tube and fittings available in metric and imperial inch or a combination of both custom fabricated to suit any requirements. The company specializes in heating coil systems, survey, design, drafting, fabrication and installation, as well as repair services. They also offer Ciba-Geigy wear-resistant products and application services.

MAR TEC MARINE

Circle 127 on Reader Service Card

Mar Tec Marine, one of the world's foremost manufacturers of onboard fuel/tube oil tests, with over 13,000 vessels fitted worldwide, will be part of the display at Booths 114-117. Mar Tec Marine also produces a full line of lube oil test kits for a number of major oil companies.

MCDERMOTT/BABCOCK & WILCOX

Circle 158 on Reader Service Card

At Booths 151-152, McDermott/Babcock&Wilcox will exhibit material on a SWATH ship, shipyard accommodation barge, hopper barge, navigation and container barges, split hull dredge and passenger/vehicle ferry.

MMC INTERNATIONAL

Circle 164 on Reader Service Card

At Booths 407 and 408, MMC International Corp. will have an exhibit focusing on closed and restricted hand gauging (electronic) tapes, vapor control valves, C-L couplings, C-L covers and closures, samplers and sampling tapes, draft indicators, lube oil clarifier-coalescers, hi-level and overflow alarms and oxygen analyzer tapes.

MMS

Circle 110 on Reader Service Card

Marine Management Systems, Inc. (MMS) will exhibit at Booths 142-144. PC-based information

management systems include: equipment maintenance, vessel performance, consumables requisitioning, spare parts inventory control, communications and administration. MMS, Inc. is introducing the new MMS/COMSAT Maritime Workstation Manager, an advanced satellite-delivered ship management system that provides affordable and superior quality satellite communication capabilities (developed through MMS' affiliation with COMSAT Corporation).

MOBILE TELESYSTEMS

Circle 157 on Reader Service Card

Mobile Telesystems, Inc., at Booth 358, will dis-

play literature on its Inmarsat-A Maritime Satellite Communications (Satcom) systems. The satcom provides direct interconnection with the international telephone and telex network via satellite from around the world. The standard telephone line connection makes facsimile, computer data, still video or voice transmission as "easy as picking up the phone."

NAUTICAN ENTERPRISES

Circle 106 on Reader Service Card

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(continued)

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Circle 339 on Reader Service Card



**1991 SNAME
Annual Meeting
—A Preview
(continued)**

lers, Nautican Enterprises will be displaying its Propeller Design Program at Booth 374. A simple program will show which propeller will be most efficient for a given HP/RPM up to a complete design program that will make drawings and also give offsets for manufacturing propellers and patterns to make the propellers.

NEW YORK SHIPYARD

Circle 154 on Reader Service Card
New York Shipyard Corp. will exhibit at Booth 65. The company offers drydocking, ship repair and conversions. Industrial machine shop ABS-approved tailshaft repairs.

NON-FERROUS BOLT

Circle 167 on Reader Service Card
Non-Ferrous Bolt & Mfg. Co. is a producer of stainless steel and exotic fasteners. The company will be displaying at Booth 160 fasteners in a variety of configurations and materials. In addition to familiarity with other military and commercial

standards, Non-Ferrous is a Level 1 accepted manufacturer of domestic fasteners.

OMNITHRUSTER

Circle 166 on Reader Service Card
Omnithruster will display literature on its marine maneuvering, propulsion and ice management systems at Booth 100.

PARMATIC FILTER

Circle 150 on Reader Service Card
At Booth 365, Parmatic Filter Corp. will display its oily water separator, Elinca Anti-Biofouling Anode, marine vacuum system, oil content meters and

deminerizer system.

**PERMEA MARITIME
PROTECTION**

Circle 132 on Reader Service Card
Permea Maritime Protection will display at Booth 117 their Prism Alpha Membrane Nitrogen Systems, Permea, PSN Nitrogen Systems, Prism Hydrogen Recovery Systems, and Inert Gas Systems (Combustion).

RAYTHEON MARINE COMPANY

Circle 131 on Reader Service Card
Raytheon Marine Company manufactures and distributes, via an extensive world-wide service network, a complete line of navigation and communication equipment to the commercial fishing, yachting and merchant markets. Products include: radars, ARPA, depth sounders, plotters, SSB, SATCOM, Loran-C, GPS, EM logs, gyrocompasses, autopilots, integrated bridge systems, navtex, EPIRB, and other GMDSS products. They will be at Booth 307.

M. ROSENBLATT & SON

Circle 162 on Reader Service Card
The M. Rosenblatt & Son, Inc., display will highlight the diversity of talent and depth of experience the company brings to the art and science of ship design. Models and photographs of recent commissions illustrate some of the latest company designs. M. Rosenblatt & Son is recognized as a leader in naval architecture, marine engineering and management services.

SAAB TANK CONTROL

Circle 190 on Reader Service Card
At Booths 205-207, Saab Tank Control will exhibit a radar level gauging and cargo handling system. Also a full line of fixed tank cleaning machines for crude, product and chemical tankers will be on display.

SIEMENS ELECTRIC

Circle 129 on Reader Service Card
Engineering specialists in marine applications will be presenting Siemens Electric Limited at Booths 129-130 as a single system vendor for North America's fleet.

SKARPENORD

Circle 126 on Reader Service Card
Skarpenord a.s., manufacturers of USCG-approved closed level gauging systems featuring unique pressure transducer with built-in temperature element and a complete line of hydraulic/electric hydraulic remote control systems, will be part of display at Booths 114-117.

SOLIDUR PLASTICS

Circle 159 on Reader Service Card
At Booth 305, Solidur Plastics Co. will display Ultra-High Molecular Polyethylene fenders, rub strips, and wear parts. Enhanced grades are available. All grades offer excellent abrasion and impact resistance. Low coefficient of friction and no water absorption.

STAGEAWAY

Circle 170 on Reader Service Card
Stageaway, a division of Stage/Blast Inc., Portland, Ore., provides repair and inspection services with a unique staging system that can be used on bulk carriers and oil tankers even while underway. The system allows owners access to all tank/cargo areas in complete safety. Stageaway provides a complete condition report acceptable to all regulatory and insurance companies. They will display at Booth 166.

TANKSYSTEM

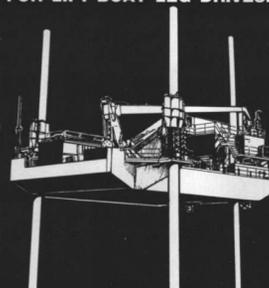
Circle 128 on Reader Service Card
Tankssystem s.a., manufacturers and designers of the unique hermetic ullage interface temperature detection and full line of hermetic equipment, will be participating in the display at Booths 114-117. Dry tank detection, inert gas pressure/vacuum detection, multi-level cargo sampling, tank overpressure alarm and part flow system are some of the company's products. Flow meter installations on over 1,000 vessels to date.



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Circle 337 on Reader Service Card

JBF-Designed 'Shearwater'⁷ Launched At Goudy And Stevens Shipyard



The Shearwater is the largest vessel to protect the waters of the State of Washington against oil spills.

Goudy and Stevens shipyard, East Boothbay, Maine, recently launched the oil-spill recovery ship Shearwater. The 123-foot-long by 31-foot-beam vessel is being constructed to JBF Scientific Company's design. The oil collection system and related hardware have been designed and built by JBF in Southwest Harbor. Goudy

and Stevens was selected to build the ship because they have built steel ships for decades and they have an outstanding reputation for quality ship construction.

JBF Scientific has been designing oil-spill recovery boats and ships since 1970. Large ships incorporating JBF's oil collection process now include two 600-long-ton and four 100-long-ton ships for the U.S., one

100-long-ton ship for Ireland, and five Catamaran ships for Mainland China.

In addition, over 100 oil recovery ships, boats and systems are in operation worldwide. The Shearwater is scheduled to start its voyage to Puget Sound (under its own power) through the Panama Canal. The voyage will take 35 days.

Aker Engineering Wins \$42 Million Contract For Troll Field Project

Aker Engineering of Norway has been awarded a \$42 million contract covering the detailed design of the topsides for Norske Shell's giant Troll gas field project.

The detailed engineering contract follows Aker's pre-engineering on the platform which started earlier this year.

The new contract is scheduled for

completion by May 15, 1993. Almost 300 Aker Engineering personnel will be involved in the project.

A number of novel features will be incorporated in the offshore Troll gas field, which is Europe's largest. The platform itself will be supported by a concrete substructure in over 300 meters of water. Great technical challenges for engineering and topsides are created by this water depth. The deck will have to withstand any movements in the support towers caused by water pressure.

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JANUARY SPECIAL ISSUE

(Advertising closing date DEC. 6)

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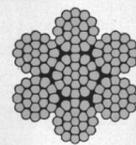


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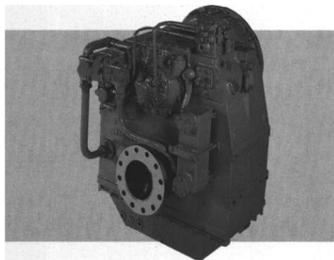


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Circle 339 on Reader Service Card

Coast Guard Contracts To Buy 32 Search-And-Rescue Helicopters For Maritime Defense Zone



The Sikorsky HH-60J Jayhawk search-and-rescue helicopter, of which the USCG is buying 32 for Coast Guard-Navy maintenance of the Maritime Defense Zone.

Coast Guard aviation recently entered a new era on the West Coast with the acceptance in San Francisco of the Sikorsky HH-60J Jayhawk search-and-rescue (SAR) helicopter.

From their base, the aircraft will be able to perform missions several hundred miles off the Pacific Coast between Point Arena and Point Conception, Calif. The Jayhawk helicopters will begin operational mis-

sions in January after pilots, aircrew members and support personnel complete transition training.

Among the dignitaries present at an acceptance ceremony that also marked the air station's 50th anniversary was Rear Adm. **Marshall E. Gilbert**, commander, Eleventh Coast Guard District. **James H. Thach**, Sikorsky Jayhawk program manager, presented aircraft keys and log books to Comdr. **Robert**

Foley, commanding officer of the air station.

The Coast Guard has contracted to buy 32 of the helicopters.

Requirements call for the aircraft to perform in violent storm-force winds (Beaufort Scale 11) and over exceptionally heavy sea states.

Other missions include drug interdiction, environmental protection, offshore enforcement of laws and treaties, aids to navigation and logistics support and other missions that may be required by Coast Guard-Navy maintenance of the Maritime Defense Zone.

Theme Of MTS '91 In New Orleans To Be 'An Ocean Cooperative—Industry, Government, Academia'

The 1991 international conference of the Marine Technology Society (MTS), scheduled to be held in New Orleans, La., November 11-13, 1991, at the New Orleans Convention Center, will feature the theme: "An Ocean Cooperative—Industry, Government, Academia."

The conference is expected to attract over 4,000 professionals to New Orleans from the military, government, academic institutions and marine-related industries worldwide.

MTS '91 will offer technical sessions and short courses covering the offshore oil and gas, shipping and fishing industries; civil and military applications of marine technology; regulatory updates and environmental protection; as well as advanced engineering and scientific knowledge gained from the heights of satellites to the bottom of the

ocean. A joint effort among The Marine Technology Society, The Hydrographic Society, The American Geophysical Union, ASME, ASCE and The Oceanography Society, the MTS '91 Exposition provides exhibitors an opportunity to display their products and services to a broad audience of professionals from varied fields. The exposition will be open during the conference with special activities planned in the exhibit hall throughout the week.

Rear Adm. **James Koehr**, Commander, Naval Oceanography Command, and **Bob Howard**, president of Shell Offshore, Inc., have been appointed as cochairmen for MTS '91.

For more information, contact: MTS '91, J. Spargo & Assoc. Inc., 4400 Fair Lakes Court, Fairfax, Va. 22033; fax (703) 818-9177.

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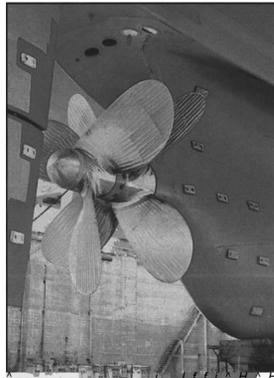
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MHI Wins Awards, Order For VLCC Installed With CRP Propulsion System



The Contra-Rotating Propeller System installed by MHI on the Toyofuji 5, a car carrier, has achieved energy savings of more than 13 percent.

Mitsubishi Heavy Industries (MHI) of Tokyo, Japan, has received a silver medal, the Stanly Gray Award and the BMEC Donald Maxwell Award in Marine Technology from the United Kingdom's Institute of Marine Engineers (I Mar E) for a paper entitled "The Development of a Contra-Rotating Propeller (CRP) System for Large Ships." It is an energy-saving propulsion system which is attracting some attention.

Up until now, the idea has never been realized as a commercial application, but MHI has installed the CRP system on the Toyofuji 5, a car carrier, and has achieved energy savings of more than 13 percent. The above mentioned paper includes the technical improvements made to the system based on the experience and results gained from the Toyofuji 5. The Institute of Marine Engineers highly evaluated the points that were confirmed by the Toyofuji 5's performance.

MHI has also received an order from Shinwa Kaiun Kaisha, Ltd. for a Very Large Crude Oil Carrier (VLCC) installed with the CRP system. The carrier will be the first of its kind with the CRP system. With the installation of the CRP system, energy savings of about 15 percent over conventional systems are expected. The VLCC will be used to transport crude oil for Cosmo Oil Co., Ltd. from the Middle East to Japan. The carrier is 258,000 dwt, and it will be completed in 1993.

For further information,
Circle 61 on Reader Service Card

Metal Trades Receives \$887,735 Contract

Metal Trades, Inc., Hollywood, S.C., received a \$887,735 contract for repairs to the Apopka, YTB-778, from the Supervisor of Shipbuilding, Conversion and Repair, Jacksonville, Fla.

NY&NJ Port Authority Links Electronic Data Exchange To Hamburg, Germany

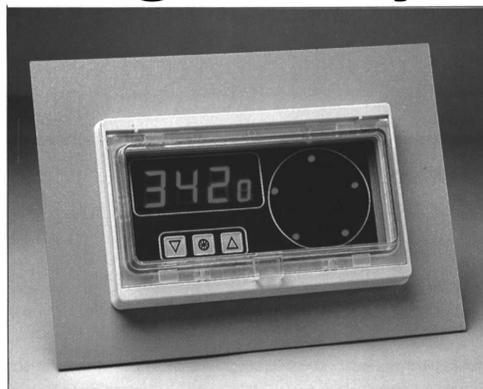
The Port Authority of New York and New Jersey and a major marine terminal operator in the Port of Hamburg, Germany, have successfully linked their Electronic Data Exchange (EDI) systems to create an international interchange of oceanborne cargo information. The

announcement was made by Lillian C. Liburdi, Port Department Director for the Port Authority, and Peter Dietrich, chairman of Hamburger Hafen and Lagerhaus Aktiengesellschaft (HHLA), the Hamburg Port Warehouse Corporation.

Mr. Liburdi said, "It's been only two short years since the Automated Cargo Expediting System (ACES) began serving the New York-New Jersey Port community, and it is now able to accept information from carriers and shippers in Europe."

Other northern European ports, which also serve clients using the New York-New Jersey Port and have electronic data interchange systems compatible with ACES, have expressed interest in future linkages. The ports of Le Havre in France, Rotterdam in the Netherlands, and Bremen in Germany have entered into agreements to establish test linkages with ACES through the General Electric Information Services (GEIS) network.

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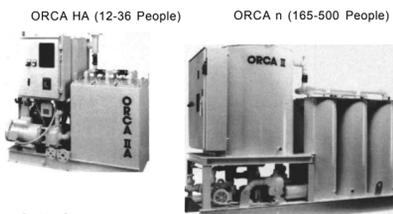
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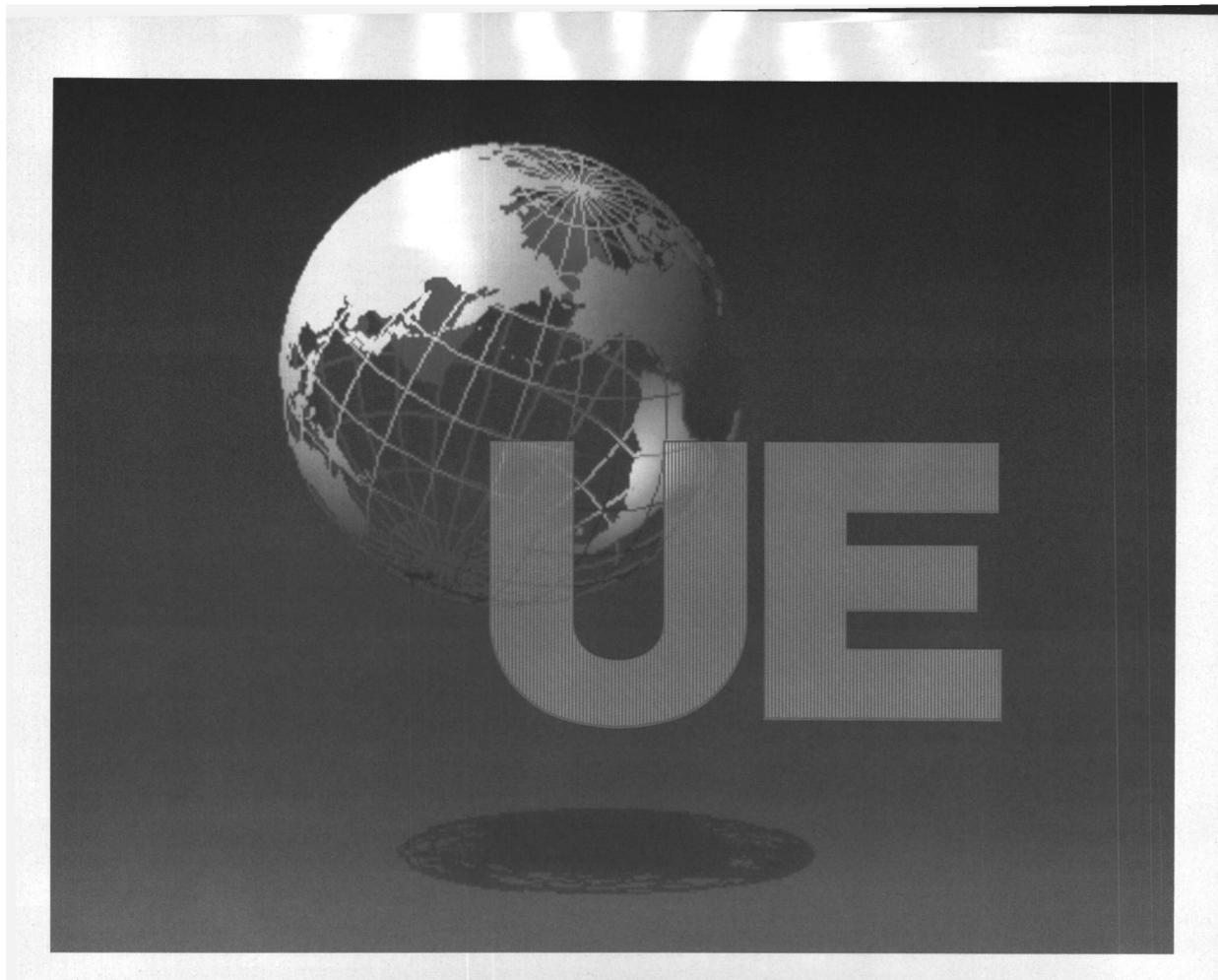
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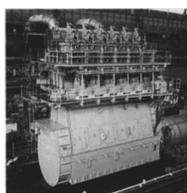


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Circle 289 on Reader Service Card

36 Maritime Reporter/Engineering News

Propulsion Update

MHI Develops New Low-Speed Diesel; First Unit Destined For VLCC

Mitsubishi Heavy Industries, Ltd., has completed a new, large-bore, low-speed marine diesel engine type UEC85LSII, which has a 850-mm cylinder bore and 3,150 mm piston stroke. Mitsubishi has developed the UEC85LSII, a high-efficiency engine, emphasizing reliability by integrating Mitsubishi's advanced technologies.

The first UEC85LSII type engine is the six-cylinder 6UEC85LSII, with an output of 31,500 hp, for installation in a 250,000-dwt very large

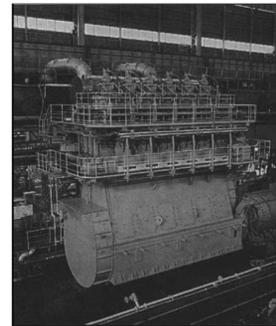
Principal Characteristics Of UECLSII Series

Model	UEC85LSII	UEC75LSII	UEC33LSII
Cylinder bore (mm)	850	750	330
Piston stroke (mm)	3,150	2,800	1,050
Stroke/bore	3.71	3.73	3.18
Engine speed (rpm)	76	64	210
Mean effective press. (bar)	17.05	16.99	17.16
Mean piston speed (m/s)	7.98	7.64	7.35
Engine output/cyl. (hp/cyl.)	5,250	4,000	733
Fuel oil consumption (g/hp)	120	121	130

crude carrier (VLCC) being built by Mitsubishi's Kobe Shipyard & Machinery Works in Japan. A completion and introduction ceremony was recently held at the shipyard with approximately 300 international attendees.

The power output of the UEC85LSII ranges from 26,250 hp in a 5-cylinder model to 63,000 hp in a 12-cylinder model with a 5,250 hp per cylinder. The users are able to select the desirable number of cylinders based on their power needs.

Mitsubishi is now developing a new small-bore, low-speed marine diesel engine type UEC33LSII, with a power output range from 2,930 hp in a four-cylinder model to 5,870 hp in an 8-cylinder model. The first UEC33LSII type engine will be completed in the spring of 1992. The UEC33LSII, which is suitable for small size cargo ships and small size tankers, will have a 330-mm cylinder bore and 1,050-mm piston stroke. The UEC33LSII will be the successor of the UEC37LA, which is Mitsubishi's best selling small-bore, low-speed marine diesel engine. In the development of the engine, most of the emphasis will be on enabling



Mitsubishi Heavy Industries, Ltd., has completed the development of a new large-bore, low-speed marine diesel engine, the UEC85LSII. The first UEC85LSII to be installed will be a six-cylinder model in a 258,000-dwt VLCC.

easier maintenance and providing greater reliability by incorporating Mitsubishi's advanced technology.

For free literature detailing MHI's new long-stroke, low-speed diesel,

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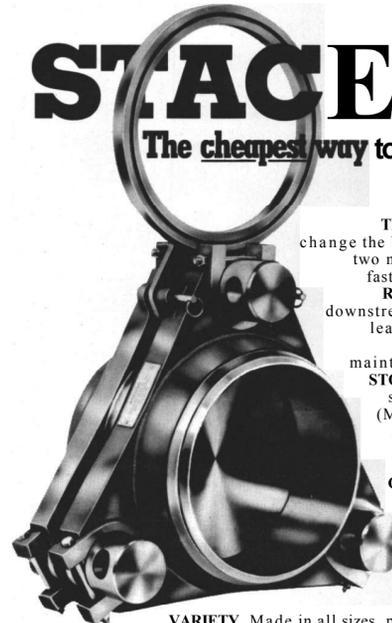
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Circle 205 on Reader Service Card

37

Westinghouse Pursues Diesel Propulsion Markets In U.S.

The Westinghouse Marine Division, Sunnyvale, Calif., and New Sulzer Diesel Ltd., the latter a leading designer of diesel engines, have reached an agreement for Westinghouse to market and manufacture slow- and medium-speed die-

sel marine propulsion in the United States.

Westinghouse intends to build diesel engines for the U.S. Navy's Strategic Sealift program, as well as diesel systems for U.S. commercial ships, Westinghouse officials announced.

The Westinghouse/Sulzer slow-speed diesels will be two-stroke, direct-drive systems generating up to 62,400 horsepower at 54-100 rpm. Approximately 75 percent of the

world's shipping fleet is powered by slow-speed diesel propulsion systems.

The medium-speed diesels will be four-stroke, each generating up to 18,000 horsepower at 510 rpm. These engines are the world's most widely used for propulsion of roll-on/roll-off (RO/RO) vessels, ferries and cruise ships. Their ideal dimensions allow propulsion alternatives for compact, high-horsepower applications.

These systems offer high reliability, long intervals between overhauls and low fuel oil consumption—which translates into low operating costs.

This agreement between Westinghouse and New Sulzer Diesel will provide a high-quality source for American-made slow- and medium-speed diesel propulsion systems.

For full details,

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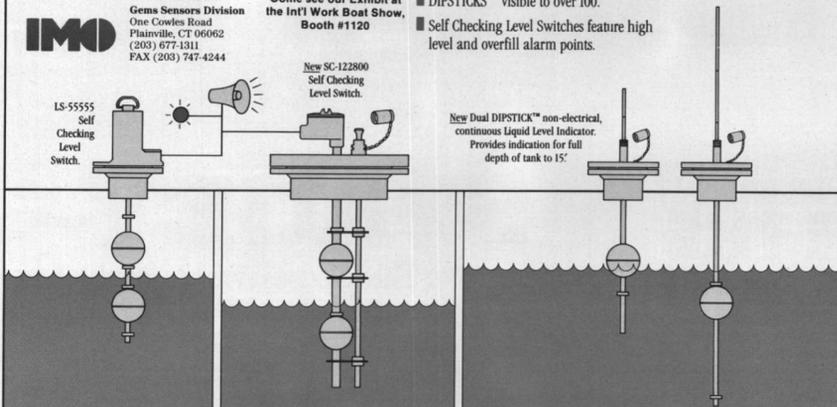
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Toledo Shipyard Marks Final Phase Of Drydock Extension Project

Toledo Shipyard of Toledo, Ohio, recently held a celebration signaling the completion of excavation and the start of final interior work on a \$2.7 million extension of the main drydock at the Port of Toledo facility.

Henry Merce, president of Merce Industries and yard operator, said extension of the drydock will add 100 new jobs at the shipyard. He added that "commitments have already been received for three vessels to use the new drydock this winter. Two of the vessels wouldn't have come unless the dock was extended."

The drydock extension project is expected to be completed by early December, in time for the 1991-92 winter season, the period when vessels traditionally have repair and inspection work completed. Rudolph/Libbe, Inc., Walbridge, Ohio, is general contractor for the shipyard project.

For free literature detailing the facilities and capabilities of Toledo Shipyard,

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Schuyler Rubber Awarded Port Fendering Project

Schuyler Rubber Company of Woodinville, Wash., has been selected by the Port of Oakland to design and manufacture the new Port of Oakland ferry float fendering system, located at Jack London Square in Oakland, Calif.

Schuyler's exclusive design was first used by San Francisco-based Red & White Fleet. According to Greg Armfield, vice president of operations with Schuyler Rubber, "The design and application worked so well for Red & White that it was a natural for the Port of Oakland to use it. The ferry-related business has always been an interest of ours and these projects provide an excellent base upon which to expand our expertise."

Schuyler designs and manufactures a complete line of marine fendering systems and has done so since 1950.

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NEWS ANALYSIS

Appropriations Conference Approves Use Of Foreign Ships For Ready Reserve Force

Source: Shipyard Weekly

In conference on October 1, the Senate receded to the House on the Ready Reserve Force (RRF) provisions in the fiscal year 1992 Maritime Administration appropriations bill. This action effectively killed the Senate amendment which would have restricted RRF purchases to U.S.-flag vessels and repairs/modifications of these ships to U.S. yards (except for the three Danish ships used during Operation Desert Shield/Desert Storm).

Representative Neal Smith of Iowa fought hard to defeat the amendment for strengthening the

U.S. maritime industrial base. Unfortunately, the Senate conferees did not stand their ground. In addition to the U.S. industrial base issue, there is the serious question of whether or not the old foreign vessels contemplated for the RRF are capable of meeting operational readiness goals. MarAd has indicated that it does not intend to do any extensive conversion work on the ships; for example, strengthen the decks to allow them to carry more military tanks or incorporate other special design characteristics that the Army says it needs.

In 1981, the U.S. Government terminated subsidies to U.S. yards. On October 1, 1991, conferees on the FY 1991 Commerce, State, and Justice Appropriations bill effectively agreed with the Administration's plan to use taxpayer's dollars to subsidize foreign yards instead.

As U.S. shipyards continue to close because they cannot compete against subsidized foreign shipyards, the Maritime Administration has lobbied hard to buy ships for the RRF that have been built in subsidized foreign yards. Apparently, the Appropriation conferees agreed with MarAd that it is good policy to take advantage of the very subsidy practices which the U.S. Trade Representative has been trying to eliminate through international negotiations for more than two years—so far, without success.

There is another irony in this situation. The subsidized ships the Administration wants to buy will do little to achieve the purpose of enhancing our nation's sealift capability. They are too old and too slow and lack many of the required de-

sign features. As the Persian Gulf war proved, the military needs ships that have 24-knot speed capability and are maintained in a reduced operating status to ensure quick deliverability of heavy military equipment to the theater of operation. It was clearly demonstrated during Operation Desert Storm that the ships in MarAd's Ready Reserve Force were not up to the task. They were old, poorly maintained, and could not be activated in a timely fashion. Thus, it took six months for the U.S. to get its equipment to the Persian Gulf. In contrast to the RRF, the Navy's seven fast sealift ships which are maintained in reduced operating status, carried 10 percent of all the cargo to the Persian Gulf. It took 71 RRF ships to carry only 20 percent of the cargo.

The nation needs modern, efficient sealift ships, and U.S. shipyards certainly need the business. The policy decision of the Administration and the Appropriations conferees won't significantly improve our sealift capability, but it will further erode our shipyard industrial base.

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69

SNAME NY Metropolitan Discusses Training Of Deck Officers At 'Past Chairman's Night' Session



Past chairmen shown during the SNAME New York Metropolitan Section meeting are: (seated, left to right) John Higginbotham, Lauren McCready, Robert Mende, David Rodger, Edwin Wiggins; (standing, left to right) John Daidola, Arnold Stein, David O'Neil, Joseph Connors, Lester Rosenblatt, Charles Narwicz, Robert Zubaly, Robert Giblon, Monroe MacPherson, Bruce Rosenblatt, Charles Wilson, Nicola Pergola; (Thomas Sartor not shown).

The New York Metropolitan Section of The Society of Naval Architects and Marine Engineers recently opened its 1991/92 season at the Downtown Athletic Club in lower Manhattan. The new section chairman, **Richard Gilmore**, began his tenure by thanking outgoing chairman **Bruce Rosenblatt** for his work during the past season.

In keeping with tradition, the

opening meeting was designated Past Chairman's Night, and **Richard Gilmore** introduced the 18 former chairmen who were in attendance.

The meeting's paper was presented by Capt. **Richard Stewart** of the U.S. Merchant Marine Academy (USMMA), on the topic: "Training of Deck Officers in the 21st Century."

MKW Power Systems Adds International Service Representative

MKW Power Systems Recently announced the appointment of **Teresa Serrano Day** to the International Department. Ms. Day will service and promote MKW Power Systems' products and consolidate its presence in the world market.

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centers, marine applications and offshore oil and gas rigs around the world.

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For more information,

Circle 71 on Reader Service Card



A MISSISSIPPI SPLASH FOR MISSISSIPPI'S CRUISER—Mrs. **Tricia Lott** puts a mighty swing into the christening of Vicksburg (CG 69), the U.S. Navy's newest Aegis guided missile cruiser. As ship's sponsor, Mrs. **Lott** gave CG 69 its traditional champagne christening during ceremonies recently at Ingalls Shipbuilding division of Litton Industries in Pascagoula, Miss. Her husband, U.S. Senator **Trent Lott**, third from right, delivered the principal christening address. The couple's daughter, **Tyler**, assisted her mother as maid of honor. Admiring Mrs. **Lott's** efforts were, left to right: Ingalls president **Jerry St. Pe**, and Vicksburg Mayor **Robert Walker**.

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Circle 289 on Reader Service Card

Erie Basin Bargeport, New Facility, To Open For Ship Repair, Marine Services

The now-idle Erie Basin-Port Authority Marine Terminal on the Brooklyn waterfront will be returned to maritime use as a marine support services center for tugboats, towboats and barges, Port Authority chairman **Richard C. Leone** recently announced.

The commissioners of the bistate agency approved the purchase of the site by the Erie Basin Marine Corporation (EBMC), a joint venture of Hughes Brothers, Inc. and Reinauer Transportation Companies, for \$2,350,000. EBMC will create a facility, to be known as the Erie Basin Bargeport, that will consolidate many of the docking, maintenance and repair services currently offered to towboat, barge and commercial vessel operators at several locations throughout the harbor.

Services offered at the Erie Basin Bargeport will include mooring, inspection and repair of tugs and barges, and other activities that will increase the ability of the local marine support services fleet to operate efficiently in the harbor. The development of the Bargeport will also complement the activities of the New York Shipyard, located directly to the north of the proposed facility.

Hughes Bros., Inc., with headquarters in lower Manhattan, operates a fleet of barges available for rental by marine contractors and is a charter agent, distributor or broker for many types of maritime equipment. The family-owned firm has operated in the metropolitan region for more than a century.

Reinauer Transportation Companies, with administrative offices in Newark, N.J., has facilities throughout the New England area. For nearly 70 years it has offered ship docking, marine construction and repair services to the maritime industries and transportation services to the petroleum industry.

An estimated 150 tugboats and 300 to 400 barges move in and out of the New York-New Jersey harbor on a daily basis.

For further information on Erie Basin Bargeport,

Circle 10 on Reader Service Card.

Concurrent Systems Releases New NAPOL Hydrostatics Package

Concurrent Systems has released Version 2.0 of its easy to use hydrostatics package NAPOL (Naval Architectural Problem Oriented Language).

NAPOL is available in a personal version capable of performing calculations of hydrostatic curves of form and a professional version capable of performing the following calculations: hydrostatic curves of form; trim lines; longitudinal strength; floodable length; limiting drafts; damaged stability; damaged stati-

cal stability; intact stability; cross curves; intact stability in waves; and subdivision index.

The package has been optimized for the IBM PC, AT, 386 and i486 workstations. Graphics can be produced on a PC in high or low resolution, EGA, VGA or Hercules modes. Plotting performance has been substantially improved over Version 1.3, and the customizable plotter interface can be used to drive a wide range of plotters including those using HPGL and Postscript. Graph-

ics files can be generated in DXF, encapsulated Postscript, and HPGL format for inclusion in documents and reports.

To provide compatibility with the U.S. Navy program SHCP there is an input translator, and wherever possible the output is formatted in the same way. NAPOL will perform any SHCP calculation and more.

One calculation option deserves special mention since the author's knowledge it is not yet available in any commercial package. This cal-

culational estimates the IMO subdivision index as laid out in the Department of Transportation document 46 CFR Ch. I "Dry Cargo Ship Subdivision and Damage Stability; Advance Notice of Proposed Rulemaking." This option calculates the subdivision index for compartment groups of up to four subdivisions and provides an accumulative subdivision contribution for a given draft.

For additional information, Circle 73 on Reader Service Card

"New gas'tight gauging tape now ready for worldwide use.

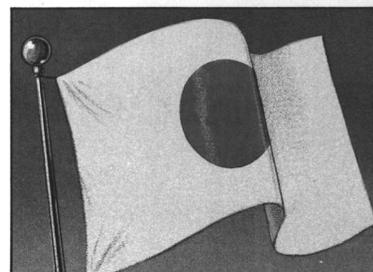
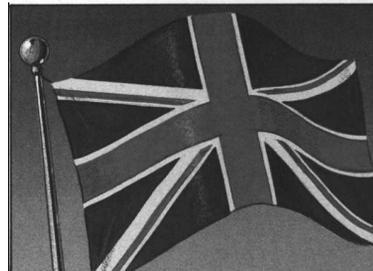
Keeping hazardous benzene vapors safely away from employees, and preventing any escape into the atmosphere, are rapidly becoming pressing issues for shipowners and operators at U.S.A. and all worldwide ports.

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MMC currently makes a stainless steel version of this closed tape for handling toxic and corrosive liquids in the chemical processing industry.

This new lightweight version meets all USCG regulations and has FM, BASEEFA, CSA and SAA approvals.

Orders are now being taken for delivery by the end of the year.



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Circle 251 on Reader Service Card

McDermott Sets Production Deck No. 1 For Freeport McMoRan Sulfur Project

McDermott Marine Construction's Derrick Barge 50 has installed the Production Platform No. 1 deck for Freeport-McMoRan Resource Partners Main Pass Block 299 Sulfur Project in the Gulf of Mexico, completing the western one-

third of the 15-platform offshore sulfur mining complex. The complex is scheduled to be operational in mid-1992.

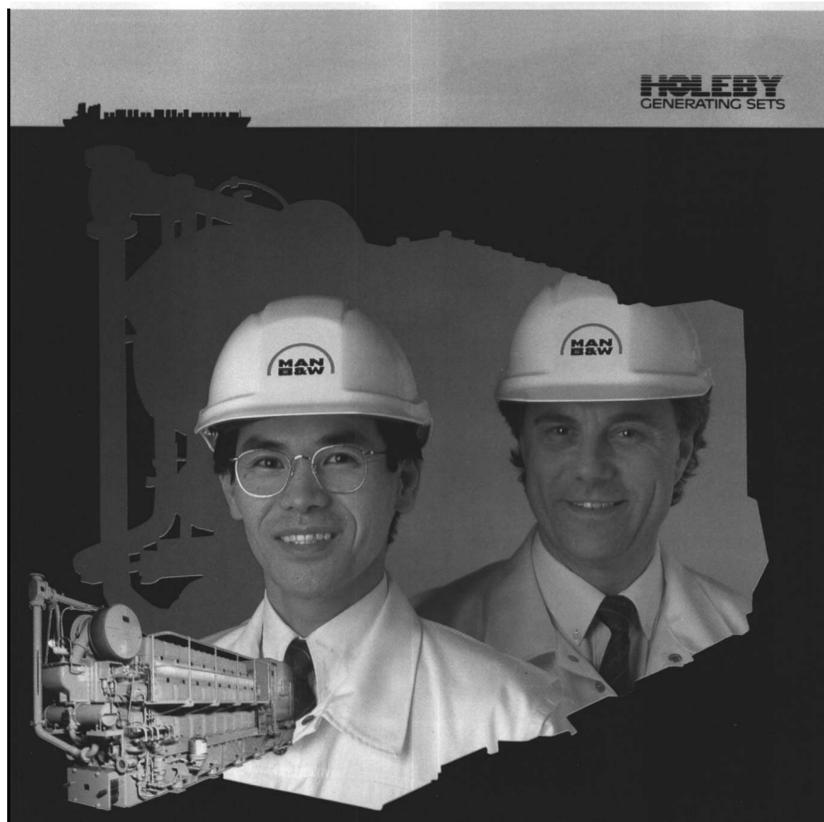
The 3,200-ton deck will be used in the production of the estimated 67 million long tons of sulfur being developed in Main Pass Block 299 by Freeport-McMoRan Resource Partners. This is the largest existing Frasch sulfur reserve in North America. McDermott's Derrick Barge 50, which set the deck, is the

most technologically advanced derrick barge in the Gulf of Mexico. It can lift loads up to 4,400 short tons and, with its responsive ballasting system, can rotate loads up to 4,180 tons. Its four-thruster, variable-pitch dynamic positioning system provides propulsion speeds of 11 knots, allowing it to reach worksites, set up, and perform work quickly.

For the Main Pass 299 Project, McDermott is also building three platforms for the recovery of oil and



McDermott's DB50, rear center, sets Production Platform No. 1 deck for Freeport-McMoRan Resource Partners (Limited Partnership) Main Pass Block 299 Sulfur Project in the Gulf of Mexico, completing the western one-third of the 15-platform offshore sulfur mining complex.



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Circle 289 on Reader Service Card

natural gas reserves, estimated to be between 35 million and 50 million barrels of oil and approximately 8 billion cubic feet of gas. These structures are expected to be completed and oil and gas operations scheduled to begin later this year.

Keppel Adds 20,000-DWT Dock At Philippines Yard

Keppel Philippines Shipyard, Inc. (KPSI) has enhanced its capability by adding a new 20,000-deadweight ton floating drydock to its facilities. The firm now has three docks, two others with capacities of 6,000 dwt each.

Named Keppel Floating Dock No. 3, the new dock has an overall length of 518 feet and a clear width of 75 feet, with maximum docking draft of 23 feet and maximum docking weight of 7,500 tons.

The new dock is served by two cranes and installed with a chain mechanism to enable the repositioning of bilge blocks while the dock is submerged.

KPSI has also constructed a new pier to provide additional berthing space for vessels undergoing alongside repairs. The total berth space in the yard has doubled to about 1,968 feet.

The waterfront has also been dredged to accommodate vessels with draft of up to 33 feet.

Other new facilities include new equipment like compressors, hydroblasting machines, airless painting machines, traveling stage and welding machines.

"With these new facilities, which cost about \$4.6 million, KPSI is well equipped to meet the drydocking needs of interisland vessels with bigger tonnage," said **Hoe Eng Hock**, president of KPSI. "At the same time, we are also extending our services in this highly competitive industry to international ship-owners."

For free literature detailing Keppel Philippines Shipyard,

Circle 141 on Reader Service Card



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National Oil Spill Response Capability

Oil Spill Equipment Purchased By Coast Guard Must Avoid Private Sector Duplication

*Coordination With Private Organizations
Necessary For Effective National Investment*

The national spill response capability that the Oil Pollution Act of 1990 (OPA) calls for may take a number of years to develop. The Congress thus provided for continued use of Coast Guard equipment to assist in containing and removing privately spilled oil. To fulfill its role, the Coast Guard will expand its spill response operations and purchase and position spill response equipment at selected locations around the country. At the same time, however, the Congress, in the conference report accompanying OPA, signaled its intention that agency plans for acquiring and placing equipment be closely coordinated with those of private sector organizations and others to ensure an optimally effective national investment in response capabilities and avoid unnecessary and wasteful duplication.

As a method of complying with the instruction to avoid duplication, OPA directs the Coast Guard to compile and review a comprehensive inventory of all available response equipment. This information is vital to informed decision-making regarding Coast Guard equipment purchases and placement.

Coast Guard headquarter officials said that the agency's collective knowledge of what exists in the way of spill response equipment and where it is located was informally factored into the Coast Guard's plans for purchasing and positioning equipment.

The Coast Guard plans to acquire and position response equipment are at an advanced stage of development. Out of \$21 million in multiyear funds appropriated by the Congress in fiscal year 1991 (available for fiscal years 1991-95), the agency plans to spend, by the end of fiscal year 1992, approximately \$7 million to establish a third

strike team and approximately \$14 million to purchase and position standardized packages of response equipment at selected locations across the country. The agency is also planning to spend \$7 million it has requested for fiscal year 1992 to replace equipment for removing spilled oil from the water. The Coast Guard expects to receive bids for new equipment in the near future and to begin taking delivery in January 1992.

Industry's plans to acquire equipment are also well advanced. The Marine Spill Recovery Corporation (MSRC) plans to spend approximately \$900 million by February 1993 (when it expects to be fully operational) to acquire state-of-the-art response equipment, facilities, and trained personnel. As a result of this investment, MSRC is expected to have by far the largest response capability in the nation (see Fig. 1), many times the Coast Guard's relatively modest capability (existing as well as planned). Several prominent regional response cooperatives are also undertaking or planning major new investments totaling \$78 million to increase their equipment inventories.

The Oil Pollution Act places on industry, for the first time, clear responsibility for developing the capability to contain and remove oil spills it creates. For the first time, also, OPA gives the Coast Guard the authority and means to ensure that industry takes the steps necessary to fulfill its obligations. Implicit in OPA's assignment of responsibilities is the notion that once industry has put in place the response capabilities mandated — evaluated and certified as adequate by the Coast Guard — there will be a reduced need for the agency to maintain and operate equipment of its own to contain and remove private sector spills.

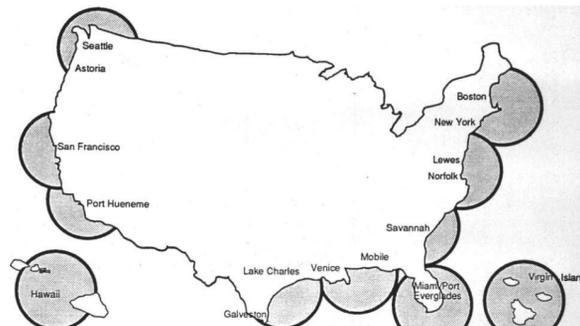


Fig. 1 Location of The Marine Spill Recovery Corporation's Response Vessels

Circle 339 on Reader Service Card

**North Florida Shipyard
Reactivates/Refurbishes
RO/RO Trailer Vessel**

Reactivation and refurbishment of the 700-foot-long by 92-foot-beam RO/RO trailer vessel S/S Northern Lights (Ex. S/S Puerto Rico) is being accomplished by North Florida Shipyard, Inc., Jacksonville, Fla., at its Commodore Point Facility, after being laid up for approximately three

years and following its recent acquisition by Totem Ocean Trailer Express, Inc. (TOTE).

Work on the vessel includes blasting and coating of the entire exterior from top of mast to water line; extensive interior steel surface preparation and preservation; extensive hull/structural steel repairs, including deck plating renewals, shell plate repairs and loading ramp modifications; complete retubing and reconditioning of port and starboard boilers; complete removal of all interior

insulation, refractories and renewal of same in port and starboard boilers; refurbishment of all pumps and electric motors; refurbishment of all deck machinery; extensive ballast system piping modifications; reconditioning/renewal of main propulsion and generator turbines; and renewal of a major portion of engine room insulation.

The work, which was to take approximately three and one-half months, is scheduled to be completed this month. The vessel will then be

towed to Mobile, Ala., for drydocking and accomplishment of underwater work, which will be done in approximately three to four weeks.

For free literature on the facilities and capabilities of North Florida Shipyard,

Circle 51 on Reader Service Card

**New Chevron Tanker
Christened In Brazil**

In a recent ceremony at Ishikawajima do Brasil Estaleiros S.A. (ISHIBRAS) shipyard in Rio de Janeiro, Brazil, the third in a series of four 150,000-dwt tankers was christened and delivered to Chevron Corporation.

Chevron's newest tanker was christened the Bruce Smart in honor of the director of Chevron Corporation. The ship was christened by Mr. Smart's wife, Edith.

With the addition of the Bruce Smart, Chevron's worldwide tanker fleet now stands at 41. These four new identical tankers, under contract with Mitsui & Co./Ishikawajima Harima Heavy Industries Company, Ltd. (IHI), are being built by IHI and its Brazilian affiliate, Ishibras. The last vessel of this series is scheduled for delivery in February 1992. These four new tankers are replacing older vessels as part of an ongoing Chevron fleet retirement and renewal program.

The Bruce Smart will carry approximately 1,100,000 barrels of crude oil on each voyage. Its first delivery is scheduled to be a cargo of West African crude oil to Chevron's Philadelphia Refinery.

**Semisubmersible Begins
Scheduled Liner Service
Transporting Yachts**

Yacht Carriers Ltd. recently began a new scheduled service dedicated to transporting yachts between south Florida, the Mediterranean and the Caribbean.

Ocean Marine Consultants and Surveyors, Inc. (OMCS), with offices in Port Everglades, Fla., and Mandelieu, France, are the exclusive worldwide representatives for this service.

The Yacht Servant, a semisubmersible ship, rotates between Toulon, France, Port Everglades, Fla., and Saint Thomas, USVI. A special voyage to the West Coast for the America's Cup is planned for the end of this year.

The 456-foot-wide by 105-foot-beam Yacht Servant will be using the float-on/float-off system to load and discharge the yachts. This means that the ship will ballast down to allow seawater into the cargo bay so that the yachts can conveniently float in under their own power. Once the yachts are in place and secured, deballasting begins and the yachts come to rest safely on specially designed bedding, stern and chine supports.

For free literature giving more information,

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Maritime Reporter/Engineering News

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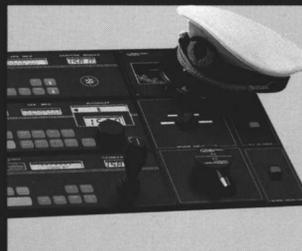
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Allied Shipbuilders' ship-assist tug Cates 3.



Towboat Karen K. from Avondale Boat Division.



Multi-mission environmental boat ECO-110 from Bollinger Machine Shop & Shipyard.



Crewboat Sam McCall from Gulf Craft.

OUTSTANDING OF 1

OUTSTANDING WORKBOATS OF 1991

Vessel/Type	Main Engines	Builder
Cape Hatteras/Supply boat	(2) EMD	Leevac Shipyards
Cates 3/Tug	(2) Caterpillar	Allied Shipbuilders
CCW Spirit/Skimmer	(2) Caterpillar	Munson Mfg.
Choctaw/Towboat	(2) Detroit Diesel	Balehi Marine
Discovery Isl./Supply boat	(2) EMD	Steiner Shipyard
ECO-110/ORV	Cummins	Bollinger Machine
Karen K./Towboat	(2) Caterpillar	Avondale Boat
Linda/Utility boat	(2) Detroit Diesel	Service Marine
Mr. Vick/Supply boat	(2) EMD	Trinity Marine
Sam McCall/Crewboat	(6) Cummins	Gulf Craft

Ranging from a small, maneuverable coastal and inland multi-mission environmental boat to a large new generation deep-water supply vessel, this year's top ten workboats built by second-tier U.S. and Canadian shipyards represent a wide range of hull styles, technical innovations, operational environments, horsepower ranges and service requirements.

Half of this year's "Outstanding Workboats of 1991" are drawn from the Gulf of Mexico's offshore sector, comprising three supply boats, a crewboat and a utility boat. The others include two towboats for the American inland waterways, two vessels specially designed for the oil spill recovery market (one for the Florida coast and one for the California coast) and a Z-drive harbor tug operating out of the Port of Vancouver, B.C., from the lone Canadian builder represented among this year's award winners.

CAPEHATTERAS Leevac Shipyards

Circle 176 on Reader Service Card
The MV Cape Hatteras is a 200-foot by 40-foot by 15-foot offshore supply vessel that was built by Leevac Shipyards, Inc., for Sea Mar Operators V, Inc., and delivered in December 1990. The Cape Hatteras is presently under charter to Western Petroleum Services operating

out of Venice, La.

The Cape Hatteras is more than just a straight supply vessel. In addition to being powered with a total of 3,000 hp provided by a pair of EMD 12-645 diesels coupled via Falk reduction gears to twin Avondale-built, four-blade stainless steel screws, she has a 600-hp Schottel S-300L bow thruster which allows the vessel to maintain station, whereas other vessels might have to head for safe harbor. Her main engines were rebuilt by Design Power International.

Auxiliary power for the vessel is supplied by two Detroit Diesel 8V71 diesels and two 125-kw generators. Her thruster is powered by a Detroit Diesel 16V92 NA with Twin Disc reduction gears. Her thruster and generator engines were supplied by Stewart & Stevenson Services.

Of particular interest is her "Tech Deck," which is a fully air conditioned 300 square foot room at the aft 0-1 deck overlooking the expansive 4,250 square foot clear back deck area. The equipment carried on the back deck may be controlled from this technical room with full visibility through windows that oversee the operations. The elongated after pilothouse station also provides excellent visibility for the vessel's master to oversee the entire operation and maintain full navigation visibility.

In addition to the cargo that may be carried on deck, the Cape Hatteras



Discovery Island, a supply boat from Steiner Shipyard.

WORKBOATS

9 9 1

has built-in capacity in the hull for 5,000 cubic feet of dry bulk products in SMATCO 4-P tanks and 1,755 barrels of liquid mud in four hull tanks. All tanks are controlled from the after control station in the pilot-house.

The Cape Hatteras includes accommodations for 21 persons. Tankage includes over 62,000 gallons of fuel, 11,000 gallons of potable water and sewage holding for 2,000 gallons. The vessel is classed with ABS as Maltese Cross A-1 and AMS, Circle E, full ocean supply service. Admeasured domestic gross tonnage is under 300 gross tons.

CAPE HATTERAS Equipment List	
Main engines (2)	EMD
Propellers	Avondale
Thruster	Schottel
Thruster engine	Detroit Diesel
Generator engines	Detroit Diesel
Reduction gears	Falk
Thruster reduction gear	twin Disc
Engine controls	WABCO
Steering controls	EMI
Shafting	Aquamet
Coatings	International Paint
VHF radio	SEA
SSB radio	SEA
Radar	Koden
Compasses	Cassons/Plath
Loran	Furuno
Liquid mud pumps	Mission Magnum
Other pumps	Aurora/Viking/Hydromatic
Dry mud compressor	Quincy
Simplex/Duplex filters	Racor
Inflatable rafts	Switlik
Windows	Kearfott
Searchlights	Carlisle & Finch
Supply/exhaust fans	Hartzell
Weathertight doors	Cornell Carr

CATES 3 Allied Shipbuilders

Circle 177 on Reader Service Card
During the past year, North Vancouver, Canada builder Allied Shipbuilders Ltd. delivered the 74-foot-long by 28-foot-beam tug Charles H. Cates III (Cates 3) to

C.H. Cates & Sons Ltd., also of North Vancouver. The vessel, constructed to the design of Robert Allan Ltd., is the latest in C.H. Cates & Sons' fleet of Z-drive ship-assist tugs for service in the Port of Vancouver.

Configured as a shift boat, with day room facilities only for the crew of two persons, the Cates 3 is essentially identical to other Z-drive tugs in the Cates fleet, with twin Z-drives in a "reverse-tractor" configuration. The wheelhouse is designed for one-man operation and has now been refined through three vessels to the point where every feature is situated optimally for safe and effective control of the tug. Visibility is virtually unimpeded through 360 degrees, with excellent downward and overhead vision all-round.

Main engines on the Cates 3 are a pair of Cat 3512 TA diesels, each rated 1,175 bhp at 1,600 rpm for the ship-berthing service. Each engine is connected to a Niigata Model ZP-2A 360-degree azimuthing drive through a Niigata Model RGC-130K clutch/reduction gear, and Geislinger torsionally resilient coupling.

The electrical generating system on the Cates 3 comprises two main generator sets, each a 95-kw, 1,800-rpm Cat model 3304 B. The sets are connected for nonparallel operation, with automatic load transfer.

One of the many features of this tug is the use of electric power for the main steering motors and hawser winch. By use of a Mechtronics Series 59000 frequency controller, full variable speed control is obtained on these standard AC motors.

As well as demonstrating the exceptional maneuverability and control associated with the twin Z-drive configuration, the vessel recorded sustained bollard pulls of 34,015 kg ahead, and 30,720 kg astern, and a free running speed of 11 knots.

One of the unique features of the Cates 3 is the line-handling crane on the foredeck. An Atlas extending, knuckleboom crane is used to trans-

(continued page 48)



Oil skimmer CCW Spirit from Munson Mfg.



Supply boat Cape Hatteras from Leevac Shipyards.



Trinity Marine-built supply boat Mr. Vick.



Utility boat M/V Linda from Service Marine Industries.



Towboat Choctaw from Balehi Marine.

Outstanding Workboats (continued)

mins diesel, with Twin Disc reduction gear and one 20-inch by 16-inch four-blade propeller. Mr. Doyle said the boat is extremely maneuverable and can "pivot on a dime."

ECO-110 Equipment List	
Main engine	Cummins
Reduction gear	Twin Disc
Engine controls	Morse
Steering controls	Wagner
Oil separator system	Vikoma
Dispersant system	ABASCO
Shafting	Aquamet
Coatings	Devran Epoxy
VHF radio	Furuno
Radar	Furuno
Loran	Northstar

Other equipment featured on the ECO-110 includes a 300-gpm fire pump, 230 gpm oil transfer system, self-dumping trash bucket, 50-hp hydraulic system, Furuno 1750 radar and FM-2510 VHF radio and a Northstar 9000 combination GPS/Loran.

Marc Stanley, general manager of Bollinger Machine Shop & Shipyard said, the ECO-110 has an oil recovery rate of 200 gallons per minute. She is set-up to pump her recovered oil into rubber bladders or directly into barges or ships.

Formed in November 1990, Ecomarine USA provides advanced technology and services for oil spill response, marine pollution control, and marine monitoring and mapping. The company leases fleets of environmental vessels to government agencies, businesses and other groups concerned with keeping the nation's waterways clean.

Ecomarine USA's strategy is to

form partnerships with regional companies knowledgeable about the local maritime market.

KAREN K. Avondale Boat

Circle 182 on Reader Service Card
The first of a new generation of advanced towboats, the Karen K., was christened and delivered by the Boat Division of Avondale Industries to owner National Marine, Inc., New Orleans, La. The 168-foot Viking 2000 Class towboat will be operated by the Stokes Towing Company, Inc., Greenville, Miss.

On hand at the New Orleans christening ceremony were John P. O'Toole, president of Viking Maritec, Inc., Oakdale, Pa., whose firm designed the boat, Barry Heaps, vice president/manager of Avondale Boat Division, Capt. David L. Stokes, Stokes Towing Company, Inc., and Dominic J. Verona, president of National Marine, Inc. The principal speaker at the event was Wayne Rogers, the actor from the TV show "MASH." Mrs. Karen Miller Kappel, wife of Joseph J. Keppel, president and chief executive officer of the Vectura Group, Inc., was the vessel's sponsor and namesake, while Patricia L. O'Toole, Mr. O'Toole's wife, served as Matron of Honor, and LeAnna Jo Thompson, daughter of Mr. and Mrs. J. Wylie Thornton, served as the Flower Girl. Mr. Thornton is the assistant general manager at the Avondale Boat Division.

The design for the Viking 2000 has been in development since September 1989. She has an overall length of 168 feet, beam of 45 feet and draft of 11-1/2 feet. The Karen K. is propelled by two 3,400-hp Cat-

pillar 3612 diesel engines with Reintjes WAV 4450 gears and five-blade 115-1/2-inch variable pitch stainless steel propellers. Karl Senner, Inc., New Orleans, La., supplied the Reintjes reverse reduction gears with internal hydraulic propeller shaft brakes and two Rexroth pneumatic remote control systems. Avondale's Harvey Quick Repair Propeller Shop manufactured the vessel's twin screws.

Electrical power is provided by two 165-kw Caterpillar SR-4 generators driven by Caterpillar 3306T diesels.

Viking Maritec, who is an affiliated company of the Vectura Group and who has about 5,000 vessels of their design, including 70 Viking Class boats, operating on America's inland waterways, claims that the Viking 2000 design offers the advantages of 50 percent less lube oil consumption, 50,000 hours before engine overhaul, full ahead to full astern in "eight seconds flat," lack of rudder shutter, more durable Kort nozzles, double the potable water capacity of boats of similar sizes, isolated vibration-free deckhouses and greater crew comforts.

According to Mr. O'Toole, Viking Maritec is currently developing updated versions on its 1,800-hp hull through the 8,400-hp hull, with future plans to update the design of the 10,500-hp, triple-screw hull.

The designers say that the new class has retained the best features of previous models, while incorporating a number of design improvements to give Viking 2000 owners a greater competitive advantage. At 168 feet by 45 feet, the Karen K. is larger than previous Vikings. Horsepower has been increased to the 6,400-through-6,800 horsepower range. Potable water tankage has

also been expanded to hold 30,000 gallons.

Less noticeable improvements include a hull framing which has been designed for greater strength and to minimize operating sound and vibration. The upperdeck and pilot-house, in fact, are vibration isolated with house isolation mounts from Vibration Eliminator.

KAREN K. Equipment List	
Main engines (2)....	Caterpillar
Propellers	Avondale
Generators	Caterpillar
Generator engines	Caterpillar
Reduction gears	Reintjes
Engine controls	Rexroth
Steering controls...	Control General
Deck winch	NABRICO
Capstan	Schoellhorn Albrecht
Coatings	International Paint
VHF radio	ICOM
SSB radio	ICOM
Radar	Furuno
Pumps	Ingersoll Rand
Separator	Alfa Laval
Autopilot	Radio Zeeland

LINDA Service Marine Industries

Circle 183 on Reader Service Card
The utility boat M/V Linda was recently christened and delivered by Service Marine Industries to Gilbert Ceramic Boats, Inc. of Golden Meadow, La.

Christened by Mrs. Linda Raphael, daughter of owner Gilbert Ceramic, the M/V Linda has a length of 145 feet, beam of 36 feet and depth of 11 feet 6 inches. She has a capacity of 1,200 barrels of 22 pound liquid mud, 180,000 gallons of fresh water, 32,000 gallons of fuel oil, 380 long tons of deck cargo on (continued page 52)

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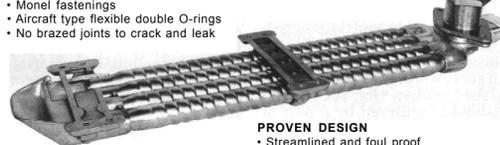
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Maritime Reporter/Engineering News

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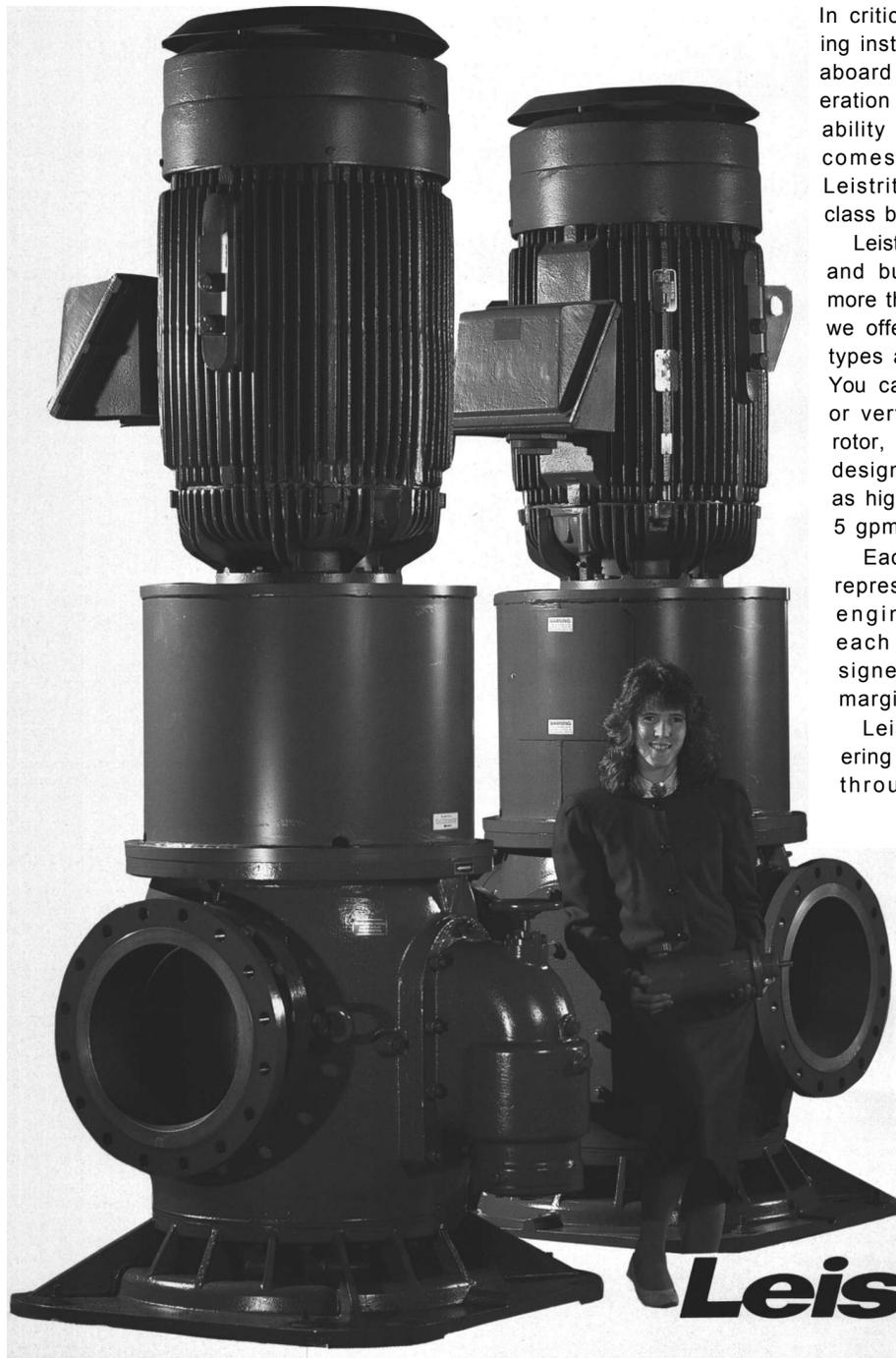
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Circle 204 on Reader Service Card



Outstanding Workboats
(continued)

2,800 square feet of deck space, quarters for 18, and EEP certified for 150 persons.

The two main engines are Detroit Diesel 8V149 rated at 760 bhp at 1,800 rpm, with Twin Disc MG-520 gears. The two generators are Detroit Diesel 6-71 model 1063-70005 DDAD with 75-kw gensets. The

boat has a Schottel S-103-L bow thruster rated at 226 bhp at 2,100 rpm driven by a Detroit Diesel 6-71 through a Twin Disc 509 gear.

The M/V Linda is equipped with a 5,200 gpm fire monitor system. The pump is a Peerless horizontal split case pump, type 10AE20 rated at 5,200 gpm at 175 psi, driven by a Detroit Diesel 16V92 developing 675 bhp at 1,900 rpm.

Electronics were furnished by Frank L. Beier Radio. The switch-

LINDA Equipment List	
Main engines (2)	Detroit Diesel
Reduction gears	Twin Disc
Diesel generators...	Detroit Diesel
Bow thruster	Schottel
Thruster engine	Detroit Diesel
Engine controls	Kobelt
Orbitrol steering system ...	Skipper Hydraulics
A/C	Harris Refrigeration
Fire monitor	Stang
Fire pump	Peerless

board was furnished by Power Panels. Main engine controls are Kobelt and furnished by the A1 George Company. The Orbitrol steering system was furnished by Skipper Hydraulics, Inc.

Air conditioning was furnished by Harris Refrigeration. Insulation was done by Insulation Incorporated.

Gilbert Cheramie Boats, Inc., operates one of the largest utility boat fleets in the Gulf of Mexico, with more than 20 boats, the last three of which have been built by Service Marine Industries.

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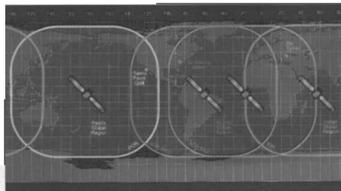
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MR. VICK Trinity Marine

Circle 184 on Reader Service Card

When the offshore oil and gas industry was saturated with supply boats in the 1980s, construction of the support vessels virtually stopped for almost 10 years.

However, naval architects and marine engineers at Trinity Industries, Inc., Trinity Marine Group, Gulfport, Miss., and their customer, Oil and Gas Rental Services, Inc., Morgan City, La., were hard at work.

They were busy reassessing and redefining the role of supply boats for the beginning of the 21st century. It was determined that the new generation of supply boats would have to be more versatile in order to work just about anywhere in the world to assist in the exploration and production of offshore oil and gas. They would have to carry more cargo, to greater distances, more economically and more efficiently. And, they would have to take advantage of technological advances while being more ergonomically friendly to crews and easier to maintain.

"It was a tall order, but all of these goals have been achieved in the Mr. Vick, the first truly all-new supply boat of the 1990s," said **John Dane III**, president of the Trinity Marine Group.

She is the first of four identical 220-foot by 44-foot by 16-foot sister ships being built by Trinity for Oil and Gas Rental Services, Inc., Morgan City, La.

The most obvious difference is the size of the new boat—220 feet when compared to a typical 180-foot counterpart of the 1980s.

Mr. Vick can carry 2,224 barrels of liquid drilling mud in four tanks, and 8,000 cubic feet of dry mud in her six dry mud tanks. The six dry mud tanks were built by Trinity's tank division in Tulsa, Okla.

Her 150-foot by 34-foot aft deck provides 5,100 square feet of space for up to 1,000 long tons of cargo. Mr. Vick's 44-foot beam and 16-foot depth enables her to work in both shallow and deep water and her 61,000 gallon fuel capacity gives her long range capability.

She is powered by two remanufactured General Motors EMD 16-645CE6 diesel engines developing a total of 4,000 hp which can drive the ship to 14 knots.

The engine room is a showcase for much of the innovative thinking in the vessel's design. The big EMDs are easily accessible because the

auxiliary generators and main switchboard are installed on a raised "mezzanine" at the rear of the engine room. The result is more space for each piece of equipment which translates to easier, quicker maintenance.

Two small additional 90-kw ONAN hotel generators driven by two Cummins 6BT5.9-G/GC2 diesels on the split level eliminate the need to operate larger 360-kw ONAN generators driven by Cummins KTA19-G/GC2 diesels and its attendant noise, vibration, and fuel consumption while in port.

Access to the engine room is through the 100-foot-long centerline companionway separating the mud tanks and through unique port and starboard stairways from the aft deck.

"We wanted to make it easier and safer for our people to get to the engine room," said **Bill Hidalgo**, vice president and general manager of Oil and Gas Marine Service which operates the boats.

"We eliminated the old, small, tough-to-use vertical ladders, and built wide stairways with handrails. The result is greater, safer access to the engine room."

Just above the engine room and the mud tanks, is the huge aft deck. A 9,000-pound-capacity hydraulic crane is installed for dockside loading and unloading.

Mr **Hidalgo** added, "We are absolutely pleased with the vessel. The vessel is well-suited for deep-water operations in tough marine environmental conditions. We set out to build a vessel that was easier to operate, safer to operate and one with an ability to operate in an extended weather window. This is extremely important to our customers. She has already shown an ability to operate in 10- to 12-foot seas and still discharge her cargo safely."

The pilothouse is another showcase of advanced features. In a departure from the past, the captain's chair is surrounded by a "wrap-around" forward console instrument cluster with panels featuring easy-to-read and use instruments and equipment.

The computerized, all-digital system projects analog gauges on to a glare-free color monitor. The work station is driven by an IBM PC which allows the captain instant access to data on engines, generators, bow thruster, propeller speed, fuel and more. The computer also records and stores engine data relieving the crew of time consuming task.

Also directly in front of the captain are controls for the boat's Robertson autopilot, joystick controls, and dynamic positioning system. The Robertson DP system controls the bow thruster, main engines, and the two articulated Becker high lift rudders which can be operated independently or in unison.

Mr. Vick is also equipped with a Phoenix fuel monitoring system which permits the vessel to be operated at optimum efficiency for load and sea conditions.

Built in accordance with ABS rules and certified AMS full ocean, the Mr. Vick was constructed at

Halter Marine, Inc., Lockport, La., which is building her three sisters, Judy H., Y.A. Adams, and Ronnie Rousset. When the four vessels are completed, Halter-Lockport will have built 16 supply boats for Oil and Gas Rental Services, Inc.

**MR. VICK
Equipment List**

Main engines (2).....EMD
Hotel & auxiliary
generators.....ONAN/Cummins

Bow thruster engine.....Cummins
Rudders.....Willi Becker
Liquid cargo pump.....Demco
Fire pump.....Aurora
Fire monitor.....Skum
Joystick/DP autopilot.....Robertson
Gyro compass.....Robertson
SSB radio.....JCOM
VHF radios.....Standard
Fathometer.....Furuno
Loran.....Furuno
Loud hailer.....Raytheon
Sound power intercom.....Henschel
Fuel monitor system.....Phoenix

**SAM MCCALL
Gulf Craft**

Circle 185 on Reader Service Card
McCall Enterprises of Cameron, La., recently took delivery of its eighth 160-foot by 30-foot aluminum crewboat, the Sam McCall, from builder Gulf Craft, Inc., Patterson, La. The Sam McCall is the first 160-foot crewboat in the McCall fleet to

(continued on page 109)

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The right choice.

Tippet Marine Rebuilds Fishing Vessel Designed For 1990's Challenges

A seafood catcher/processing vessel—designed to meet the evolving needs of the fishing industry in the 1990s—was recently delivered by Tippet Marine Services, Seattle, Wash., to its owner, Ocean Peace, Inc.

Previously used as a squid trawler

on the U.S. East Coast and H & G trawler in Alaska, the reconfigured 219-foot vessel's processing deck was designed, engineered and installed by Flohr Metal Fabricators of Seattle.

The Ocean Peace was specifically rebuilt to serve as either a factory trawler or as a mother ship that would utilize catcher boats owned by U.S. Marine, based in Kodiak, Alaska. Originally built in 1984 and idle for the last two years, Ocean Peace decided to purchase and reno-

vate the vessel because it presented an opportunity to put together a boat that could adapt to the changing demands of the fishing industry.

Equipment on the Ocean Peace includes two 182 filleting machines, two 52 skinning machines and one 699 mincer, all by Baader; one Tokai heading machine; two Kirimi machines and one 229 header, all by Ryan Engineering; two Flohr continuous candling tables; and eight Jackstone plate freezers which, along with a complete refrigeration

system, were supplied and installed by Sabroe Refrigeration of Seattle.

For free literature detailing the facilities and capabilities of Tippet Marine Services,

Circle 50 on Reader Service Card

\$4.7 Million Navy Contract Awarded SPD Technologies

SPD Technologies has been awarded a \$4.7 million contract from the U.S. Navy to design and manufacture new-generation molded-case solid state circuit breakers with electronic sensing and state monitoring.

The new development will include the application of advanced electronic controls, high-endurance under-voltage tripping, and a state monitoring system featuring digital technology for monitoring, storing and transmitting trip information both locally and remotely.

Upon completion of the design and development phase, a total of 15 circuit breakers will be produced and delivered to the Navy in 1993.

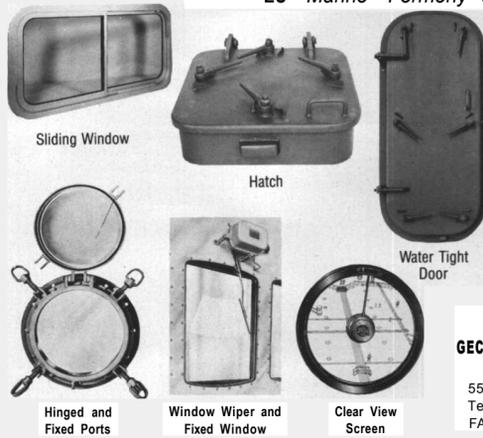
SPD has been a pioneer in the application of electronics in military circuit breakers over the past 20 years. In 1990, the company completed a breakthrough development by producing the first electronically controlled 100 ampere circuit breakers, setting a new standard in shock resistance and reliability.

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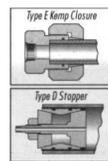
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Circle 341 on Reader Service Card

New York Shipyard Receives Second Navy Drydocking Contract

The USS Nitro (AE-23) recently entered the facility of New York Shipyard Corporation, Brooklyn, N.Y., for an overhaul. The ammunition ship had served in the Persian Gulf Desert Storm Operation and delivered ammunition to the battleship USS Wisconsin three days before the start of military action.

Homeported in the Port of New York at the ammunition base at Earle, N.J., the USS Nitro will undergo hull blasting and coating, tank coating, and shafting, propeller and sea valve overhaul. Extensive repairs to boilers, engines, compressors, and auxiliary equipment will take approximately three months to complete. The Navy contract award for the work is worth \$8.1 million.

As the ammunition ship entered the yard, the USS Clifton Sprague (FFG-15) was completing her drydock repair availability. The \$5.2 million contract on the USS Sprague included major hull modification replacement of the sonar dome, hull, and tank preservation, overhaul and replacement of CP propeller hub and propeller system. Additional repairs included navigation and weapon system, gallery notification and auxiliary machinery.

Maritime Reporter/Engineering News

Hall-Buck Yard Gets New Name, Adds Drydock



Mrs. Barbara Hall, wife of Harlan O. Hall (at right), president of Hall-Buck Marine, Inc., christening the Louisiana facility's new 2,300-ton drydock.

A special double ceremony was recently held at what was formerly called the Port Allen River Plant in Baton Rouge, La., commemorating the renaming of the facility and the christening of its new floating drydock.

Renamed the HBM River Plant, Inc., to more closely identify with its parent company, Hall-Buck Marine, Inc., the facility christened a new 2,300-ton drydock built by Maxon Marine in Tell City, Ind. The christening of the 200-foot-long by 74-foot-wide drydock was performed by Mrs. Barbara Hall, wife of Harlan O. Hall, president of Hall-Buck Marine, Inc. This dock has 65 feet between wingwalls and a 7-foot deep hull, and 17-foot-high wingwalls. The blocks are movable and can be positioned transversely or for either a four-foot or three-foot elevation over the inner bottom for docking barges or boats. A barge can be lifted in approximately 20 minutes. The addition of this drydock, coupled with the existing 800-ton drydock and other extensive repair facilities, will allow HBM River Plant to perform major repairs to barges and boats.

"Before we were strictly topside repair," said Don Duff, Hall-Buck Marine's senior vice president, marketing and engineering. "Now, the new drydock will enable us to compete for large repairs, like bottom replating and cropping. We'll also be looking at vapor recovery system refits."

With the new drydock, Hall-Buck Marine, Inc., has invested over \$3 million in capital expenditures at the River Plant in the five years since it purchased the facility from Midland Enterprises.

For free literature detailing the repair capabilities of HBM River Plant,

Circle 143 on Reader Service Card

Campbell Receives \$611,982 Contract

Campbell Industries, San Diego, Calif., recently received a \$611,982 contract for the restricted availability (RAV) on the non-self-propelled floating workshop YR-60. The Supervisor of Shipbuilding, Conversion and Repair, San Diego, Calif., awarded the contract.

November, 1991 53

Alaska Moves To Buy Acreage For Proposed Port of Anchorage

A \$1 million down payment on 1,200 acres of land is about to be put down by the state of Alaska for land on an island just offshore from Anchorage International Airport, with plans to develop a major seaport there.

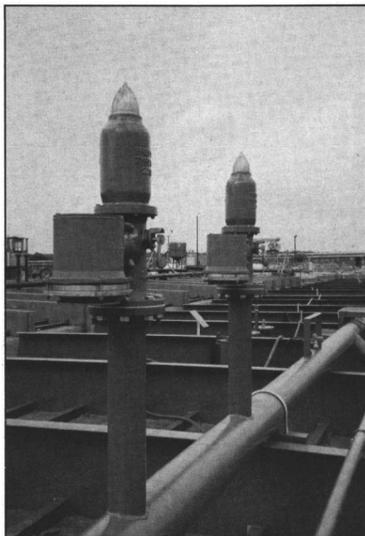
A letter of intent was signed recently by Alaska Governor Walter J. Hickel for the state to buy land on Fire Island for port use. Roy Huhndorf, president of Cook Inlet Region Inc., a native corporation that owns the island, agreed to sell the state 200 acres for \$1 million and to consider the money as down payment on up to another 1,000 acres at \$5,000 an acre.

The region around Anchorage needs the Fire Island port if it hopes

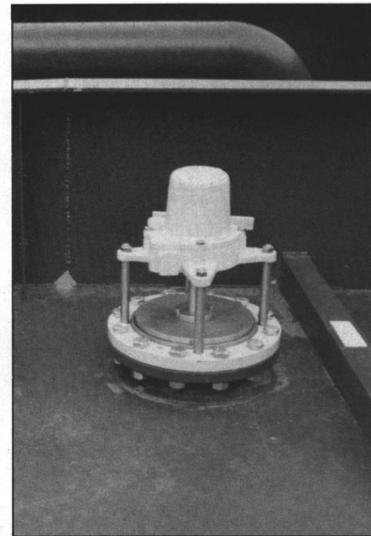
to handle trade on a world-class basis, Governor Hickel, who frequently describes Alaska as the geographic crossroads of the world, said.

Deputy Press secretary to Governor Hickel, John Manly, said land on the west side of Fire Island would be developed into container, breakbulk, petroleum, cold storage and fishing boat terminals.

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The type SV spill valve, pictured above right, is available in a variety of sizes and material combinations. Operation is completely automatic. The valve features a unique opening mechanism that reduces back pressure after opening. SV valves have been tested and certified as per ASTM-F1271

and thus are qualified for use in vapor control systems in accordance with 46CFR 39.20-9(c).

Gas freeing covers are available with flame screen and flame arrestor inserts for inerted and non-inerted applications. All conform to the latest IMO/SOLAS rules and regulations for purging and gas freeing devices.

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Circle 339 on Reader Service Card

Alabama Shipyard In Talks With Danish Shipbuilder

Alabama Shipyard, Inc. (ASI), Mobile, Ala., is in talks with a Danish shipbuilder which could lead to cooperation on the construction of 40,000-dwt double-hulled product tankers.

According to **Danny Sellers**, president of Atlantic Marine Holding Company, Inc. (parent company of ASI), ASI is discussing the possi-

bility of constructing tankers with technical assistance from Burmeister & Wain Shipdesign A/S (BWS) of Copenhagen. Mr. **Sellers** said BWS would provide "the design and technical know-how it has gained in years of constructing double-hull tankers in Copenhagen."

BWS has built double-hull ships since 1984. The vessels were the CPT54E Series 90,000-cubic-meter product carriers and the BCT70 Series 74,000-dwt bulk/OBO carriers. The Danish firm recently intro-

duced the new generation BCT85 Panamax OBO/product carrier, which is designed with a double hull, as required in the U.S. Oil Pollution Act of 1990 and conforms with U.S. Coast Guard regulations. The 40,000-dwt design under discussion between ASI and BWS is believed to be a shortened version of the CPT54E product carrier, incorporating a number of the innovative features of the new BCT85 Class of vessels.

The relatively high average age

of the U.S. tanker fleet and in particular the Jones Act fleet has been one of the main factors in the development of 40,000-dwt tanker. Maritime Administration statistics show that of the 143 privately owned general tankers with unrestricted domestic trading privileges in the U.S.-flag fleet, 87 are 16 years of age or older.

Mr. **Sellers** said that owners have showed interest in this size vessel.

Mr. **Sellers** indicated that although all the assets were not currently in place for series construction of 40,000-dwt tankers, the yard does have the capability to construct vessels of this size. Mr. **Sellers** said the yard is being renovated and expanded and is being developed with the thought of series and modular construction.

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NASSCO Launches Second AOE Ship

National Steel & Shipbuilding Company (NASSCO), San Diego, Calif., recently launched the second of three Fast Combat Support Ships (AOEs) being built by the yard of the U.S. Navy.

The 754-foot supply ship was christened the USS *Rainier* by **Suzanne Callison Dicks**, the wife of Congressman **Norman Dicks**. The traditional breaking of the bottle of champagne over the bow signaled the start of the launch and the 17,000-ton ship glided down the ways to the cheers of thousands of employees, Navy personnel, and guests.

NASSCO was founded in 1905 and was then known as California Iron Works. The company's name was changed to National Steel & Shipbuilding in 1949.

Since 1967, NASSCO has built 31 ships for the U.S. Navy and repaired more than 200 ships. The company also constructed 38 commercial ships during the span. The company employs about 4,000 people.

NASSCO's largest shipbuilding program is the detailed design and construction of three Auxiliary Oil Explosives (AOE) Fast Combat Support ships for the U.S. Navy. An option for a fourth ship may be exercised by the end of this year, bringing the total value of this program to over \$1 billion.

Port Commission Signs Three-Year Agreement With Evergreen Line

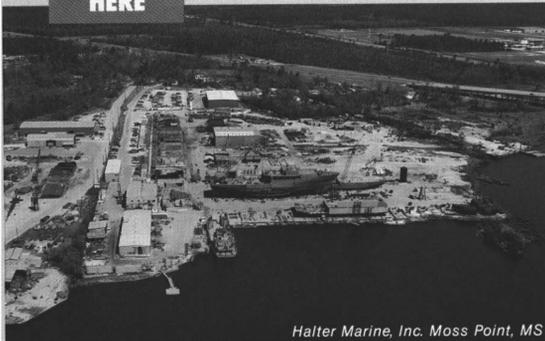
The Port of Portland Commission recently approved a three-year agreement with Evergreen Line, one of the world's largest container carriers, headquartered in Taiwan.

Evergreen Line has served Portland with connections to ports in the Far East and Southeast Asia since the 1970s.

The three-year agreement with an additional one-year renewal option provides preferential use of one berth, two cranes, and 10 acres of backup space at the Port of Portland's Terminal 6 container complex.

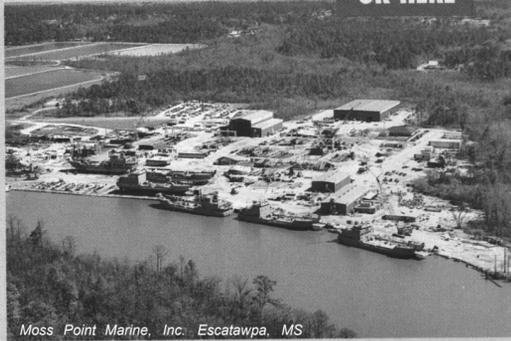
We can build your next boat or barge.

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Halter Marine, Inc. Moss Point, MS

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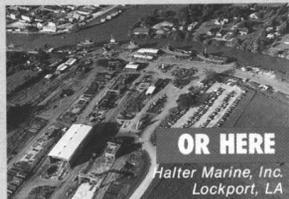


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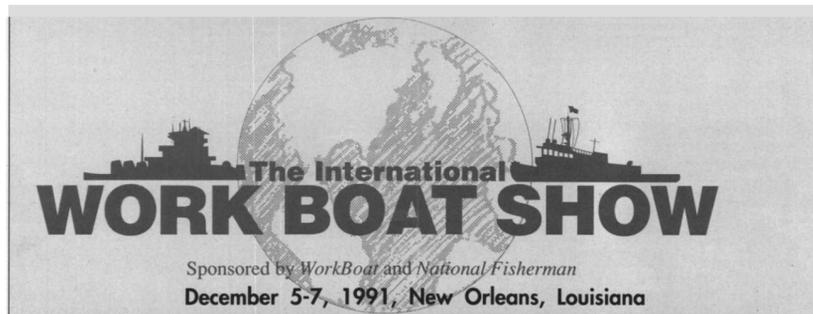
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More than 10,000 workboat and commercial marine professionals are expected to gather at the Louisiana Superdome in New Orleans, December 5-7, 1991 for the 13th annual International Workboat Show, one of the largest trade exhibitions on workboat products, suppliers and services in the world. The show has been devised for workboat industry professionals who build or buy, maintain, supply, own or operate any of the shallow-draft "workhorses" in North America's substantial inland, off-shore or coastal fleets. The latest industry statistics indicate that there are about 7,500 tugs and towboats and more than 30,000 barges operating in American inland, harbor and coastal waters.

Last year, the Workboat Show presented over 350 companies in 650 booths. This year, according to **Stephen McDonough**, director of

sales and marketing for the show, more than 700 booths will be on display. Attendance is also expected to rise to as many as 12,000, the highest attendance figure for the show since the boom days in the Gulf of Mexico in the early 1980s. Mr. **McDonough** attributes the increased interest in the show to a recovery in the shallow-draft industry over the last couple of years, as well as a broadening of the scope of the show to include more on rivers, lakes, and inland waterways, as well as ferries, tugs, towboats and barges. Mr. **McDonough** added that exhibits will highlight products and services for all major segments of the commercial marine industry, including vessels, engines, electronics, safety equipment and gear, etc.

A special feature of the 1991 Workboat Show is "WorkBoat 2000," a seminar program specifically cre-

ated to provide information on current and future industry issues. Marine industry experts will share their special insight, knowledge and experience on the status of the industry today and where it will be in the year 2000.

The seminar will be kicked-off on Friday, December 6 at 9 a.m. by **Steve Thompson**, a specialist in transportation for the Library of Congress and current executive vice president of the Transportation Research Forum and chairman of the Committee on International Trade and Transportation of the Transportation Board. Mr. **Thompson's** keynote address will focus on how the workboat business will change over the next few years.

"I promise you will leave this session better able to understand what national and international economic factors could affect your business

through the 1990s," said Mr. **Thompson**. "Environmental issues, free trade zones, public policy in the U.S. and abroad, new technology in transportation—all these and more could significantly affect the workboat industry. For your company to remain successful and survive in these tough economic times, you must understand what all these factors mean to you," he added.

Following Mr. **Thompson's** keynote address will be "Challenges and Opportunities of Changing International Trade on Inland and Coastal Workboat Trade." Several panelists will discuss how international trade climates affect cargo availability, river conditions, inland transportation of import and export commodities on America's waterways. The seminar will be presented from 10:30 a.m. to noon.

The afternoon's session, from 1:30

p.m. to 3 p.m., is entitled, "Changing Tides for Passengers Vessels." The seminar will focus on the hot topics of dinner and gambling boat investment. It will address the questions, "Could riverboat gambling be a boom or a bust?"; "Will increased environmental concerns lead people to spend money in the smaller nature-tour-type business?"; "Could world peace and prosperity increase the volume of foreign visitors to the U.S.?"; "Will more people take vacations to U.S. resorts, increasing the need for resort ferries?"; and "Could world restrictions, recession and rising fuel prices worldwide encourage Americans to take day or weekend trips more conducive to the gambling and dinner boat segment?"

On Saturday, December 7, from 10:30 a.m. to noon, "Demands on Boat Building through the Year 2000" will be presented. The semi-



nar will focus on what kind of vessels will be in demand, what kind of modifications to construction will need to be developed, public water transportation, and possible emerging markets for U.S.-built boats in South and Central America, as well as Mexico.

The same day, from 1:30 p.m. to 3 p.m., the seminar "Imminent Challenges Facing Offshore Oil, Gas and Mineral Exploration" will be presented. This session will examine the effects of environmental restrictions on U.S. drilling and operation of offshore supply/service boats, offshore mining, and markets for offshore service boat leasing and buying.

For further information, contact National Fisherman Expositions, P.O. Box 7437, Portland, Maine 04112-7437; telephone: (207) 772-3005; or telefax: (207) 772-5059.

1991 International Work Boat Show Exhibitors

ABS Americas	630	C Plath North American Division	456	Haley Marine Gears Inc.	649	Mackay Communications	320	Polyform Scanmarin Inc.	512	Stewart & Stevenson Services Inc.	617
Advanced Industrial Products Inc.	650	The Crosby Group Inc.	1204	Hammonds Technical Service	329	The Mallard Group Inc.	802	Specialists Inc.	1063	Sturdy Marine	331
Air Dresco/Industrial Air & Hydraulics	248	Crowe Rope Company	271	Harrington Constr. Inc.	256	Marco Pollution Control	1253	Powerway (Div. of Covington Diesel)	946	Superior Energies Inc.	905
Alaska Diesel Electric	733	Cummins Engine Co. Inc.	605	Hatch & Kirk Inc.	843	Marine Builders Inc.	1127	Precision Int'l. Co.	128 A	William F. Surgi Equipment Corp.	371
Alexander Industries Inc.	917	Components Inc.	318	Haynes Corporation	348	Marine Development Corp.	157	Precision National Plating Services Inc.	905	Swath Ocean Int'l. Ltd.	958
American Air Filter	545	Dana Corporation Boston	420	HBM River Plant Inc.	1142	Marine Environmental Research Inc.	343	PRS Paint	265	Telcor Instruments Inc.	355
American Boa Inc.	1133	Ind. Products Div.	1153	Hi-Tek Chemical Corp.	321	Marine Propulsion Inc.	604	P & S Diesel Service Inc.	616	Teleflex (Canada) Ltd.	1148
American Diesel Engineering Co. Inc.	755	Dantronics Inc.	420	Hopeman Brothers Inc.	132A	Marine Service & Supply Co.	1143	Quality Diesel Service Inc.	531	Textron Marine Systems	573
American Manufacturing Co. Inc.	433	Datatronics Inc./Rivertronics Inc.	1165	Hosehandlers Int'l. Inc.	1066	Maritime Reporter & Engineering News	1036	Quality Shipyards Inc.	1042	Tharrington "Doodies" Machine Works	267
American Marine Corp.	500	Deansteel Manufacturing Co. Inc.	112	Houma Armature Works & Supply Inc.	261	Raytheon Marine Co.	439	Relco Sales Inc.	905	Thomas Pump & Machinery Inc.	139
American VULCAN Corporation	1065	Deere & Company	671	Houston Marine Training Services	422	Red Fox Environmental	365	Reliable Industries	454	Thrustmaster of Texas Inc.	1163
American Waterways Operators (AWO)	1166	Delhomme Industries	370	Hull Electronics	218	Richard's Galley Equipment	532	Reliable Industries	454	Tideland Signal Corp.	455
Ameron Marine Coatings Division	857	Demaree Inflatable Boats Inc.	1243	Huskie Maritool	1232	Robertson Marine Systems Inc.	305	The Rexroth Corporation	364	Tonan America	658
AMOCO Oil Co.	444	Devoe Coatings	316	Hyde Products Inc.	634	Rolla SP Propellers USA	341	Rice Propellers/ American Int'l. Marine	803	Transmission Engineering Co. Inc.	228
Appleton Marine Inc.	556	Diesel & Gas Turbine Publications	947	Hydradyne Hydraulics	1052	Richard's Galley Equipment	532	Rolla SP Propellers USA	341	Trimble Navigation	1100
Aqua Signal Corp.	1064	Donovan Marine Inc.	1033	Hynautic Inc.	511	Robertson Marine Systems Inc.	305	Rolls Battery Engineering	217	Trinity Marine Group	717
Archway Lighting Supply Inc.	1056	Dreyfus Supply & Machinery Corp.	1116	Ian-Conrad Bergan Inc.	245	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Turbine Specialties Inc.	458
Aries Marine & Industrial Sales	1119	Duramax Marine Div. of Johnson Rubber	1105	ICOM America Inc.	432	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Twin Disc Incorporated	737
Atlantic Marine Inc.	460	Eagle Control Systems Inc.	333	Imo Industries Inc.	1120	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Ulstein Bergen Inc.	625
Atlas Specialty Lighting	369	Eastern Industrial Machine Mfg.	340	IMTRA Corporation	1144	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Ultra Poly Inc.	322
Automatic Power Inc. - A Pharos Company	361	Eastern Shipyard Inc.	1020	Inland Rivers Ports and Terminals	1144	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Ulven Forging Inc.	219
Avondale Boat Division	943	Eaton Corporation/ Airflex Div.	1162	International	332	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	United Engine Life Co.	216
Avondale Industries Inc.	863	Echotec Inc.	510	International Paint	640	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Unitor/Grace Dearborn	464
Avonimtra Corporation	554	Economy Boat Store	600	International Work Boat Show 1991	769	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	US Coast Guard Marine Safety Office	1270
Baker, Lyman & Co. Inc.	1337	Echotec Inc.	510	Inventory Locator Service	801	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Vapor Mark IV	1119
Bayou Marine Inc.	521	Electronic Services Inc.	223	ITW Philadelphia Resins	1119	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Vessel Information Systems Inc.	405
Bayou Marine Inc.	521	Elmwood Dry Dock & Repair	227	Jamestown Metal Marine Sales Inc.	1004	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Viking Fender Co.	1238
Beier Radio Inc.	405	Engine Monitor Inc./ Creative Graphics	213	Jastram Engineering Ltd.	1110	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Viking Life Saving Equipment	1315
Bender Shipbuilding	1005	Envirovac Inc.	566	JBF Scientific Co. Inc.	226	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Viking Life Saving Equipment	942
Berrick Industries Inc.	1248	Envirovac Inc.	566	J C Marine Diesel Inc.	357	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	VWV Enterprises Inc.	869
BF Goodrich	1011	Eureka Chemical Company	229	Johnson Pump of America Inc.	1200	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Volth Transmissions Inc.	1216
Bio-Concepts	1234	Exxon USA	657	Joyalm Environmental Services Inc.	239	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Volvo Penta of America	631
Bird-Johnson Company	1046	Fairbanks Morse Engine Division	106	Kahlenberg Brothers Co.	304	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Walker Boat Yard Inc.	542
Blackburn Marine Inc.	1038	R W Farnstrom & Co. Field Equipment & Service Co.	1043	Kamewa AB	349	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Wall Industries Inc.	570
H O Bostrom Co. Inc.	1062	Fish Expo '92 Boston	789	Kenwood USA Corporation/ Kobelt Manufacturing Ltd.	538	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Wartsila Diesel Inc.	610
Bourg Dry Dock & Service Co.	1032	FloScan Instrument Company Inc.	541	Kodan International Inc.	927	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Waterway Communications Systems Inc.	805
Braden Winch Div. of Paccar	548	Fredeman Shipyard Inc.	411	Koldwave-Heat Exchangers Inc.	1068	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Waukesha Bearings Corp.	1119
Byrne Rice & Turner Inc.	969	Freeman Marine Equipment Inc.	963	Korody Colyer	921	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Wellington Puritan Western Branch	501
Canadian Consulate General	326	Furuno USA Inc.	417	Kreiter Geartech	901	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Williams Inc.	1104
Carboline Company	956	L F Gaubert & Co. Inc.	701	Krupp MaK Diesel Inc.	827	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Willard Marine Inc.	1235
Caterpillar Inc.	705	The Gilman Corporation	1236	Kvichak Marine Industries Inc.	1253A	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Willcox Engineered Products Inc.	1325
Centrico Inc.	967	Glassmaster Co. Industrial Products Div.	311	Lake Charles Diesel Inc.	860	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Williams Detroit Diesel-Allison	244
Chevron USA Inc.	817	Green Marine & Industrial Equip. Co.	664	Lario Pumps	1112	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Wynne Enterprises Inc.	472
Clark Industries Inc.	1169	Lemania Company	368	LeBlanc & Associates Inc.	338	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	ZF of North America	833
Coastal Electric Supply Inc.	210	Lemania Company Lemoine's Marine Refrigeration Inc.	543	LEEAC Shipyards Inc.	672	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254	Zodiac of North America	452
Coastal Wire & Cable Inc.	249	Lemania Company Lemoine's Marine Refrigeration Inc.	543	LSU Firemen Training Program	158	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		
Coastdesign Inc.	136B	Lemania Company Lemoine's Marine Refrigeration Inc.	543	Lufkin Industries Inc.	665	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		
Columbian Rope Co.	900	Lemania Company Lemoine's Marine Refrigeration Inc.	543	LV Petro	457	Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		
COMSAT Maritime Services	1023	Lemania Company Lemoine's Marine Refrigeration Inc.	543			Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		
Conrad Industries Inc. Consolidated	1053	Lemania Company Lemoine's Marine Refrigeration Inc.	543			Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		
Cooper Bearing Co.	968	Lemania Company Lemoine's Marine Refrigeration Inc.	543			Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		
Cospolich Refrigerator Company	323	Lemania Company Lemoine's Marine Refrigeration Inc.	543			Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		
	644	Lemania Company Lemoine's Marine Refrigeration Inc.	543			Rolls Battery Engineering R & R Rig Service Inc.	254	Rolls Battery Engineering R & R Rig Service Inc.	254		

**Report Says
Tanker Supply-Demand Gap
Will Narrow By 1994**

A recent report by a Japanese shipowner states that world tanker supply and demand will come nearer to balance in 1994 than at any other time in the previous decade.

The study, "Review and Outlook of the World Shipping Market," conducted by Mitsui OSK Lines, says

the gap between supply and demand, which now stands at 40.7 million surplus, will dip even lower to 31.1 million. The present level is the lowest gap recorded in 12 years. The tanker tonnage surplus reached its peak in 1983 at 123.7 million dwt.

In oversupply of tanker tonnage as a percentage of total supply, 1994 will mark a more than 15-year low, where surplus capacity will be equivalent to 10 percent of the total tanker supply. Ten years ago, the

corresponding rate was almost 30 percent.

As far as freight rates are concerned, the report projects that the market will level off, with rates firming up in 1993 and further in 1994.

The level of freight rates for large tankers has already overtaken that for 1979, "and is likely to prove considerably firmer than those of other classes [of ship]."

The report indicates that as the gap between supply and demand narrows, higher capital costs, including rising new construction costs, are certain to help push up freight rates.

Projections for tonnage demand assume that U.S.-bound oil trade volume will increase by over 5 percent per year until 1995, and that the Japanese-bound volume will also grow significantly more than the U.S. trade. Demand for oil in Asia will grow even more than Japan and the U.S.

Mitsui has based tanker supply figures until 1993 on the order backlog of newbuildings, and after that on estimated shipbuilding capacity. The tanker scrapping element assumes ships remain in operation for the maximum permissible service life.

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**Trinity Adds
Huge Floating Dock
At Texas Yard**

Trinity Industries, Inc., has strengthened its ship repair and conversion capabilities in Beaumont, Texas, with the acquisition of a 579-foot, 15,000-ton lifting capacity floating drydock.

"With this large, heavy lift drydock, we can accommodate about 90 percent of the ships and boats working on the Gulf Coast," said **John Dane III**, president of the Trinity Marine Group, Gulfport, Miss., which is owned by Trinity Industries, Inc. "It also enables us to bid on U.S. Navy service life extension programs (SLEPs) for its vessels because we now have the

capacity to drydock large ships. As the defense budget is decreased, naval vessels will have to last longer and we can help them do that."

The drydock, AFDM-2, was built by the Navy between 1945 and 1947. It has not been in use for more than eight years and has been in storage at the Navy's reserve fleet in Jefferson County, Texas.

"With an overall length of 579 feet and a width of 116 feet with 87.5 feet between the wingwalls," said Mr. Dane, "we can accommodate most ships and many offshore structures that work in the world's oceans."

Trinity's lease on the drydock began November 1.

For free literature detailing the shipbuilding and repairing capabilities of Trinity Marine,

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**Newpark Resources
Announces Barge
Fleet Expansion**

Newpark Resources, Inc. recently announced that its wholly owned subsidiary, Newpark Environmental Services, Inc., has added 16 additional U.S. Coast Guard certified barges to its fleet, increasing to 31 the number of vessels used exclusively for the movement of nonhazardous oil field waste. Newpark's barge fleet reduces its customer's transportation costs by providing high-capacity equipment to access remediation sites along navigable inland waterways, avoiding the higher cost of shipment by truck or consolidation from smaller capacity marine equipment. The fleet also services Newpark's processing facility at Port Arthur, Texas.

Tom Ballantine, president of Newpark Environmental Services, Inc., the leading processor of nonhazardous oil field waste, stated the additions to the fleet were necessary to support the recent processing capacity expansion provided by the new processing facility at Port Arthur and increasing demand for the company's services.

Newpark Environmental Services is the only processor of nonhazardous oil field waste, creating a commercially reused product from the waste, thereby minimizing its customer's long-term liability.

**MSC Solicits Proposals
To Charter Cruise Ship**

Proposals to time-charter a passenger cruise ship to leave Miami on a secret mission are being solicited by the U.S. Military Sealift Command (MSC). Reportedly, the mission centers around anti-terrorist hijack training for 150 military and civilian personnel.

The MSC, which would reveal few details even to the cruise lines themselves, stated that the vessel, which is wanted for a return voyage on December 7-14, would be sub-chartered to an unidentified U.S. Government agency. Sources suspect the agency to be the Pentagon's super-secret Special Operations Command.

U.S.-flagged ships would be given preference, the MSC said, but the vessel could also be foreign-flagged.

According to the MSC: "The vessel is to be employed in a military exercise in the U.S. South Atlantic/Caribbean/Gulf of Mexico waters. Operations shall generally consist of a movement around a designated at-sea area with an estimated single port call during the charter period."

Emphasizing that for security reasons military exercises are not usually revealed until 15-30 days prior to their start, both the Pentagon and the U.S. Navy Atlantic Command said they were unaware of any exercise in those areas at the stated time.



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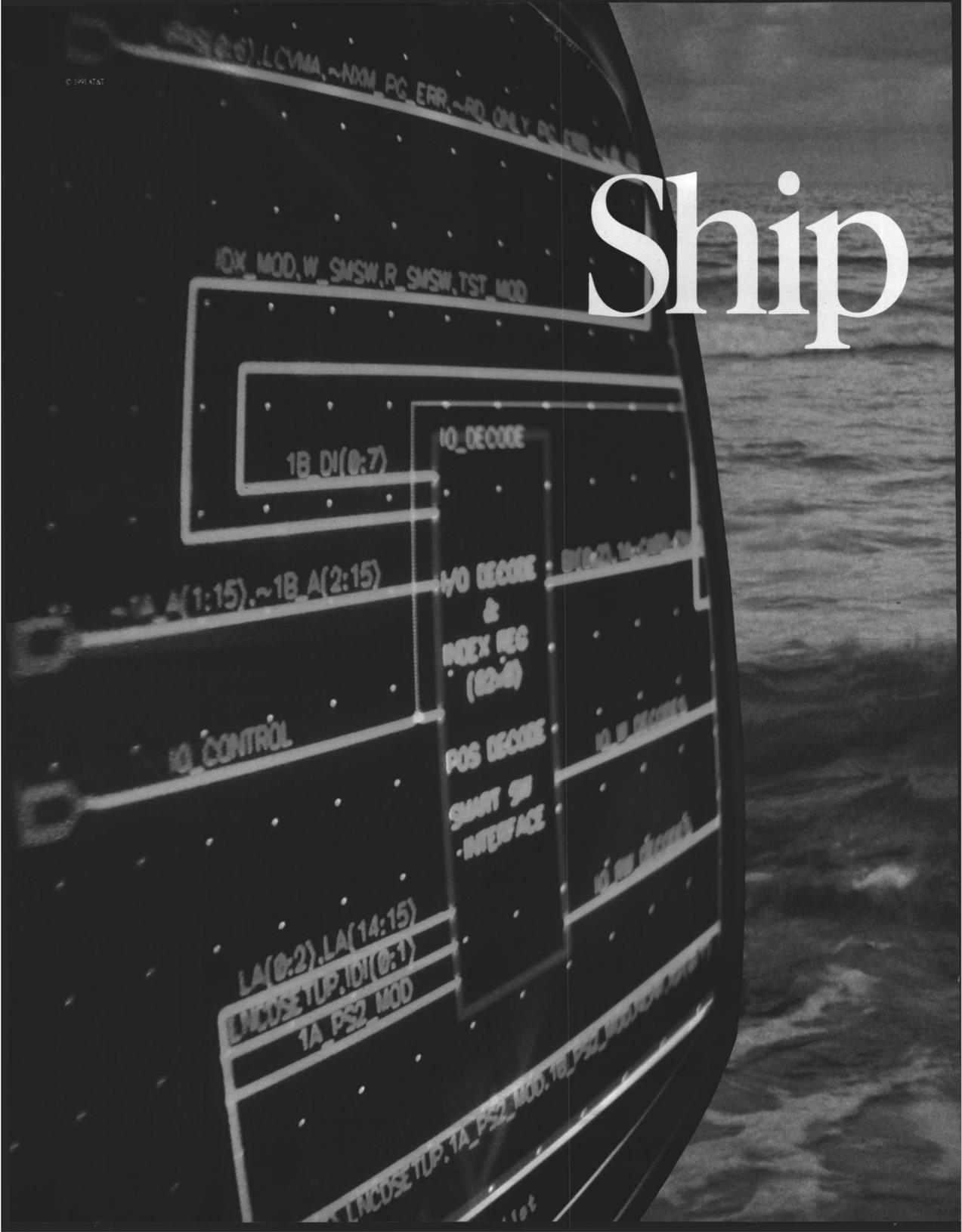
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IMPROVING CURRENT STRATEGIC SEALIFT CAPABILITIES

The National Defense Reserve Fleet is divided into two components.

• One component—the Ready Reserve Fleet (RRF)—includes 96 ships that are routinely maintained so that they could be activated in 5, 10, or 20 days. The Maritime Administration budgets about \$225 million for RRF ships.

• The other component (the non-RRF) consists of 116 ships: 71 Victory-class ships built during World War II and 45 others of varying age and time in reserve status. The non-RRF ships receive far less maintenance than RRF ships and would require much longer activation

Fleet if the ships were sold to the highest foreign or domestic bidders. Legislation pending before Congress that would limit the sale of Reserve Fleet ships (built before 1946) to domestic scrapping companies would lower these revenue estimates.

The Merchant Ship Sales Act of 1946 created a government-owned and administered National Defense Reserve Fleet of inactive but potentially useful merchant ships. In 1976, the Reserve Fleet was separated into two parts: (1) a Ready Reserve Force (RRF) consisting of ships maintained in a more-ready condition to meet more immediate shipping require-

other vessels, or used for purposes not related to transportation. Table 1 shows that as of May 31, 1991, the total number of Reserve Fleet ships was down to 212—96 RRF and 116 non-RRF ships.

The RRF was created in 1976 to improve the overall readiness of the Reserve Fleet. RRF ships are maintained so that they can be activated in 5, 10, or 20 days without the need for dry-docking or more expensive repairs (which would be necessary for the other Reserve Fleet ships). These ships are located at Reserve Fleet sites in James River, Virginia; Beaumont, Texas; Suisun Bay, California; and at various other locations (mainly in the United States).

Improvements in Sealift Capabilities

During the 1980s DOD spent over \$7 billion to improve military sealift capabilities. Key increases in were:

• A 25-ship prepositioned force (costing almost \$4.2 billion) was deployed. This force includes 13 Prepositioning Ships, grouped into three squadrons. Each squadron is capable of equipping and supplying a Brigade of about 16,500 combat Marines. Another 12 ships constitute the Afloat Prepositioning Ships, which carry Army and Air Force equipment and supplies and a Navy field hospital. Supplies from some of these ships were the first to arrive in Saudi Arabia during the Persian Gulf crisis.

• Eight Fast Sealift Ships (about \$827 million) were added. These ships are large, fast, converted container ships modified to a roll-on/roll-off and especially suited to transport equipment such as tanks, large vehicles, and helicopters. They are maintained in a reduced operating status with a allowing activation in 4 days or less.

• Two aviation logistics support ships and two hospital ships were added, and 10 crane ships (about \$717 million) were converted ships can be activated in 5 days. The two hospital ships that were converted from commercial tankers. Each ship is capable of being activated in 5 days. The crane ships, part of the RRF with activation expectations of 5 days, can provide mobile loading and off-loading capabilities for non-self-sustaining container ships.

• The RRF was expanded to 96 ships (about \$1 billion). The increase was accomplished by the direct purchase of ships, the exchange of scrap Reserve Fleet ships for obsolete commercial ships, and the acquisition of ships formerly operated by the Navy.

As a result of the Iraqi invasion of Kuwait, our sealift capabilities were

given a dramatic practical test. According to the Military Sealift Command, as of April 15, 1991, 10 million tons of cargo had been shipped to the Persian Gulf. The ships utilized for this massive operation, as shown in table 2, were chartered from U.S. and foreign-flag commercial operators or activated from our own organic sealift assets.

Although the U.S. deployment to the Persian Gulf was the largest concentrated sealift activity since World War II, the non-RRF portion of the Reserve Fleet was excluded primarily because of (1) the lack of indication that there would be enough time to activate and use them; (2) their relatively small size, slow transit speeds, and long off-loading times compared with RRF and other ships used; and (3) the ready availability of U.S. and foreign-flag commercial ships. Such factors raise questions about when non-RRF ships would ever be needed.

MarAd's most recent sale of two non-RRF ships to a foreign firm, was for \$76 per ton. MarAd estimates that future near-term sales might \$85 per ton.

Therefore, scrapping the non-RRF ships now would (1) save about \$10 million in direct preservation expenses during the next 10 years and (2) generate revenue of about \$38 million to \$42 million, depending on scrap prices.

Given the fact that the non-RRF ships were not used in the Persian Gulf war, the likelihood of the future need for the non-RRF ships is extremely remote.

Type of Ship	RRF	Non-RRF	Total
Dry cargo			
Break-bulk	51	93	144
Auxiliary crane	8	2	10
RO-RO	17	0	17
Barge carrier	4	0	4
Heavy lift	3	2	5
Other	0	4	4
Subtotal	83	101	184
Tankers	11	12	23
Troopships	2	3	5
Total	96	116	212

Table 1
Reserve Fleet Inventory as of May 31, 1991.

times—between 30 and 120 days. The Maritime Administration spends about \$2 million a year to retain these ships.

Because of their physical appearance, the non-RRF ships are often referred to as "rust buckets." The Maritime Administration has developed a plan to gradually scrap them over the next decade. The Department of Defense (DOD) is continuing to study total sealift requirements.

Current U.S. sealift capabilities were strained during the recent Persian Gulf war, but the non-RRF ships were not used during the crisis. The General Accounting Office (GAO) believes these older, less-ready ships are no longer needed.

The General Accounting Office estimates that scrapping the obsolete Reserve Fleet ships could (1) save about \$10 million in direct maintenance costs over the next 10 years and (2) generate an estimated \$38 million to \$42 million to improve the current Ready Reserve

ments and (2) a less-ready component of ships preserved and retained at very little government expense (non-RRF).

The Maritime Administration (MarAd) maintains custody of the Reserve Fleet ships. Over the years, reserve ships have been activated during emergencies, including the conflicts in Korea and Vietnam. For example, 40 percent of the materiel moving to Vietnam in 1967 was transported by ships of the Reserve Fleet. Most recently, 78 of the 96 ships in the RRF were activated to assist in sending and resupplying U.S. troops in Saudi Arabia after Iraq invaded Kuwait. With the exception of two ships that were test-activated in 1985, none of the non-RRF ships has been activated since the Vietnam War.

At one time over 2,000 Reserve Fleet ships were stored at eight different anchorages along the Atlantic, Gulf, and Pacific coasts. Since 1946, a large number of these ships have been sold for scrap, traded for

Type of Ship	Number
Maritime prepositioning	13
Afloat prepositioning	12
Fast sealift	8
Aviation logistics/hospital ships	4
Controlled fleet ships	24
Ready reserve force	74
Newly chartered ships	212
Allied ships on loan	12
Total	359

Table 2
Sealift Assets Used in Persian Gulf War.

Congress should consider directing the Maritime Administrator to scrap non-RRF ships not being held for RRF upgrade and use the sale proceeds to enhance the Ready Reserve Fleet.

Port Of Portland Marks General Cargo Record

August 1991 marked an all-time best for the Port of Portland in general cargo tonnage, breakbulk and container, according to **Mike Thorne**, port executive director.

The 361,353 tons recorded in August surpassed the previous best of 352,782 tons set in April 1989.

Brisk business in almost every category of cargo handled made the new record possible. Container vessel volumes were higher than any previous August on record.

The Port of Portland handles about 10 million tons of breakbulk, container and bulk cargoes annually.

A/S Vesta Incinerators Help Shipowners Meet Waste Regulations

Rules and regulations aimed at diminishing marine pollution through dumping of plastics and garbage are being increasingly enforced by various agencies such as the U.S. Coast Guard.

The MARPOL Annex V regulation, which has been in effect for almost three years, prohibits the dumping of any plastic material in any waters and states that food dumped into the sea must be able to pass through a screen with a mesh size no larger than 25 mm. This means that the waste must either

be held on board throughout the voyage until a port is reached which has a suitable facility for handling waste, or the particle size must be somehow reduced on the vessel to a size which meets this rule.

The only way known for accomplishing this size reduction is by incineration.

Two compact incinerators for shipboard use have been developed by A/S Vesta of Copenhagen, Denmark, the manufacturers of Atlas incinerators. These are distributed in North America by American United Marine Corporation of Saugus (Boston), Mass.

The Vesta Maxi 25S is designed for burning solid waste, and the Vesta Maxi 25SL burns sludge oil and solid waste simultaneously. Either can be built into a 9M3 ISO container, which is delivered pre-wired and pre-piped, including C02 fire extinguishing equipment, and a 300-liter tank for diesel fuel. The Maxi 25SL, the HT-4-100 sludge oil tank system is also included.

Both of these units are ready for fast and direct installation on the deck by means of simple container twist locks welded to the deck. All that remains to be done to complete installation is to hookup to the vessel's electric power, diesel fuel storage, recirculation for the HT-4-100 sludge system, and a flue gas exhaust pipe. All of these utilize the connections already present on the outside of the incinerator unit.

For free literature detailing A/S Vesta's compact incinerators,

Circle 194 on Reader Service Card

AT&T Acquires Unit Of Gretag AG

AT&T has acquired the communications security business of Gretag AG, Regensdorf, Switzerland. The new company, AT&T Gretag Data Systems AG, will be organized as a wholly owned subsidiary of AT&T International, but will be under the operational direction of AT&T Federal Systems headquartered in Greensboro, N.C.

Gretag is a leading Western European provider of secure communications for wide area networks and satellite links such as those operated by AT&T worldwide.

Bird-Johnson Appoints Lapp Gulf Coast Manager, Expands Sales Force

Bird-Johnson Company, Walpole, Mass., has named **Peter Lapp** general manager for its Gulf Coast Operations. He will be responsible for Bird-Johnson's propeller foundry facility located in Pascagoula, Miss., and propeller repair facilities located in Mobile, Ala.

James B. Travis Jr. has been named manager, propeller sales for Bird-Johnson's fixed-pitch propeller product line. He will be based out of their Gulf Coast Operations offices in Pascagoula, Miss., and will provide the technical and sales liaison between the company and its

U.S. and Canadian distributor network as well as for commercial, government and international activity.

John L. Lovasz joined Bird-Johnson Company in the position of manager, marine sales. He will be responsible for all U.S. sales and marketing activities for Bird-Johnson Company products.

Bird-Johnson Company is a wholly owned subsidiary of Axel Johnson Inc., New York, N.Y. They are engaged in the sale and manufacture of a wide range of marine propulsion products, including controllable-pitch propellers, waterjets, and related propulsion system accessories. Axel Johnson Inc. is engaged in five lines of business: environmental products, metals, telecommunications, energy and materials handling, and industrial products. Both are members of the Axel Johnson Group, Stockholm, Sweden.

For further information,
Circle 76 on Reader Service Card

Creasy Electronics To Perform PSA On USNS Victorious

Creasy Electronics, Inc., Chesapeake, Va., will perform a post-shakedown availability (PSA) on the USNS Victorious (T-AGOS-19), the Navy's newest Small Waterplane Area Twin Hull (SWATH) ocean surveillance ship. The contract is worth \$590,444.

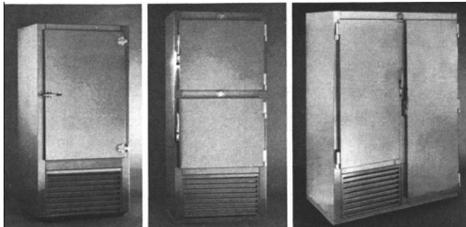
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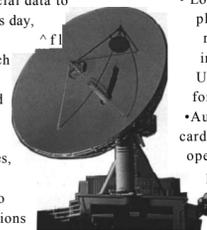


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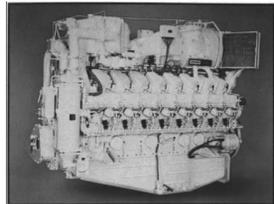
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Circle 221 on Reader Service Card

**Paxman Delivers First
Of Total Of 32 Valenta
Engines To U.S. Navy**



Paxman's Valenta 16RP200CM propulsion engine as installed in the U.S. Navy Patrol Coastal (PC) vessels.

Many of Paxman Diesels most successful marine propulsion applications have been in high-speed patrol craft, two of which are outlined below.

The most recent Paxman patrol boat success is the prestigious contract to supply propulsion engines to the U.S. Navy for its new Patrol Coastal (PC) program. The first set of Valenta 16RP200CM propulsion engines for the PC program has already been successfully delivered to shipbuilders Bollinger Machine Shop and Shipyard Inc., on schedule for completion of the first boat at the end of 1991. These engines are the first of a total of 32 sixteen-cylinder Valentas, comprising eight boat sets, which Paxman is to supply to the U.S. Navy.

An earlier success was the provision of propulsion power for the Royal Navy of Oman's (RNO) high-speed Province Class vessels. Each of these 56-meter vessels is powered by four Valenta 18-cylinder propulsion engines, each rated at 4,550 bhp (3,394 kWb), giving a total installed bhp of 18,200 (13,577 kWb).

For further information on the Paxman engine range,

Circle 46 on Reader Service Card

**EC And 14 Nations Protest
Dredging Restrictions
In 1992 MarAd Budget**

Fourteen foreign governments and the European Community have protested legislation that tightens domestic shipping law restrictions on dredging in American waters.

Protesters say the measure, inserted into the fiscal year 1992 Maritime Administration spending bill by Representative **W.J. Tauzin** of Louisiana, would further exclude foreign company involvement in the U.S. dredging industry.

A joint communique was sent to the State Department on the subject by the governments of Belgium, Britain, Denmark, Finland, France, Germany, Greece, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden and the EC Commis-

November, 1991 66

sion. Mr. **Tauzin's** amendment has also drawn protests from the charterer of the largest U.S. hopper dredge, the Stuyvesant, because of fears that it could ultimately affect the vessel's ability to operate.

The Tauzin amendment extends coastwise dredging restrictions under a 1906 law from three geographical miles to the 200-mile limit known as the U.S. exclusive economic zone.

It also requires owners and charterers of all dredges to be at least 75 percent U.S.-citizen-owned and prohibits the time-charter of U.S.-flag dredges to any company unless at least 75 percent of the company's shareholders are U.S. citizens.

Built nine years ago with government loan guarantees, the Stuyvesant is owned by Bank of America Leasing Co. However, the parent of the charterer, Stuyvesant

Dredging, is a Dutch company, Royal Boskalis Corp.

The MarAd authorization bill, with the Tauzin amendment, is awaiting action on the House floor. A Senate authorization measure for MarAd has not been introduced.

The White House has expressed opposition to the House bill because of other provisions in it, specifically a Buy America provision for used sealift cargo vessels.

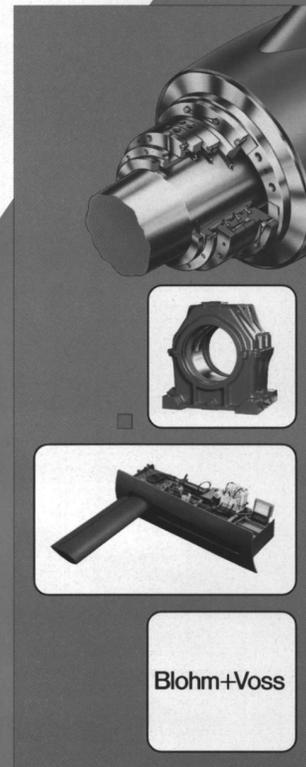
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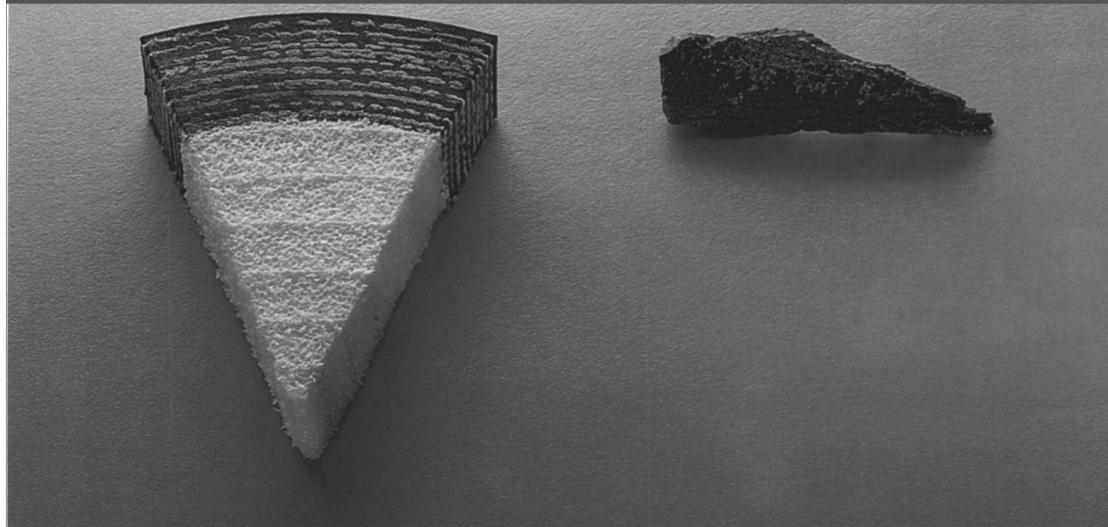
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Which Piece Really Came From A Sea Guard Fender?



The piece on the left is of course from the Sea Guard® fender. The piece on the right was brought to us by an unhappy customer who thought one of our fenders had failed him.

It turned out to be one of our competitor's fenders. We can understand his confusion though, because there are other people making foam-filled fenders that look like ours. The problem is they aren't made like ours.

At Seaward, we make sure our fenders are up to spec. Consistently. Our Urethane skin is unique. It's reinforced with nylon tire cord wrapped in a helical pattern and integrated within the skin itself. © This gives our skin a tear strength up to six times greater than non-reinforced skin.

We run a stringent Quality Assurance Program so you'll know you're getting only the best. Our closed-cell foam is tested in-house

and carefully laid up to ensure the integrity of every fender. © Sound impressive? There's more. The bond between the skin and the foam is stronger than the foam itself. © And our staff chemists have formulated special elastomers and UV inhibitors to protect the

fender and keep it looking good. © We also use our integral galvanized steel swivels on the ends that allow the fender to rotate and reduce stress. ©

The result of all this is the best foam-filled fender made. Anywhere. Our fenders perform under the harshest conditions around the world. From the sizzling heat of South America to icy arctic waters.

We have fenders that have been in use longer than our competitors have been in the business. But that shouldn't be surprising since we pioneered and developed solid foam-filled fenders.

What we're trying to say is that while there are imitations on the market, no one builds fenders like Seaward. Whether it's our Sea Guard®, Sea Cushion® or Sea Float.

So the next time

you're considering fenders, remember the lesson learned by the disgruntled customer mentioned earlier. Cheap imitations can be very expensive.



Through outstanding design, engineering and manufacturing, Seaward International Sea Guard® fenders set the standard for the industry.

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Circle 221 on Reader Service Card

ACL Launches New U.K. Agencies Firm

Atlantic Container Line (ACL) recently commenced operations in Great Britain with a new company, Atlantic Container Line Agencies (UK) Ltd. The new operation, based in Liverpool, with offices also in London and Glasgow, takes over agency responsibility from Cunard Ellerman.

"This is a further important step in ACL's ongoing policy of improving and extending coverage of the U.K.-North American market with our own people," said **Olav K. Rakkenes**, ACL chairman.

In order to ensure continuity of service by staff fully experienced in all aspects of the Atlantic trades, key personnel from the ACL divisions of Cunard Ellerman have joined the new company.

Heading Atlantic Container Line Agencies (UK) as managing director is **Graham Calver**, who for 16 years held senior marketing posts with Cunard Brocklebank before appointed ACL's vice president for the U.K. and the Republic of Ireland.

ACL's liner services consist of: the weekly North Atlantic and Canadian service from Liverpool to Halifax, Nova Scotia, New York, Portsmouth, and Baltimore; the weekly North and South Atlantic and U.S. Gulf Service from Felixstowe to New York, Norfolk, Savannah, Miami, Houston and New Orleans; the weekly U.S. and Canadian West Coast service from Felixstowe to Long Beach, Oakland, Portland, Seattle and Vancouver; a direct weekly service from Felixstowe to Montreal under a slot charter arrangement with Canadian Maritime; and a service every 10 days to Mexico via Harwich-Antwerp feeder.

ACL now provides four sailing opportunities a week between U.K. ports and North America, its most intensive schedule serving the widest range of ports since the line launched U.K. service in 1969.

Gulf-Offshore Wins MarAd Contract To Upgrade RRF Vessel S/S Petersburg

The Maritime Administration has awarded a \$3,276,750 contract to Gulf-Offshore, Inc., Mobile, Ala., to upgrade the cargo-capability of the Ready Reserve Force (RRF) vessel S/S Petersburg. The work involves stripping and coating the cargo tanks with protective paints to prevent damage to cargo the vessel transports.

The Petersburg is an Offshore Petroleum Discharge Ship, a specialized vessel whose military role is to provide fuel to amphibious forces ashore.

The RRF is a select group of cargo ships the Maritime Administration maintains to meet surge sealift needs in the early stages of military contingency operations.

The shipyard work on the Petersburg is expected to be completed in 95 days.

November, 1991

Hempel Relocates USA Headquarters To Houston, Texas

Hempel Coatings (USA), Inc., recently announced that it has completed its restructuring program, inclusive of a relocation of its U.S. headquarters to Houston, Texas.

This will result in easier and bet-

ter communication, improved service, along with a strategy more geared to the Gulf Coast market area.

The offices are located at 6901 Cavalcade, adjacent to the factory. **Per G. Bentsen**, president, **Muhammad Jamil**, vice president/technical and operations, **Valerie Menezes**, logistics/customer service manager, and **David Stearnes**, controller, are now at this location. Also,

sales and technical service functions will continue operating from these facilities.

Joel Benetti, vice president of sales and marketing, will continue to be located at Hempel's other factory in Wallington, N.J.

For free literature on Hempel Coatings,

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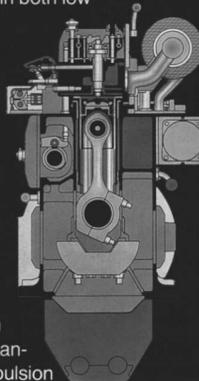
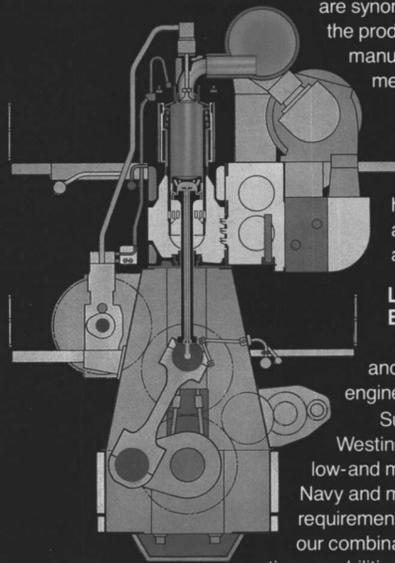
And New Sulzer Diesel's tradition in diesel engines dates back to the production of the first marine diesel engines. Now Westinghouse and New Sulzer Diesel Ltd have joined forces. The most sophisticated and advanced marine diesel engines are now available in the United States.

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Only now, is it possible to obtain both low- and medium-speed marine diesel engines from one American source.

Sulzer diesel engines built by Westinghouse cover the full range of low- and medium-speed models to meet Navy and merchant vessel propulsion requirements. No other supplier can match our combination of experience and integration capabilities. That means we can tailor the propulsion system to the shipbuilder's and operator's requirements.

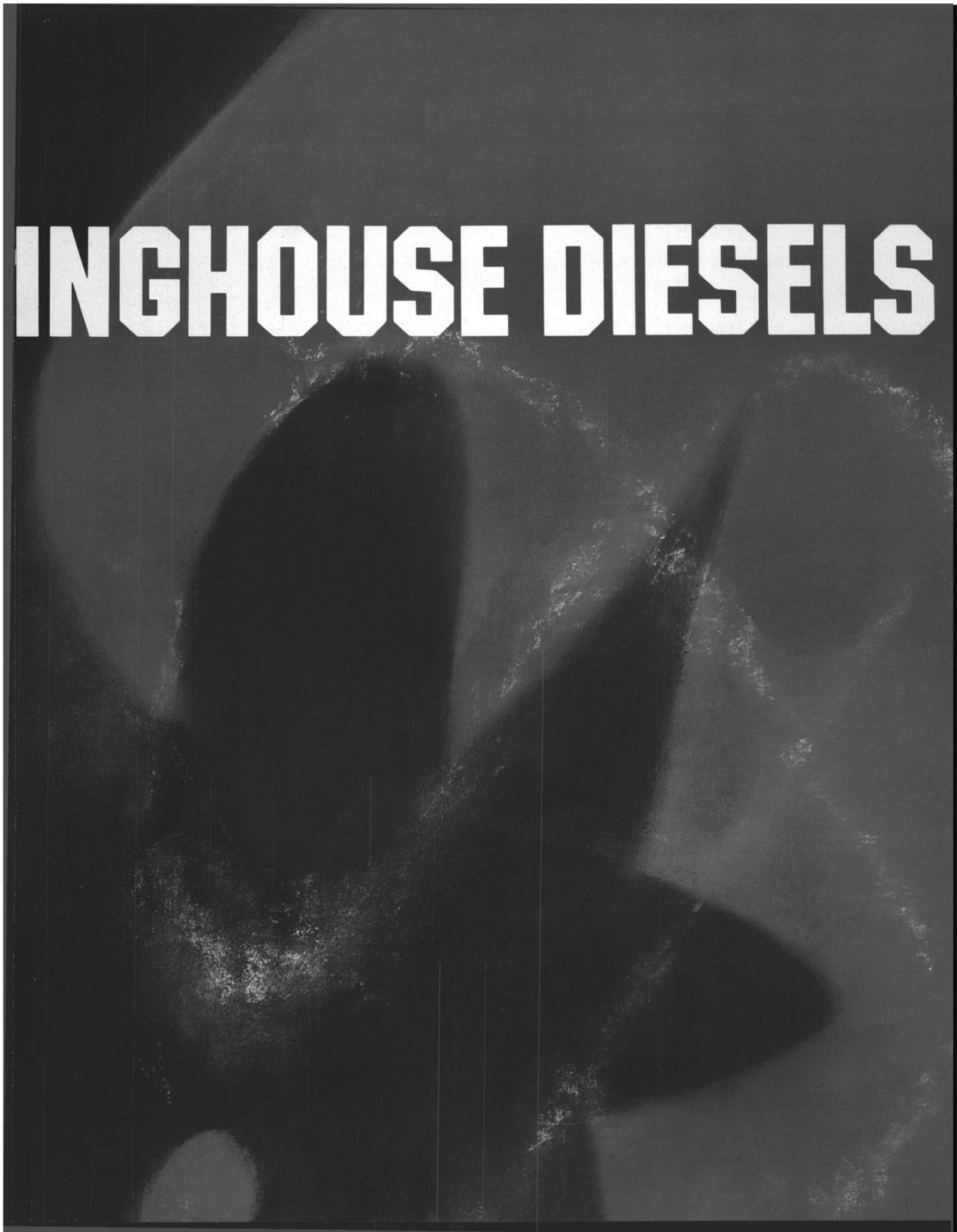
The team of Westinghouse and New Sulzer Diesel Ltd has created a new dimension for American shipbuilders. Simply stated, you cannot make a better choice for marine diesel propulsion systems than Westinghouse.



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Perhaps more important than the dramatic time and cost savings offered with Pylok® is its proven* superior performance compared with MIL-F-1183 fittings. In side-by-side comparative tests, Pylok® endured more punishment, more vigorous testing than its labor-intensive counterpart, including an unprecedented, scorching 2000 degree fire test conducted at a major independent research facility. Pylok® fittings

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And Deutsch has developed new DLT series tools which have reduced tooling size and weight by nearly 65 percent. That means even easier access into tight, confined compartments. Areas a torch would never fit.

Available in 600 to 6000 psi pressure classes, sizes to 2" NPS and in a variety of configurations including sweep tees, elbows, couplings and reducers, and in a variety of materials.

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Any other pipe fabrication system would leave you dead in the water.



*For comparative testing information between Pylok and MIL-F-1183 and a list showing Pylok® in-use, contact your local Deutsch office or 1-800-DEUTSCH.

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Oil Industry Wary About Buying New Leases Off California

Despite the lure of large discoveries, the oil industry is wary about risking its money in proposed new lease sales off California's coast because of fierce opposition ranging from small local groups to the governor.

The oil industry has learned the hard way that local opposition in California can bring long delays and add hundreds of millions of dollars to a project's cost.

Opposition in the state to new lease sales has grown beyond environmental groups, sparked by the Valdez oil spill two years ago.

Sierra Club spokesman **Bob Hattoy** said that retired people, real estate agents, chambers of commerce of local towns, hotel and restaurant owners are all opposing offshore oil drilling.

Environmentalists say new offshore development could mar the area's rugged coastline and rich marine life, and that the government should place greater emphasis on conservation.

Chevron's long fight with the wealthy seaside resort of Santa Barbara, Calif., over the \$2.5 billion Point Arguello oil project has made the industry wary of investing large sums off California. Local officials and groups such as the League of Women Voters stalled the startup of the Point Arguello project, one of

the largest U.S. offshore oil finds ever, for more than three years.

Chevron has estimated the delays cost the project's partners, which include Texaco Inc. and Phillips Petroleum Co., about \$100 million a year.

Point Arguello is now only producing 28,000 barrels of oil a day, about one-third of its capacity, because Santa Barbara has barred Chevron from using oil tankers to carry the project's oil. Chevron has said that local pipelines are inadequate to carry the project's full production.

The Point Arguello project was based on expectations of world oil prices of \$40 for a barrel of light, sweet crude, nearly twice current levels. But the field's heavy oil is now valued at only \$8.50 a barrel because of its high sulfur level, which makes it difficult to refine.

House-Senate Panel Agrees On Funding For MarAd, FMC And NOAA

Agreement has been reached by House and Senate negotiators on funding for several maritime agencies and their programs.

A Senate-House conference committee, working on a \$22.1 billion appropriations measure for the Departments of Commerce, Justice, and State, the Judiciary and related agencies approved spending totals for the Maritime Administration,

Federal Maritime Commission and the National Oceanic and Atmospheric Administration.

MarAd will get some extra money for its reserve fleet maintenance programs, and there is also money to start a long-term NOAA fleet modernization and replacement program.

Conferees compromised on an appropriation of \$17.6 million for the FMC, with an instruction that the agency fill its vacant New Orleans district director position as soon as possible.

They approved nearly \$234 million for MarAd's Ready Reserve Force acquisition and maintenance program, an increase of about \$9 million above the Bush Administration request. The force is a 96-vessel component of the National Defense Reserve Fleet kept in a quick activation status to meet surge supply requirements in a military emergency.

The conference report encourages MarAd to make every effort to acquire U.S.-built, U.S.-rebuilt or U.S.-documented vessels as the expansion of the ready reserve fleet continues.

The report notes that all of the ship types needed may not be available from U.S. sources in the numbers required, and that the acquisition of some foreign-flagged ships could be necessary.

The conferees created a new fleet modernization, shipbuilding and conversion account for a 10- to 15-year program to replace the agency's aging fleet. The account will start

with \$33.2 million in it.

Before obligating any of the money for new vessel construction, the agency is directed to review the option of acquiring any excess Navy, Coast Guard or other vessels. The conferees said money obligated for new construction first must be approved by Congress under its reprogramming procedures.

Murphy Oil Expects To Raise \$400-500 Million Through Sales Of Odeco Rig Fleet

Through the sale of the 36-strong Odeco drilling rig fleet, Murphy Oil is expected to raise \$400-500 million.

Competition is believed to be highest among drilling contractors interested in the two advanced semisubmersibles—Ocean America and Ocean Valiant.

Brokers said International contractors Sedco Forex and Reading & Bates (R&B) could be interested in the fourth generation units.

The units are being sold through New York finance banker **Smith Barney**, which is understood to have begun soliciting offers in the market.

Apart from the two top-line rigs, the fleet consists of 18 semisubmersibles, 14 jackup rigs, one drillship and one submersible.

Several of the units are operated under joint ownership agreements.

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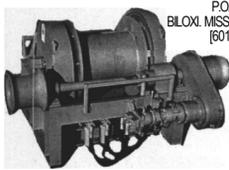
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Maritime Reporter/Engineering News

Wartsila-Powered Multi-Role Research Ship Delivered By Swan Hunter Shipbuilders

Swan Hunter Shipbuilders of Great Britain has delivered the RRS (Royal Research Ship) James Clark Ross to the Natural Environment Research Council (NERC).

The 325-foot-long by 61.8-foot-beam vessel is designed as a multi-role ship, to be capable of operating safely in Polar waters, for the transportation of cargo and personnel from the U.K. and South Atlantic ports to research stations maintained by the British Antarctic Survey (BAS), one of the Council's component institutes, in the Antarctic; to discharge cargo without the assistance of normal port facilities such as quays and cranes; and to carry out a wide variety of marine science programs in the Southern Ocean

and worldwide.

The research complex on the RRS James Clark Ross comprises nearly 400 square meters of wet, dry and environmentally controlled laboratories, workshops, cool and cold rooms, computer and data preparation suite, underway instrumentation and control room and conference/library facilities.

The cargo facilities consist of two holds capable of carrying 1,800 cubic meters of general cargo, bulk aviation fuel tanks for 250 tons of turbine fuel to support the Antarctic air operation and up to 500 tons of cargo diesel fuel for the Antarctic stations.

The propulsion system is diesel electric, based on the "power-house"



The Royal Research Ship James Clark Ross, built by Swan Hunter Shipbuilders, is shown undergoing sea trials on Loch Goll, Scotland.

principle comprising four Wartsila Diesel engines generating up to 8,500 hp at the shaft. This system provides the necessary power to permit the ship to break level ice up to 800 mm thick at a constant speed of 2 knots. White Gill bow and stern thrusters and a "joystick" control system will allow good station keeping capability for overside operations.

The RRS James Clark Ross will provide a first-class platform for marine science into the 21st century and enable the British Antarctic Survey to maintain the essential high level of support to its Antarctic stations.

For free literature detailing the facilities and capabilities of Swan Hunter Shipbuilders Ltd.,

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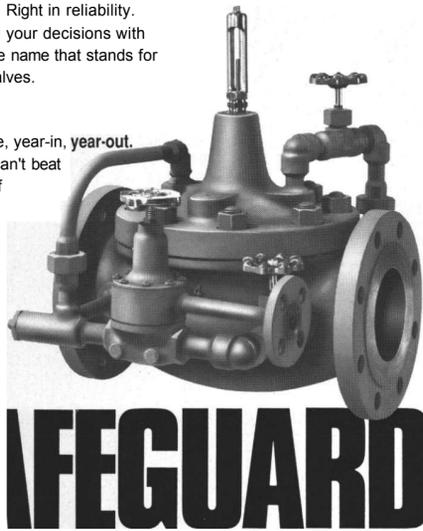
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Effort To Scrap Mothballed Defense Ships Advanced By Compromise Plan

Representative **William Broomfield** of Michigan, a long-time advocate of immediate scrapping of the oldest and most decrepit hulks in the National Defense Reserve Fleet, recently introduced compromise legislation that requires the Maritime Administration to devise an accelerated, five-year scrapping plan for over 100 vessels.

Deputy Maritime Administrator **Robert E. Martinez** said the scrapping proposal provides the Departments of Transportation and Defense with the flexibility to retain those ships deemed militarily useful or needed for use by a state for federal governmental agency. He added that a five-year scrapping plan allows us to avoid market saturation and to take advantage of favorable market conditions.

A five-year disposal plan is already being developed by MarAd, Mr. Martinez noted.

The ghost fleet, built to be deployed in World War II, now does nothing but soak up rust and taxpayer dollars. Representative **Broomfield** said. He added that it is time to send it to its final resting place.

Another feature of the compromise permits the vessels to be sold for scrap to the highest foreign or domestic bidders. Representative

Broomfield's original proposal had stipulated that only U.S. scrapping companies could bid on the vessels.

Thomson-CSF Canada To Equip 12 MCDVs For Canadian Navy

Thomson-CSF's Canadian subsidiary, Thomson-CSF Systems Canada, Inc., has been selected by the Canadian Government as part of the Fenco Engineers team to provide 12 maritime coastal defense vessels (MCDV) to the Canadian Navy.

The MCDV program involves the design and construction of 12 coastal defense vessels, including integration of onboard electronic systems.

Thomson-CSF Systems Canada's share of the contract is worth more than 200 million French francs. The company will act as prime contractor for transmission systems, sensors, optronic equipment and the complete navigation system.

The MCDV contract is the largest ever awarded to Thomson-CSF's Canadian subsidiary since it was set up in 1984.

Thomson-CSF, headquartered in Paris, France, is the largest defense electronic manufacturer in Europe and the second largest in the world.



FAIRWEATHER FOR SAILING—Zidell Marine Corporation recently launched the Fairweather, a 1,600-ton deck cargo barge. The 302-by-76-by-20-foot Fairweather is the largest barge ever constructed at Zidell's Portland, Ore., facility. She will be operated by Samson Tug & Barge of Sitka, Alaska. Photo: Hugh Ackroyd

Jotun A/S, NOF Establish Joint Sales, Service, Marketing Venture In Japan

A joint sales, service and marketing venture—NOF Jotun Company Ltd.—has been established between Jotun A/S, the Norwegian parent company of the international Jotun group, and Nippon Oil and Fats Ltd. (NOF) of Japan. Jotun is one of the world's three leading manufac-

turers of marine coatings, and NOF already has a major share of that market in Japan.

In the new joint venture, JPC and NOF technologies will be primarily utilized for the newbuilding and maintenance markets, respectively, and the product ranges of the two companies will be rationalized and harmonized to meet Japanese customer requirements.

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OPA 90 Could Scare Carriers Into Discontinuing Service To U.S.

According to officials with the U.K. Chamber of Shipping, the punishing liability component of the U.S. Oil Pollution Act of 1990 could lead some British carriers to discontinue service to the U.S.

In the event of a serious oil spill, the U.S. pollution act, passed in the

wake of the Valdez disaster, increased liability eightfold to a minimum of \$10 million. The act, moreover, allowed coastal states to keep intact their local laws exposing maritime companies to unlimited liability for damages caused by spills.

Also stated in the act is that carriers must obtain certification of financial responsibility from protection and indemnity clubs before they can call at American ports.

The U.K. chamber's director of shipping policy, **Mark Brownrigg**,

said the immense risks associated with exposure to unlimited liability had made it difficult to obtain such certification and could eventually scare carriers away from serving the U.S. "Only the very largest companies can afford the costs associated with unlimited liability," he said. Since the act was first debated seriously, such threats have been made by such European carriers as Royal Dutch Shell Ltd., which has a huge fleet of tankers, and Maersk Line.

Other companies, however, have made it clear that the U.S. market is so lucrative that they will continue to serve the trade even though exposure to unlimited liability could be disastrous for the line.

is backed by the Bush Administration, although it is expected to oppose the two bills, which mandate retaliation if drift-net fishing continues.

Senator **Bob Packwood** of Oregon sponsored one of the bills, which was passed unanimously by the Senate earlier this year, and Representative **Gerry Studds** of Massachusetts introduced the other bill recently in the House.

However, it was made clear by Mr. **Macnow** that Japan's drift-net fleet of about 360 boats did not intend to stop drift-net fishing by July, but would try to develop conservation measures to satisfy strict U.N. guidelines as an alternative to the ban.

Japan Lobbies To Defeat Bills Calling For End To Drift-Net Fishing

In the face of overwhelming international opposition and new Congressional action to force a ban on drift-net fishing in 1992, Japan's fishing industry began an uphill battle recently to preserve drift-net fishing on the high seas.

A spokesman for the Japanese Fisheries Association, **Alan Macnow**, blamed environmental extremists for distorting the actual impact of drift nets, which can be 40 miles in length and which have been banned by most countries for indiscriminately killing fish, mammals and birds.

Two bills before Congress would force the U.S. to impose broad trade sanctions against countries that do not abide by the United Nations deadline calling for an end to deepsea drift-net fishing by July 1 of next year. President **Bush**, under existing law, has the option of imposing narrower sanctions on that country's exports of fish and other sea products.

According to **Mr. Macnow**, an international scientific study released in June shows that drift-net fishing is not threatening dolphins in the North Pacific and is no more wasteful than other fishing methods. To defeat the two bills, he said the fisheries association, which is partly funded by the Japanese Government, would use these results to lobby Congress and the Bush Administration.

The new study found, **Mr. Macnow** said, that 28 percent of the catch hauled in by Japan's drift-net fishing of squid and tuna was by-catch, other species that die in the nets and are dumped back in the ocean. This compares with 35 percent for conventional trawling and better than 90 percent for shrimp fishing in the Gulf of Mexico, he said.

But a Bush Administration official said the fisheries association was distorting the results of the international study, and that the report reinforced the conclusion that drift-net fishing was wasteful and harmed mammals and other sea life. The U.N. ban on drift-net fishing

Barge Service Start-Up Gives Shot In Arm To Red Hook Terminal

A major shot in the arm was provided recently to Brooklyn's last container terminal as a container barge service started up, connecting the Brooklyn facility with New Jersey.

Service between the Port Authority of New York & New Jersey's Red Hook Container Terminal and the bistate port's main container complex in Newark and Elizabeth, N.J., is on an as-needed basis right now, but regular daily service is expected to begin very soon.

Universal Maritime Service Corp. will be the operator. Universal also operates the Red Hook terminal.

Since a highway construction project impeded access to the Red Hook terminal and its largest customer, Jugolinija, gave official notice that it would leave, concern about the ability of Red Hook to survive has been heightened in recent months.

For now, Jugolinija has decided to stay at the terminal, and officials have said a barge service could be one factor influencing a decision to stay at Red Hook.

The city's Urban Development Corp. is funding part of the cost of the barge service.

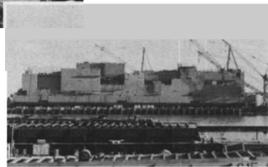
For now, the barges will be loaded and unloaded with cranes, but an upgrade to roll-on/roll-off operation is hoped for in the future.

Problems finding funding had delayed the service, which had long been in the works.

Frigate To Undergo Restricted Availability At A & E Industries

A & E Industries, Inc., National City, San Diego, Calif., has received a \$159,070 contract for a restricted availability on the frigate USS Cook (FF-1083). The Supervisor of Shipbuilding, Conversion and Repair, San Diego, Calif., awarded the contract.

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French Develop VLCC Design With Intermediate Deck

A double-hull crude carrier design incorporating an intermediate deck has been developed by the French participant in the pan-European E-3 tanker program.

The very large crude carrier (VLCC) proposed by Chantiers de l'Atlantique offers 6-meter (about 19.6 feet) spacing between inner and outer shells. This is more than twice the minimum stipulated in the 1990 Oil Pollution Act requirements for double skinned tankers trading to the U.S.

The 6-meter double bottom created by the intermediate deck will act as a void when operating to the U.S. But it has also been designed to enable oil to be carried when trading to those parts of the world not subject to double-bottom legislation.

The extra width and depth of the double hull spacing, the French yard believes, affords a much greater measure of protection for the cargo section in the event of high-energy collisions and groundings.

The design applies the principle of hydrostatic balance as a means of minimizing or obviating oil outflow if the cargo tanks are breached. When used for cargo-carrying purposes, the double bottom tanks will not be fully loaded, so as to maintain an air gap above the cargo.

In the event of the bottom being holed, oil loss should be minimized because of the relatively low head of oil ensured by the low, intermediate deck. The air gap will ensure that seawater forced into the tanks by the difference in hydrostatic pressure, will act as a seal at the bottom of the ship, reducing or preventing cargo losses.

There will also be provision for transferring cargo to the main tanks or side shell spaces in an emergency situation.

Global Maritime Distress, Safety System Set For Implementation Next Year

The Global Maritime Distress and Safety System (GMDSS) is scheduled to be implemented on February 1, 1992. The basis of the system is that rescue authorities ashore, as well as shipping in the immediate vicinity of any ship in distress, be informed of the distress incident and be able to assist in a coordinated rescue operation.

Operationally, the oceans of the world have been divided into four areas based on the coverage of maritime communications satellites. Depending upon which of the four areas a vessel operates, and based on the miles from shore, compliance for existing as well as new vessels

will require the installation of various equipment. This includes radiotelephones, survival-craft radar transponders and satellite-compatible emergency position-indicating radio beacons (EPIRBs).

The system will be coordinated by a designated rescue coordination center (RCC) which will be informed of any alert, either through the INMARSAT or the COSPAS-SARSAT maritime communication satellite systems, or from coastal radio stations.

Owners of existing cargo ships of 300 gross tons or more have until February 1, 1999 to comply with all applicable requirements of this safety system, and every ship constructed on or after February 1, 1995 must comply with all applicable requirements.

For further information, call **Ralph Pardo** of ABS Regulatory Affairs at (201) 712-5289.

Yard Anti-Subsidy Bill Advanced By House Panel

Bills to combat foreign shipbuilding subsidies and to impose access fees on users of the Federal Maritime Commission's computerized shipping rate-filing system were approved recently by the House's

tax-writing committee.

Action on the foreign shipbuilding subsidy bill is intended to send a message to negotiators at the Organization for Economic Cooperation and Development, who have been trying for over two years to draft a bill phasing out shipyard subsidies.

Vessel operators are required by the bill to certify that construction subsidies either were not paid or paid back before their ships are allowed to enter U.S. ports.

Approval of a fee to gain access to FMC tariff information was included in legislation to repeal Coast Guard decal fees on recreational boaters.

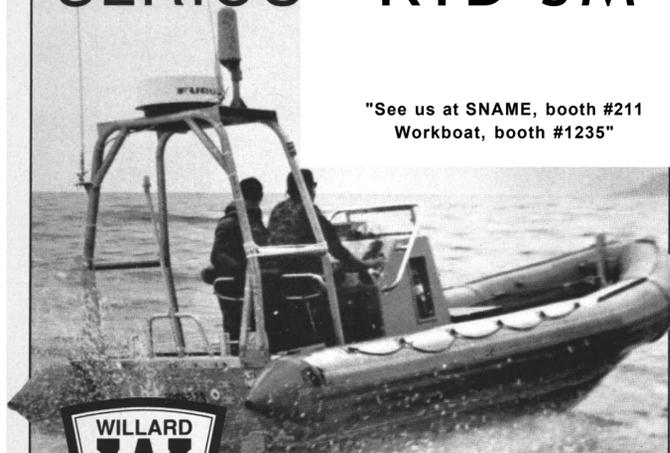
Earlier this year, a fee of 35 cents a minute on both primary and secondary users of the automated system, which goes into operation next year, was proposed by the House Merchant Marine and Fisheries Committee as an alternative revenue source to offset the Coast Guard decal fee.

Braswell To Perform Restricted Availability On MSC Cargo Ship

The Braswell Service Group, Inc., Charleston, S.C., will perform a restricted availability (RAV) on the Military Sealift Command (MSC) cargo ship USNS Marshfield (T-AK-282) under a \$370,161 contract.

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Maryland Yard Wins Major Steel Tunnel Fabrication Job

Bethlehem Steel Corporation's Maryland yard, Bethship-Sparrows Point, has signed a letter of intent with Morrison Knudsen to build the tunnel sections for the new third-tunnel to be installed under Boston Harbor. The job will require 35 million pounds of steel.

The subcontract, valued at over \$60 million, was solicited from a large number of both steel fabrication companies and shipyards. However, the competitors in the final round of negotiations were all shipyards, since they proved to be the

most competitive producers. This provides a real-world contradiction of a recent public pronouncement of Crowley Marine company that shipyards are not cost-effective compared to steel fabrication firms.

The Maryland yard built the tunnel sections for the Chesapeake Bay tunnel during the mid-1980s as a subcontractor to Morrison Knudsen. The Boston tunnel section project will employ several hundred Bethship-Sparrows Point workers during most of 1992. The combination of steel fabrication, plus the outfit-intensive work involved in the shipyard's ongoing ship repair and overhaul business next year, will provide a substantial and balanced work force unit.

MacGregor-Navire, Transmarine Awarded Stateside Business

The City of New York Department of Transportation has contracted marine contractors Weeks Marine Inc. to construct a ferry maintenance facility at Staten Island.

MacGregor-Navire (USA) has been awarded the contract for detail design and supply of three transfer bridges, enabling service vehicles to access the Staten Island ferries.

MacGregor-Navire will utilize the services of its sister company, Transmarine Consultants (UK), who will develop the detail design. Each ramp measures 26 feet 6 inches long

by 12 feet wide and consists of two sections, plus finger flaps. The articulation of the outer section is achieved by hydraulic buttressing cylinders which adjust the angular changes between sections throughout the full tidal range of 8 feet 6 inches. Actuation of the main ramp is by two hydraulic screw jacks supported from an overhead gantry structure mounted on the quay.

One of the major factors contributing to the securing of this order was the ability of the MacGregor-Navire organization to provide a total package to the clients covering not only all the necessary detail design through Transmarine Consultants, but also the turnkey management of fabrication and supply through MacGregor-Navire's office in the U.S.

Crewless Cargo Ships Looked Upon By Owners As Wave Of Future

Shipowners, trying to save money by reducing crew numbers, are hoping the crewless cargo ship will be the wave of the future, while scientists are dreaming of the ultimate cost-saving—a ship fully controlled by computer.

Within a few years, flotillas of unmanned cargo ships escorted by one crewed mother vessel could be sailing the high seas.

Already, Japanese technologists have carried out successful testing of an unmanned vessel. The Shiya Merchant, a 10,000-dwt ore carrier, recently completed two days of trials in the perilous 20-mile-wide strait between southwestern Japan and South Korea. The vessel navi-

gated perfectly through the shallow rock-strewn channels during a voyage planned and executed completely by the onboard computers.

Computer-controlled uncrewed ships are absolutely essential for the economic future of long-haul bulk shipping, Japanese marine technologists believe. Several Japanese shipyards have designs for trans-Pacific unmanned container ships and tankers that could be in operation by the mid-1990s. Unmanned ships probably would sail in flotillas accompanied by one ship carrying a maintenance crew to carry out emergency mid-ocean repairs.

As ship operators seek to cut overhead, reduced crew numbers is one of the principal aims of ship designers. Therefore, a British naval architect said, the concept of an unmanned ship should not be dismissed out-of-hand.

Raytheon's R70 Series Radars Provide High Level Of Performance

Raytheon's R70 Series radars are ideal for commercial fishing, workboats and yachts. Displays are presented in 16 levels of video on 12-inch CRT screens. Maximum ranges are 48 and 72 miles, depending on the model. Raytheon offers a selection of X-Band or S-Band, 4-kw or 10-kw transceivers, to suit individual requirements. Raytheon's S-Band R74 is especially well-suited for use in hostile weather situations and for the detection of birds in many fishing applications.

These medium-sized, professional radars are designed with heavy-duty construction throughout, including a die-cast aluminum front bezel and grip handles. To make operation easy, rotary knobs are combined with a simple keyboard, including four directional keys for rapid cursor control.

Raytheon has developed a unique capability for its SeaGuard zone intrusion alarm. The alarm warns of targets entering or leaving preset boundaries. This added feature is particularly useful in pair trawling to alert fishermen if one vessel is moving out of line; to monitor tow operations; for anchor watch; or for marking surveillance boundaries.

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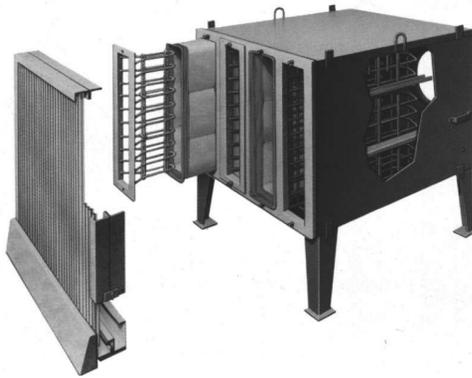
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Trimble Navigation Selects Tru-Chart Electronic Charts On CD-ROM

Since January of this year, Maptech, Inc. has supplied nautical chart CD-ROM discs for the popular NavGraphic II GPS/LORAN Electronic Charting System. The NavGraphic II is manufactured by Trimble Navigation, Ltd. of Sunny-

vale, Calif.

The NavGraphic II is a fully self-contained Loran-C/GPS navigation system which incorporates a high-resolution, flat panel screen. Waypoints, vessel track and other graphic data including the vessel's current position, heading and speed are displayed by the NavGraphic II against a backdrop of Maptech's high-quality Tru-Chart electronic charts.

Tru-Chart electronic charts are

accurately calibrated, full-color, full-detail replicas of actual NOAA, DMA and other government navigation charts. The most recently released government charts are optically scanned by Maptech's Ventura, Calif., scanning department and mastered onto CD-ROM optical storage discs (similar to audio compact discs).

The name Tru-Chart was chosen for these unique full-color electronic charts because, according to Maptech's technical sales adminis-

trator **Henry Nicolle**: "... they are true and faithful representations of the actual paper chart. Every detail of the chart is preserved and displayed. That includes every depth contour, every depth sounding, buoy, wreck, coastal and land contour feature—essentially everything that's printed on the paper chart."

The Maptech scanning department uses the most current state-of-the-art precision scanning and recording equipment to generate the new CD-ROM chart discs in demand by the marine industry.

Each Tru-Chart CD-ROM disc contains the equivalent of at least 30 paper charts and includes all insets (such as harbors, rivers and islands). The scales of these charts exactly match those of the equivalent paper charts.

The most important feature is the completeness of the Tru-Chart electronic chart database. Virtually every paper chart of a given geographical area is included on each CD-ROM disc.

Each CD-ROM chart disc will be periodically updated.

Maptech, Inc. publishes a catalog that lists all of the charts and insets on each of its Tru-Chart CD-ROM discs. This chart catalog is available at no cost.

For further information, Circle 66 on Reader Service Card

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Harden Marine Adds Marine Appraisal Service

Harden Marine Associates, Inc., Tampa, Fla., recently announced the addition of Accredited Marine Appraisal Service to its regular line of services offered. **Charles A. Harden** has been accredited senior member, marine survey, commercial by the American Society of Appraisers and is available to furnish certified appraisals on all types of commercial, fishing and pleasure vessels, including dredges, cranes and floating drydocks.

Mr. **Harden** has been directly involved in commercial and government shipbuilding, repair, conversion and surveying/consulting for 44 years.

Harden Marine Associates maintains offices in Tampa, Fla. For further information, call: (813) 248-1015; or fax: (813) 248-1588.

Evans Named President, COMSAT Labs

COMSAT Corp., Washington, D.C., recently announced that Dr. **John V. Evans** has been named president, COMSAT Laboratories. Dr. **Evans** has been vice president and director of COMSAT Laboratories since October 1983. He came to the Communications Satellite Corporation in April 1983 from the Massachusetts Institute of Technology (MIT) where he was director of the Haystack Observatory and a professor in the Department of Meteorology. Previously, he had been assistant director of MIT's Lincoln Laboratory.

Corrosion Control Seminar To Be Held Next Month

The LaQue Center for Corrosion Technology, Inc., located in Wrightsville Beach, N.C., will present a two-day training course on the "Fundamentals of Corrosion and Its Control" on December 3-4, 1991 at the Blockade Runner Hotel in Wrightsville Beach.

Instruction will be provided on the basic metallurgy of materials and the relationship to corrosion susceptibility, different corrosive environments, forms of corrosion, methods of corrosion control and their economics.

The LaQue Center for Corrosion Technology is a contract testing and consulting organization experienced in solving corrosion problems. They have conducted projects for numerous industrial organizations and government agencies. The LaQue Center maintains facilities for aqueous corrosion evaluations at Wrightsville Beach and for atmospheric exposure at Kure Beach, N.C.

For information on the upcoming corrosion training course, contact: **Sheree Durden** at the LaQue Center for Corrosion Technology, P.O. Box 656, Wrightsville, N.C. 28480; telephone: (919) 256-2271; or fax: (919) 256-9816.

Goldstein Nominated To INTELSAT Post

COMSAT Corporation recently announced that **Irving Goldstein**, company chairman and chief executive officer, has been asked by the Department of State to be the U.S. candidate to become the next Director General of the International Telecommunications Satellite Organization (INTELSAT), and that he has accepted the candidacy.

Mr. Goldstein has been with COMSAT since 1966 and was elected chairman and chief executive officer in October 1985.

New Double Hull Retrofit Design From Stuart Marine

Stuart Marine International, Inc., a Houston-based consulting firm, has developed what it calls a "revolutionary method" to retrofit a double hull to an existing single hull tanker to meet the double hull requirements in the Oil Pollution Act of 1990.

The company, which engages in design, engineering, project management, construction supervision, marine services and inspection of oceangoing vessels, calls the new retrofitted double hull DHX, for double hull, external. Stuart Marine International, Inc., says the method complies with USCG NVIC 2-90, which is the Coast Guard's interpretation of the OPA 90.

According to the company, the

concept is accepted and can be classed by the regulatory bodies. Several barge and tanker operators are currently interested in this method.

DHX covers the application of an external structure to existing cargo vessels in a simple and economic manner, to provide a double hull/double bottom configuration as recommended by Marpol 73/78, OPA 90.

Some of the advantages of the externally applied DHX enumerated

by the company, include: It will provide the required segregated ballast tank draft; the physical depth and width of the vessel will be increased; cost effective installation; no loss of cargo volume; installation in drydock; it has an energy absorbing "honeycomb" structure which is designed to collapse under impact to prevent the penetration of the inner hull; inspectable by class; no piping or pumping systems required; no void spaces below the waterline, which prevents explosive build up of

gases between hulls; and the inert gas system is only required for the upper hull.

The DHX design is currently under a patent application and is protected under patent pending. Stuart Marine International, Inc., hopes to license the concept to shipyards and market it to shipowners and operators.

For a free brochure detailing the new DHX concept from Stuart Marine International,

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SCI Granted Permission To Operate British-Built Ship In U.S. Coast Trade

The Maritime Administration has granted Sulphur Carriers, Inc. (SCI) temporary written permission to operate the British-built MTV Nordic Louisiana in the coastwise trade of the U.S. SCI is a U.S. corporate affiliate of Waterman Steamship Corp.

The approval was given under section 805(a) of the Merchant Marine Act of 1936, as amended, which prohibits subsidized operators and their affiliates from participating in domestic shipping activities without written permission from the Maritime Administration.

The action permits SCI to operate the vessel for and on behalf of Freeport McMoran Resource Partners, a principal phosphate fertilizer producer, as authorized by Public Law 102-100. The permission is for four years, or until a replacement vessel enters service, whichever is sooner.

Alexander Industries Now Exclusive Representative For Welin Lambie Products

The president of Alexander Industries, Inc., New Orleans, La., **Arthur Seven**, recently announced his firm's affiliation with Welin Lambie Limited of West Midlands, England. Alexander Industries and Welin Lambie have participated in joint ventures in the past. This is, however, the first time that Alexander Industries will be the exclusive U.S. representative for Welin Lambie's full line.

Products offered by Welin Lambie include offshore cranes and davits; stores cranes and davits; pivot gravity davits; overhead gravity trackway davits; single arm davits; accommodation ladders and pontoon handling system; winches and capstans; dredge pipes and handling systems; totally enclosed and partially enclosed lifeboats; mob/rescue craft; freefall lifeboats; and camlock pipe couplings.

Shipboard coordination of the Welin Lambie line will be by **Charles Morris**, who recently joined the staff of Alexander Industries. Mr. **Morris** gained considerable experience with Welin davit installations during a 30-year career in the engineering department at Avondale Shipyards.

For more information and free literature,

Circle 11 on Reader Service Card

Scale Reproductions Installs Auto CAD System To Design Ship Models

Scale Reproductions, Fairhope, Ala., recently installed an Auto CAD system for designing. The computer, which will be used in production of

scale models, will be able to use the computer files of the shipyards and designers. Blue prints can also be traced with a large digitizing table. The models will be completely designed as to how they will be built by the computer. This system is the same used by most major shipyards today.

Cut patterns produced by the Auto CAD system are taken to a computer-controlled laser cutter. This laser cutter works on the same prin-

ciple as computer-controlled torches in major shipyards, the only difference being the beam delivery on the cutting head is just five one-thousandths of an inch. The composite material used in the model is then cut with the laser and the parts assembled in the Scale Reproductions shop.

The parts ready for assembly are accurate to within three one-thousandths of an inch. This speeds up the construction time and gives a much

better quality model.

Currently, the cruise ship Nordic Empress is being designed totally with the computer. The model will be 53 inches in length.

Scale Reproductions will be located at Booth #1500 at the International Work Boat Show in New Orleans, December 5-7, 1991.

For further information and free literature from Scale Reproductions,

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For quiet, vibration-free operation and improved service life in passenger, commercial and naval vessels.

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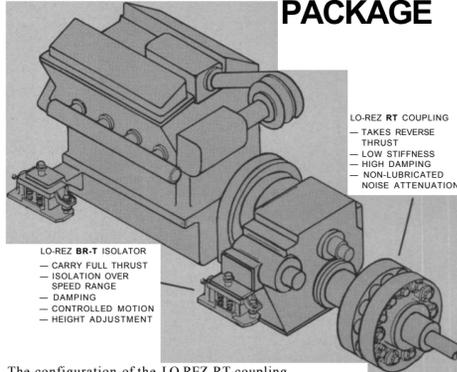
Shown are six 38RT/HLF flexible coupling assemblies as used on naval propulsion systems.

The 38RT couplings, which utilize elastomer cylinders pre-loaded in compression, have three dimensional lateral and torsional flexibility. They provide a high degree of noise attenuation, there being no metal-to-metal contact.

The HLF multiple-lamination coupling components have high Lateral Flexibility and allow the ship propulsion systems to accommodate very high lateral (and associated) excursions. The particular assemblies shown here have been qualified for accelerations in excess of 35.0 G.



THE LO-REZ 'SOFT MOUNT' PACKAGE



LO-REZ RT COUPLING
 — TAKES REVERSE THRUST
 — LOW STIFFNESS
 — HIGH DAMPING
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 NOISE ATTENUATION

LO-REZ BR-T ISOLATOR
 — CARRY FULL THRUST
 — ISOLATION OVER SPEED RANGE
 — DAMPING
 — CONTROLLED MOTION
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The configuration of the LO-REZ RT coupling provides many important characteristics such as two directional thrust and torque capability, shock absorption, **excellent noise attenuation**, high misalignment capability, etc.

The LO-REZ BR-T isolators have special thrust carrying devices which permit them to carry full thrust load without 'locking up' so that they are capable of **providing effective isolation of the engine-generated vibration over the entire speed range.**

With the installation of the LO-REZ *soft mount* package there is no requirement for a thrust bearing in the low-speed shafting so that the full thrust is transmitted through the RT coupling into the gearbox thrust bearing, and out to the gearbox/engine or raft brackets, to the LO-REZ isolators.

Our goal and commitment is to provide the highest possible quality of vibration control products and services to the Marine Industry.

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Frank Paig, Owner, Paig Shipyard, Inc.

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John Anderson, Owner, 30,000 Island Cruise Lines, Inc.

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Malcolm Wall, P.Eng., TSRV Project Manager, National Defence Hdqrs., Ottawa

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Capt. John B. Buwen, Master, MAI Odyssey

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Naval Architect To Address Marine Transit Association In Lisbon, Portugal

Ken Fox, a senior naval architect with Art Anderson Associates is in Lisbon, Portugal to address the International Marine Transit Association on wake generation of high-speed passenger craft. He will describe the vessel wake problems encountered in the Puget Sound and the methodology developed for measurement of their effects.

Mr. Fox recently completed a study for temporary ferry service across a river in Virginia and is near completion of the marine component of a study to San Francisco Bay transit needs and opportunities.

Heading an Art Anderson Associates design group developing a high-speed, low-wake and environmentally kind passenger craft, Mr. Fox is a local expert in a growing worldwide need for marine transit development.

OPI Signs Letter Of Intent For Project In West Africa

Offshore Pipelines, Inc. (OPI) recently announced that its international operating subsidiary has signed a letter of intent with Chevron Nigeria Ltd. to provide marine construction services for the Opuekeba Flow Station project in West Africa. OPI will provide design, procurement, fabrication, transportation, installation, hookup and commissioning of three platforms with interconnecting bridges to be installed offshore Escravos, Nigeria. Completion of the project is scheduled for May 1993.

OPI operates one of the largest marine construction fleets in the world, capable of providing a full range of services to the worldwide oil and gas industry. The company is an industry leader in the fabrication and installation of offshore platforms, the laying of marine pipelines, and the salvage, refurbishment and installation of recycled offshore structures.

For more information,

Circle 35 on Reader Service Card

Maritime Services Moves To Expanded Facilities

Maritime Services Corporation (MSC) has moved to expanded facilities according to **George Selfridge**, CEO. The new facilities will more than triple office, warehouse and manufacturing space. Located on 3.5 acres of light industrial land in Hood River, Ore., the corporation will have land for expansion as necessary.

Company president **Charles Capovilla** indicated the additional space is essential due to the increase in manufacturing and resale por-

tions of MSC's ship interiors business.

Maritime Services Corporation manufactures wood and lightweight nonflammable composite furnishings for a wide variety of vessels including cruise ships, large fishing vessels, tankers and ferries. In addition, Maritime Services is the U.S. distributor for numerous product lines, including Cape Marine Hardcore Joiner System, Hydro Aluminum's Danacoustic Ceilings,

Norac's Soft Core Aker Panel Joiner System, Insulation Equipment's Aluminum and Melamine Panels, Window Boxes and related goods, Fibro Joiner Systems as well as A, B, and C-class joiner doors from several sources, Norac and Cape Marine floating floors, and European style toilet modules.

Limited quantities of most product lines are warehoused by MSC and available for immediate delivery.

Maritime Services Corp. is a full-service joiner company which provides material and installation labor packages for projects throughout North and Central America as well as abroad. The company is capable of providing nearly every aspect of an interior from design and concept work through final installation of detail and finish items.

For further information,

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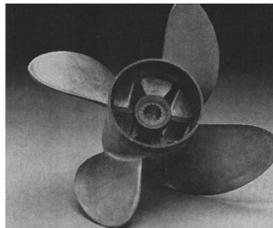
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CMP's First Four-Blade Composite Propeller Improves Boat Performance



The new Comprop four-blade propeller.

The first four-blade composite propeller, developed by Composite Marine Propellers (CMP) in Lenexa, Kan., has met and exceeded aluminum propeller performance in tests by CMP and two major independent boat companies.

CMP was one of the first companies to successfully manufacture and market composite propellers. The industry leader for five years, they currently manufacture and distribute 17 Comprop models worldwide.

For further information from Composite Marine Propellers, Inc., Circle 67 on Reader Service Card

Olympic Marine Moves To New Facility, Expands Ship Repair Services

Olympic Marine Services Inc. (OMS) Portsmouth, Va., recently moved to a new 15-acre deepwater facility on the southern branch of the Elizabeth River in Portsmouth.

Vessels up to 700-foot length and 30-foot draft, and service craft can be accommodated at Olympic Marine's new piers concurrently.

Olympic Marine is a ship repair company with over 11 years of experience in commercial, MarAd, MSC and Navy work.

Recent work by OMS includes 70,000 pounds of steel renewal on a 100,000-ton bulk carrier, container adaptor frame (caf modifications) for S/S Cape Mohican for MarAd, with OMI the agent, overhauls for U.S. Navy on LCM-6s, and various other vessels and craft.

For details on the full range of repair services offered at this new facility, Circle 49 on Reader Service Card

Crowley Withdraws MarAd Application For Ship Financing Guarantees

Thomas B. Crowley, chairman and CEO of Crowley Maritime Corporation (CMC), recently announced the formal withdrawal of the company's application to the U.S. Maritime Administration for \$450

million in ship financing mortgage guarantees. This action follows the Administration's failure to approve the firm's application prior to a change in the law that took effect October 1, 1990.

Mr. Crowley stated: "We realized a need for the development of advanced double-hulled tankers. We sought support from MarAd by filing our application. However, the laws have changed since our filing and we've decided to withdraw our

application."

In late August, CMC applied to MarAd for mortgage guarantees on loans to enable the diversified maritime company to obtain financing in an attempt to build a fleet of double-hulled tankers that would meet with the requirements of the Oil Pollution Act of 1990 (OPA 90). Crowley explained that the new Credit Reform Act changes the law that provided MarAd with the authority to grant mortgage insurance guaran-

tees, which has resulted in CMC's withdrawal of application.

The company complied with the rules of OPA 90 by planning the design and construction of new generation of ecologically sound tankers for the coastwide waterborne transportation of petroleum products in U.S. waters, as mandated by Congress. The move was heralded by industry and environmental groups alike.

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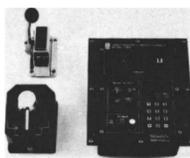
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Preview & Registrar December 17 from 9 a.m. - 1 p.m.

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DESTINATION: MINI—The Westward Venture, a 790-foot-long by 105.1-foot-beam RO/RO trailer ship, enters Commencement Bay where she will undergo dockside voyage repairs at Marine Industries Northwest Inc. (MINI) in Tacoma, Wash., for Totem Ocean Trailer Express (TOTE), also of Tacoma. The Westward Venture and sister ship Great Land, have received speedy voyage repairs by MINI to ABS standards since TOTE moved its terminal to Tacoma several years ago.

For free literature detailing the facilities and capabilities of Marine Industries Northwest Inc.,

Circle 32 on Reader Service Card

NAS Reports Double Hulls Will Save 5,000 Tons In Spillage

The National Academy of Sciences (NAS) reported at a recent conference that the use of double-hulled vessels may prevent from 3,000 to 5,000 tons of oil spillage from collisions and groundings per year over the next 25 years.

The statement was made by Adm. **Arthur E. Henn**, Chief, Office of Marine Safety & Environmental Protection, U.S. Coast Guard, at the recent International Union of Marine Insurance Conference in Boston. Adm. **Henn** contended that the oil spillage savings would represent about half the average annual spillage from vessel accidents in U.S. waters.

According to his report, large spills (30 tons and up) account for less than 3 percent of all spill events, but cause 95 percent of all spillage.

The Coast Guard is conducting a major study to determine improvements in tanker navigation as a means to reducing the risk of collision and grounding.

In addition, the Coast Guard is also beefing up its spill response by adding a new national strike team at Fort Dix in New Jersey to supplement its present force.

A control facility called the National Strike Force Coordination Center is being set up in Elizabeth City, N.C., to train and equip strike teams, as well as coordinate their response.

Braswell To Operate Panamanian Yard

Elliott S. Braswell Sr., chairman and chief executive officer of the Braswell Services Group, Inc., Charleston, S.C., recently announced the formation of Astilleros Braswell International, S.A., a Panamanian company. This company will further expand Braswell Ser-

Circle 221 on Reader Service Card

vices Group, Inc.'s ship repair capabilities, which currently include locations in Savannah, Ga., Charleston, S.C., Jacksonville, Fla., and Port Canaveral, Fla.

Astilleros Braswell International, S.A., will operate the shipyard and drydock facility located at the Pacific entrance to the Panama Canal in Balboa, Republic of Panama. Assignment of the concession, which belongs to the National Port Authority, has been approved by the

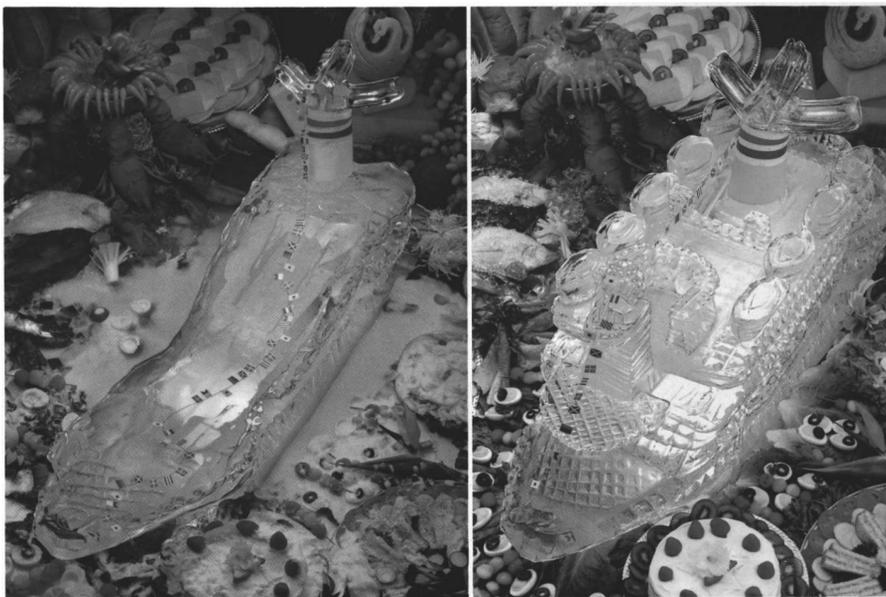
government of Panama and the shipyard, which includes a Panamax size drydock plus two smaller drydocks, has started operations. It is anticipated the shipyard will employ approximately 300 marine tradesmen.

Elliott S. Braswell Jr., president and chief executive officer of Astilleros Braswell International, S.A., will direct this and other international ventures for the parent company.

Joseph Cangelosi has been ap-

pointed general manager and chief operating officer for the new company, while **Rudolph Matzner** was named assistant general manager and chief financial officer.

Elliott S. Braswell Sr. believes the location of the facility and the very favorable economics of the region will enable Astilleros Braswell International to provide attractively priced alternatives to the more costly ship repair services available in the world.



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**Corn Island Shipyard
Offers New Construction,
Major Repairs, Services**

Corn Island Shipyard, Lamar, Ind., has announced that their marine ways were recently completed and they now offer new construction as well as major repairs. The yard is not limited to just building new barges, but new marine equipment, such as drydocks, dredge hulls and other specialty equipment.

Corn Island Shipyard, located on a 75-acre site a few miles upstream of Grandview, Ind., on 734 Mile

Marker (Ohio River), has 57,000 square feet under roof.

The yard, which will be utilizing computerized design assistance and other innovative techniques, has already landed contracts to build three crane barges for two undisclosed interests. One of the barges will measure 100 by 50 feet, while the others will be 110 by 50 feet and measure 7 feet deep. Construction has already begun, with delivery scheduled before the end of the year.

For free literature detailing the facilities and capabilities of Corn Island Shipyard,

Circle 24 on Reader Service Card

**Service Marine Industries
Elects New Officers**

Thomas R. Hensley, president and majority stockholder of Service Marine Industries (SMI), Amelia, La., recently announced the following changes in ownership and organizational structure.

SMI was recently purchased by Jim Miller of Oak Brook, Ill. Mr. Miller will serve as chairman of the board.

Also elected was Terry T. Frickey as president and chief executive officer of Service Marine. Mr. Frickey, who until recently was general manager of Fredeman Shipyards in Sulphur, La., brings to SMI over 20 years of shipyard experience including all phases of boat and

barge repair and gas-freeing operations.

Mr. Hensley, under the new organization, will serve as vice president of marketing, responsible for product development and continuing emphasis on expanding the market and service area of SMI.

Service Marine, with modern shipbuilding facilities located on the Intracoastal Waterway east of Morgan City, La., specializes in the construction of large shallow draft passenger craft (dinner cruise, gambling and mini-cruise ships) and offshore oil field support vessels. They have, in addition, an extensive ship repair division with two drydocks and dockside facilities for ship conversion projects.

For more information,
Circle 45 on Reader Service Card

**Sperry Marine, S.P. Radio
Sign Worldwide Marketing,
Product Support Agreement**

Sperry Marine Inc. (USA) and S.P. Radio (Denmark) have signed a worldwide marketing and product support agreement. Under the agreement, Sperry Marine will market the modern GMDSS Compact series of receivers, transmitters and control units along with its own Inmarsat-A and Inmarsat-C satel-

lite communications systems.

This means, says Sperry Marine vice president John V. DeMaso, that Sperry Marine now offers a complete navigation and communications package which meets GMDSS requirements and the needs of the total Integrated Bridge. It is expected that several thousand vessels worldwide will be upgraded over the next two to three years to meet GMDSS requirements which become effective February 1, 1992.

For further information,
Circle 14 on Reader Service Card

**McDermott To Participate
In Azeri Field Development**

McDermott International, Inc., New Orleans, La., recently confirmed that it has reached an agreement with Amoco Eurasia Petroleum Company to participate in the evaluation and development of the Azeri oil field in the Azerbaijan sector of the Caspian Sea, and that its Hudson Engineering Corporation has been selected as prime contractor for the development.

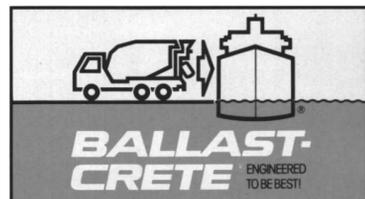
McDermott also announced that it has separately agreed to form a joint venture with Shelfprojectstroy, the largest offshore marine contractor in the Soviet Union. Shelfprojectstroy's facilities are located on the Caspian Sea.

Under agreement with Amoco Eurasia, McDermott will be one of

four parties who will share foreign interest in the development. McDermott will hold a 10 percent share; Amoco, 45 percent; Unocal, 25 percent; and a group comprised of BP, Statoil, and Ramco, 20 percent. Kasporneftegaz, the production association based in Azerbaijan, will also participate in the project.

As prime contractor, Hudson Engineering of Houston will provide design, procurement, fabrication and installation of the Azeri facilities. The field is in water depths ranging from 300 to 600 feet and is located about 90 miles offshore of Baku.

The Western companies expect to develop the field using conventional offshore technologies. The scope of the development, including size and number of platforms and the configuration of pipelines, will be determined by a feasibility study.



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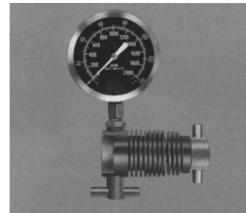
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COMSAT Announces Personnel Changes

The Communications Satellite Corporation (COMSAT), Washington, D.C., recently announced the following personnel changes.

Arthur R. Sando has been named to succeed **Richard L. McGraw**, vice president, corporate affairs. Mr. McGraw, who had held the position for the past six years, previously announced his decision

to take early retirement.

In his new capacity, Mr. Sando will report to COMSAT chairman and CEO **Irving Goldstein**, and be responsible for the corporation's media relations, Congressional affairs, investor relations, community relations and advertising and promotion.

Reporting directly to Mr. Sando will be **William K. Coulter**, who will assume an expanded role as vice president, investor relations and government affairs, and **Robert W.**

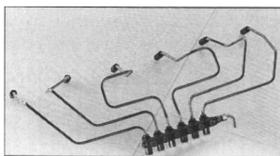
Hunter, director, corporate communications.

Warren Y. Zeger, associate general counsel, will serve as acting general counsel, following announcement of the resignation of vice president and general counsel **Willard R. Nichols**.

Mr. Zeger's appointment was made in conjunction with several other appointments made by Mr. Goldstein to help COMSAT's legal staff work more closely with the corporation's business units.

Additional changes include **Michael F. McAllister**, appointed vice president, legal affairs, for COMSAT Systems Division, Laboratories and Video Enterprises; and **John S. Hannon**, appointed vice president, legal affairs, COMSAT Mobile Communications.

COMSAT, a publicly traded company providing international and domestic fixed and mobile communications services conducts market research and engineering services to meet global customer needs. It is the U.S. treaty signatory to INTELSAT and the International Inmarsat Organization.



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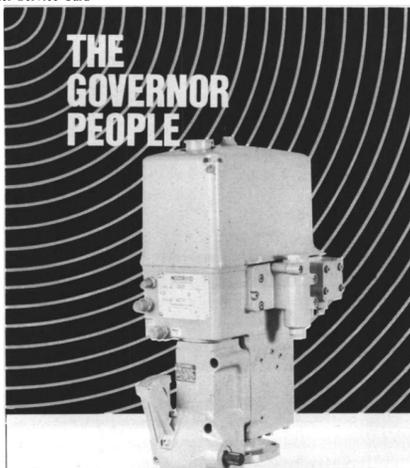
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Deutz MWM Introduces New Engine Model

Deutz MWM recently introduced their new engine model TBD 234V 16Y, increasing the power to 1,400 hp (1,030 kw) at 2,300 rpm from 1,224 hp.

The engine resembles the yacht concept of the known V12Y to allow for high-power density in compact engine rooms.

The major change in this engine is the water-cooled exhaust manifold. The standard TBD 234s have a dry insulated pulse turbocharging system, fast in response and fuel efficient. A new concept in the exhaust manifold was required, as a four-barrel water-cooled exhaust manifold was almost impossible to

construct. The TBD 234V 16Y new dual flow pipe pulse system is used to avoid the disadvantages of the less dynamic but simple constant pressure charging system and maintain the response and part load efficiency of the pulse system.

The water-cooled KKK turbo's and after-cooler are fitted on the engine above the flywheel. Since the reduction gear is normally located here, the length of the propulsion package is very compact.

For free literature on Deutz MWM engines.

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U.S.-Flag Fleet Capacity Increases

The privately owned, deep-draft fleet of the U.S. merchant marine totaled 477 vessels with a carrying capacity of about 23 million deadweight tons on May 1, 1991, according to the latest figures released by the Maritime Administration. The total comprised 401 oceangoing ships and 76 Great Lakes vessels.

Compared with the totals of May 1, 1990, the number of ships in the U.S. privately owned deep-draft fleet decreased by 3 ships and the fleet's carrying capacity increased by 132,542 dwt.

MarAd reports that there were three commercial ships under construction or on order as of May 1, 1991. Two additional vessels were undergoing conversion.

Maritime Reporter/Engineering News



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Regal Princess Delivered By Fincantieri To P&O



The 70,000-grt, Fincantieri-built Regal Princess will have a passenger capacity in excess of 1,700.

The 70,000-grt cruise ship Regal Princess was recently delivered to English owner P&O at the Fincantieri, IRI Group, Monfalcone yard in Italy. With the delivery of the Regal Princess—one year after

her sister, the Crown Princess, entered service—Fincantieri has completed the construction program for the P&O cruise fleet flagships.

The Regal Princess has a length of 803 feet, breadth of 105.8 feet and draft of 25.5 feet. She has 14 decks with a total of 798 passenger cabins, of which 436 are outside cabins, 178 inside cabins, 134 cabins with a balcony, 36 deluxe cabins and 14 suites. She will be manned by a crew of 683.

In all, the Regal Princess carries 1,748 passengers. She is provided with numerous public spaces, the principal ones consisting of a cinema with 169 seats, a theater seating 740 and a restaurant able to serve about 844 people at one sitting. There is a disco, a number of shops, bars and night clubs, gymnasiums, saunas and beauty salons. The cupola, 197 feet long and 98 feet wide and made entirely of light alloy, houses a casino, as well as other facilities.

Propulsion of Regal Princess is by twin propellers driven by diesel-electric engines, each with an output of 12,000 kw. Her maximum

trial speed was 22 knots and her normal cruising speed of 19.5 knots.

The delivery ceremony was attended by the Fincantieri chairman, **Enrico Bocchini**, and the P&O chairman, **Lord Jeffrey Sterling**. Mr. **Bocchini** recalled the strategy underlying the Fincantieri's acquisition of the contract for the two cruise ships in the mid-1980s, when the first recovery signs appeared for the European shipbuilding industry, following a downturn.

"It was undoubtedly a brave challenge," Mr. **Bocchini** said, "but also a necessary challenge, since it met the one and only pursuable strategy—to act in those market segments where it was not possible to apply a serial production able to favor the large ships of the Eastern shipbuilding industry."

Fincantieri designs, builds, and markets all types of merchant and cruise ships, naval vessels, offshore units, diesel engines, and is active in the field of ship repair and conversions.

For free literature detailing the shipbuilding capabilities of Fincantieri,

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Maritime Reporter/Engineering News



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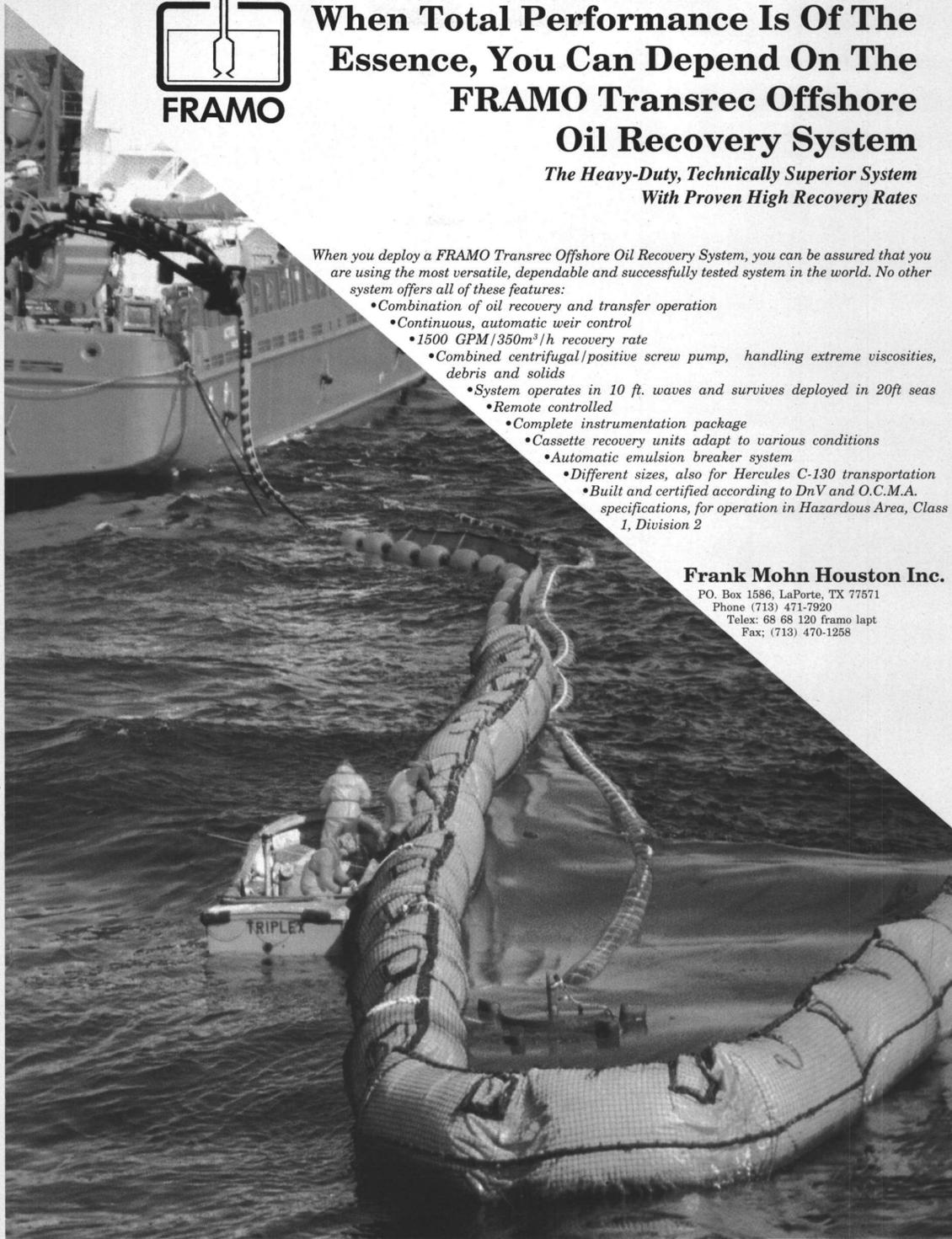
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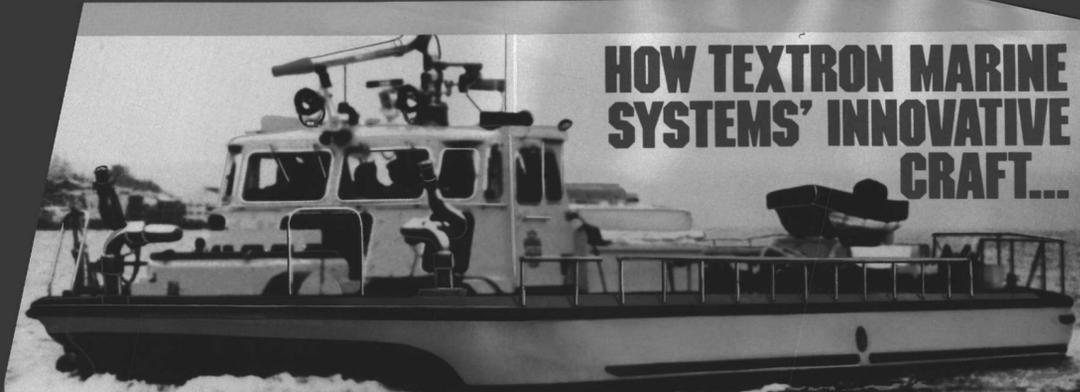
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SMC Joint Symposium Examines Lessons Of Desert Storm

A luncheon symposium called "The Marine Industry After Desert Storm—Lessons Learned," jointly sponsored by the International Cargo Handling Coordination Association (ICHCA)-USA and the Society of Marine Consultants Ltd., featuring speakers from the commercial and governmental marine sectors, was recently held at the Whitehall Club in downtown Manhattan.

The symposium was attended by a cross section of the marine industry and moderated by **Lester Rosenblatt**, chairman, M. Rosenblatt & Son, Inc. ICHCA chairman **Frank Nolan** and SMC chairman **Wesley D. Wheeler** were also in attendance.

The first speaker, **Wieger Koonstra**, executive vice president, operations, Atlantic Container Line (ACL), stressed that U.S. sealift requirements should be coordinated with NATO, in order that roll-on/roll-off/container operators such as ACL could supply tonnage when it is urgently needed, as they did in Operation Desert Storm and the Falklands conflict. Alternatively, a governmental program should be initiated to finance vessels built

abroad and brought under the U.S. flag.

According to **Wallace T. Sansone**, Deputy Commander of the Military Sealift Command (MSC), who spoke after Mr. **Koonstra**, 80 percent of the total cargo transported by sea during Operations Desert Shield and Desert Storm was carried on American-flagships. In all 96 ships were used, 78 of which were activated during the conflict. Mr. **Sansone** said that the 96 vessels carried an equivalent of as much as 1,500-2,000 ships did during World War II and the seven former SL-7 Class fast sealift deployment ships alone carried the equivalent of 116 WWII vessels.

When asked if the U.S. needs more sealift ships, Mr. **Sansone** responded, "[It] depends on the new world order."

The third speaker, **Thomas S. Winslow**, director, vessel engineering, American President Lines (APL), focused on the point that containerization and intermodalism as practiced by the military needs more development to match the commercial industry's integrated carriers such as APL. Mr. **Winslow** made several recommendations

which would make future sealift operations run more smoothly: (1) Streamline the procurement and bidding process; (2) Address regulatory barriers in time of emergency; (3) Involve commercial carriers in contingency planning; (4) Military should utilize existing or modified commercial pipelines; (5) Increase containerization in all phases—Surge, Stabilization and Sustainment; (6) Since most conflicts involve remote areas without port facilities, examine the use of shallow draft feeders, deLong piers, crane ships, barges, etc.; (7) Further development and integrate Automatic Equipment Identification (AEI) for easy identification of containerized cargo; and (8) Improve information and technology transfer—containerize ammunition, vehicles, etc.

John J. Stocker, president of the Shipbuilders Council of America (SCA) and last and most animated speaker of the day, spoke out in favor of a national sealift ship construction program which would not only alleviate America's shortfall in sealift, but also provide a transitional program to the commercial market for U.S. builders.

Mr. **Stocker** said that to support Operation Desert Shield/Storm, 71 ships were broken out of the Ready Reserve Force (RRF) by 26 shipyards. Sixteen of the shipyards involved in the work are topside repair-only facilities, meaning that they are unable to drydock a ship. "That fact alone provides a clear

indication of how deeply into the remaining U.S. shipyard industrial base this modest mobilization went," said Mr. **Stocker**. "The breakout would have been even more difficult to support if it had not come in several stages extended over several months."

Mr. **Stocker** also said that because of the poor condition of many of the ships, normal five-day breakouts were taking as long as 11 and 13 days.

"The Maritime Administration now recognizes that far too much scheduled maintenance for RRF ships had been deferred. This was principally due to inadequate funding."

Mr. **Stocker** recommended a new ship manager concept which would allow a shipyard that is responsible for the upkeep of the ship to also be the operator when the vessel is mobilized, either through a joint venture with a present operator or through formulation of a new ship operating company.

Detyens Shipyard To Perform Overhaul On Fleet Ocean Tug

Detyens Shipyard, Inc., Mt. Pleasant, S.C., has received a \$642,784 contract from the Commander, Military Sealift Command, Atlantic, Bayonne, N.J., for the regular overhaul of the fleet ocean tug USNS Powhatan (T-ATF-166).



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Massachusetts Considers Building Prison Ship To Ease Overcrowding

Governor William Weld of Massachusetts is preparing a proposal to build a 600- to 800-bed prison ship to ease the chronic overcrowding that plagues state and county jails.

The vessel would be docked in an industrial area along the Boston

waterfront or the Mystic River, with easy access to local courthouses.

A source in the administration said the governor's proposal would probably involve leasing a decommissioned vessel, paying to renovate it in Quincy, Mass., and remaking it into a prison ship. The vessel would house both state and county prisoners to alleviate overcrowding at all levels.

For the past five years, New York City has used four floating jails in a first-of-its-kind experiment in the

U.S., and corrections officials have deemed it a marked success. A fifth prison ship, the largest in the fleet, with a price tag of \$165 million, is expected to be delivered by February and moored on the East River.

Reasons for the success include: a prison ship costs a third less than constructing a prison on land; it takes only six months to build; and there is a far slimmer chance of local opposition because the prisons are docked near urban, industrial areas.

Markey Completes Delivery Of Winches For Three Vessels

Markey type WEWG-45 gypsy winch, S/N 15500

Markey Machinery Company, Seattle, Washington, recently announced completion of the delivery of two type WEWG-45 electric gypsy winches to the Crowley Maritime Corporation in Seattle for the MW Point Milne and MA7 Point Thompson.

These two machines were custom-designed to provide decades of reliable service for Crowley Maritime, and their delivery continues the Markey Machinery 84-year tradition of supplying high-quality deck machinery to the marine community.

Markey also announced the delivery of a multiple scientific winch system for the new RAF Nathaniel B. Palmer operated by Edison Chouest Offshore, Inc. for Antarctica Support Associates.

This system is the second winch package manufactured for the Antarctica Support Associates, and emphasizes their need for reliable deck machinery in the harsh operating environment of the Antarctic region.

For free literature giving more information on products from Markey Machinery,

Circle 28 on Reader Service Card

Tidewater Names New Senior Vice President

Stephen A. Snider, who joined Tidewater Inc. in September as a senior vice president of the corporation, will assume responsibility for the management of the energy services company's compression group, Tidewater Compression Service, Inc., after the retirement of H.E. (Lanny) Northcott at the end of this year.

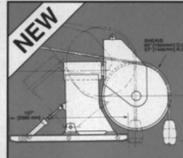
Prior to his career with Tidewater, Mr. Snider served with Worthington Compressors for five years, with Tidewater as a primary customer.

Tidewater owns and operates one of the largest fleets of vessels serving the international offshore energy industry and owns and operates one of the largest fleets of natural gas and air compressors in the U.S. The company also has modest interests in domestic oil and gas operations, real estate and insurance.

Smith Berger offers more Seaworthy choices.

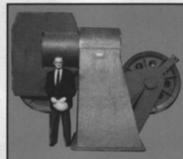
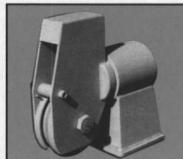
OCEANOGRAPHIC HARDWARE

Smith Berger innovative design with interchangeable sheave rims for wire rope or scientific cable improves wire and cable life.



OCEANOGRAPHIC HARDWARE

Skid mounted overboarding fairleads grooved for wire rope or scientific cables for special applications. Tapered roller bearings used throughout.

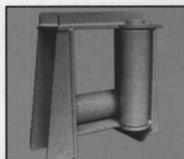
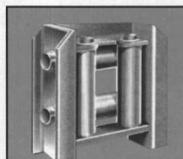
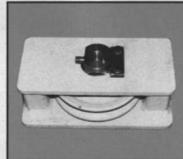


MARINER CLASS FAIRLEADS

Available with balanced head single sheave or double sheave swivel head designs. Designed for wire rope sizes up to 3" (76mm). Tail sheave or load monitoring pins optional.

MARINER CLASS GUIDE SHEAVES

Smith Berger offers a full line of vertical or horizontal guide sheaves for wire ropes up to 5" (127mm). Load monitoring pins optional.

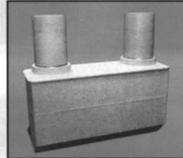
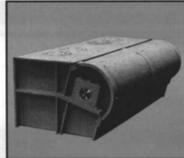


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Two, three, or four roller fairleads designed for all wire or synthetic rope sizes. Mounting bases can be custom-designed for special applications.

TOWING HARDWARE

Stern rollers, towing pins, separate pop-up pins, or specialized towing hardware can be custom-designed for new construction or retrofits.



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Circle 54 on Reader Service Card

**SAM McCALL
Gulf Craft**

(continued from page 53)

have both the forward and aft steering stations located in the pilothouse. This style of pilothouse offers 360 degree visibility for the vessel's captain.

The Sam McCall is powered with six Cummins model KT-19M diesel engines that develop 680 shp each at 2,100 rpm or a total of 4,080 shp which propels the vessel at a speed of 24 knots. Each engine is turning a 40-inch diameter propeller through a Twin Disc MG 518 reverse and reduction gear, with a reduction ratio of 2.5:1.

Norman McCall, the owner, feels that the redundancy of the six engines has eliminated the down time problem usually associated with an engine failure. These vessels are capable of operating with one or two engines out, and with four rudders, maneuvering around the platform is no problem with the loss of those engines. In fact, during sea trials, the Sam McCall ran at 24.6 knots with six engines, 21.1

knots with five engines and 20.6 knots with four engines.

The consolidation of oil company marine bases in the Gulf of Mexico requires a vessel that is capable of serving a larger area each trip. The Sam McCall is a multipurpose vessel with the speed and capacity to fulfill this requirement. This vessel is U.S. Coast Guard approved for 101 passengers and has a stability letter permitting a deck cargo capacity of 180 long tons on its 92 feet by 26 feet back deck. In addition to deck cargo, the Sam McCall is capable of offloading 43,000 gallons of water and 13,000 gallons of fuel oil, plus firefighting ability with its 600 gallon per minute fire pump and deck mounted fire monitor.

The vessel's five man crew live in central air conditioned and heated comfort in four staterooms, crews' bathroom, and galley which are located below deck and isolated from the passengers space. These areas and the vessel's systems all receive their power from the two 50-kw Detroit Diesel 4-71 diesel generators.

In conversation with **Scott Tibbs**, president of Gulf Craft, Inc., it was learned that Gulf Craft has designed

a 1,000-passenger ferry vessel based on the 160-foot crewboat hull for a customer in the Northeast.

"We calculated the weight of fuel and water carried aboard these 160-foot crewboats to be much more than the weight of 1,000 passengers and the extra weight of the enlarged superstructure. With this calculation, we feel that we have come up with a moderately high-speed and high-capacity passenger ferry.

"These 160-foot passenger ferries will not be as fast as a catamaran, but the cost per passenger seat will be much lower and the ride in rough seas will be much more comfortable," Mr. Tibbs added.

**Creasy Electronics
Receives \$198,775
For Cargo Ship Repair**

Creasy Electronics, Chesapeake, Va., recently received a \$198,775 contract from the Supervisor of Shipbuilding, Conversion and Repair, Portsmouth, Va., for ship repairs to the amphibious cargo ship USS Charleston (LKA-113).

**First Of Four Ocean
Surveillance Vessels
Delivered To MSC**

The Military Sealift Command (MSC) recently took delivery of the first of four new ocean surveillance vessels that feature a unique twin-hull design.

Built by McDermott Shipyard of Amelia, La., the vessel, named Victorious, is the newest member of the Sealift Command's Naval fleet auxiliary force of about 50 ships that provide support to combatant vessels.

The antisubmarine warfare ship is made easier to operate in rough seas because of the so-called small waterplane area twin-hull, or Swath, design.

The Victorious, which has a length of 234 feet, tows underwater listening devices that collect acoustical data and carries electronic equipment to process and transmit the information via satellite to shore stations for evaluation.

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INNOVATION



ON-TIME DELIVERY



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delivered on-time and at a competitive price. Stretching along a mile of waterfront, Bender is one of the leading ship repair operations on the Gulf of Mexico. Our modern facilities include four steel floating dry docks with lifting capacity to 20,000 tons, allowing us to repair ships to Panamax size. From our innovative team of engineers to our experienced crew of welders and pipe fitters, we bring Bender quality to every job.



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THE Model 12
(two components)
Designed for vessels
with limited space
Sizes:
F-1 Filter:
12 1/2"x12 1/2" h
D-12 Digester:
27"x15" w x 12" h
Weight:
40 lbs. dry, 115 lbs. wet
Power:
low draw
12 volt system
drawing 6 amps
or 110 volt
drawing 10 amps

Unique Simple Process

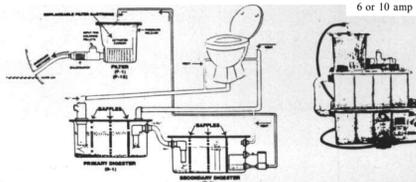
Sewage flows from the head directly into the Digester(s) where it makes its way through a series of baffles. It is broken down and dissolved by natural bacterial action during this stage. The resulting liquid (effluent) is then pumped through the Filter and passes through the chlorinator, where the final stage of purification and deodorization takes place.

Upkeep simply requires an addition of the Humphrey Activator flushed through the head periodically, a spot check on the chlorine pellets and filter. That's it. No Mess, No Fuss!

This compact Sewage Treatment system emits clear and odorless discharge better than the TYPE III, no discharge devices, which requires the use of pump out facilities that are inadequate across the country.

THE Model 10A
(three components)
Sizes:
F-1 Filter:
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D-1 & D-2 Digester:
27"x15" w x 12" h
Weight:
66 lbs. dry, 225 lbs. wet
Power:
Available in 12V or 110V
6 or 10 amp draw

**Models available
for any crew size**

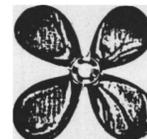


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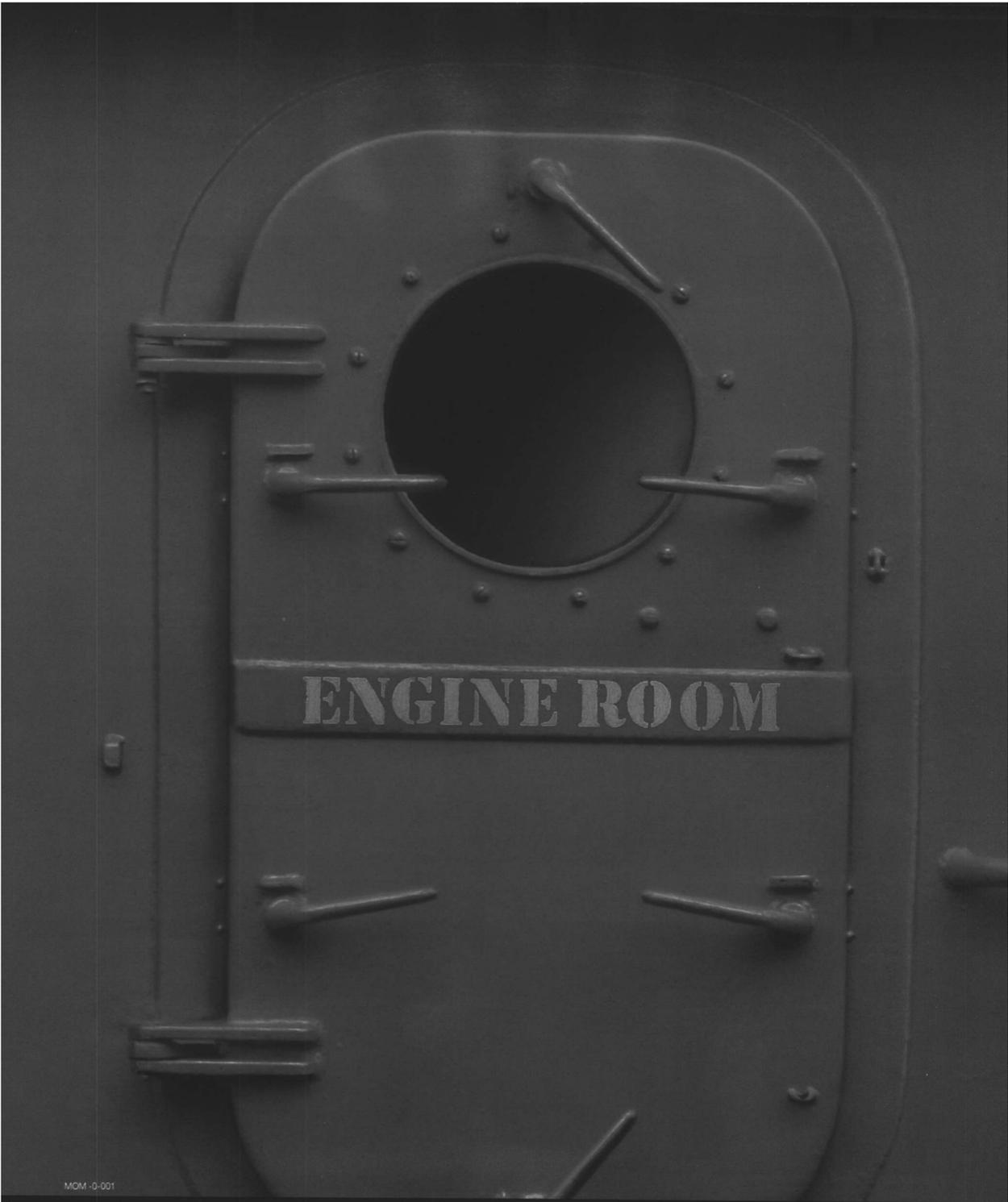
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Mobilmar® 300, a high-ash oil with zinc, is the only marine engine oil specifically designed to meet the stringent oil performance requirements of the Caterpillar

3600 Series engines.

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Boats & Barges

Westport Shipyard Delivers Detroit Diesel-Powered Patrol Boat To California State Fish & Game

Westport Shipyard, Inc. of Westport, Wash., recently delivered the 65-foot-long by 19-foot 2-inch ArEx fiberglass vessel Bluefin to California State Fish & Game.

The vessel carries a 13-foot Zodiac which is launched by an articulated Morgan Seacrane 60 mounted aft. Rollers were also installed in a stern slot so the crew can pull gill nets aboard for inspection.

The Bluefin, designed by Jack Sarin, Bainbridge Island, Wash., is powered by two Detroit Diesel engines driving two three-blade, 42-by 48-inch bronze propellers from Michigan Wheel through 2.57:1 ZFBW 195 reduction gears. Supporting systems include Hough-

Wagner steering controls and Microcommander electronic propulsion controls from MMC, Inc., Seattle. Fisheries Supply, Seattle, supplied Racor filters. The engine compartment is protected by a Kidde Fenwal halon system.

Some 20-kw of power is provided by a M964 generator from Alaska Diesel Electric, Seattle. The battery charger is Ratelco equipment. The boat has its own hot water and sewage handling systems, with a Par Macerator head from Fisheries Supply and a hot water tank from Torrid, Seattle.

Electronics gear aboard includes Furuno loran tied with a Furuno video chart recorder. Other equip-



The primary responsibilities of the fast patrol boat Bluefin, built by Westport Shipyard for California State Fish & Game, will involve monitoring commercial fishermen. Fishing boats along the coast include gill netters, trawlers and trailers, among others, and the Bluefin will check for such things as legal catches, permits, proper fishing areas, net sizes, etc.

ment includes Furuno radar, Cetec Bennar autopilot, Cybernet loud hailer, Data Marine knot log and anemometer, Telcor rudder angle indicator and seawater temperature gage, and VHF, SSB and CB radios.

The vessel will accommodate seven people with separate state-

rooms for the skipper and male and female crew persons. The deckhouse provides a full galley with microwave and both refrigerator/freezer and 12-cubic-foot freezer for extended patrols.

For free literature on the facilities and capabilities of Westport Shipyard,

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Maritime Reporter/Engineering News

Aegis Cruiser Christened At Ingalls

The Aegis guided missile cruiser USS Vicksburg (CG-69) was recently christened at the Pascagoula, Miss., shipyard of Ingalls Shipbuilding division of Litton Industries. She is the 16th of 19 CG-47 Ticonderoga Class cruisers to be built by Ingalls Shipbuilding.

Ingalls began fabrication work on the USS Vicksburg on June 16, 1989. The ship's keel was laid on May 30, 1990, and she was launched on August 2, 1991. Upon completion of post-launch outfitting, as well as dockside and at-sea testing and crew training, CG-69 will report for duty with the U.S. Atlantic Fleet in 1992.

The USS Vicksburg has an overall length of 567 feet, beam of 55 feet and displacement of 9,500 tons. She is powered by four GE LM2500 marine gas turbines to speeds in excess of 30 knots.

Teleste Marine Receives Contract For Shipboard Telephone Systems

Sweden's Teleste Marine has been awarded the order of communication systems to Viking Lines newbuilding at Meyer Werft shipyard in Papenburg, Germany.

The system is almost identical with the ones earlier installed onboard Silja lines recently delivered cruisers Serenade and Symphony.

This application includes 1,750 telephones in all cabins for direct outward dialing through 28 shore connection lines and 24 NMT-stations as transmission method.

All billing of telephone traffic is conducted and registered automatically and transferred to ship's central computer for checkout charging.

McDermott Reveals Restructure Plan To Reduce Debt

McDermott International recently revealed a major restructuring plan involving asset sales and equity issues designed to reduce debt by \$450 million.

About \$150 million of the debt restructuring involves the disposal of several older and less efficient marine construction vessels which will be scrapped or sold outside the offshore market.

Further debt reduction will be provided by issuing common shares valued at \$100 million.

"There is worldwide overcapacity of marine construction equipment," said **Robert Howson**, McDermott chief executive. "It is clear that we need to remove McDermott's less efficient equipment from the market."

November, 1991

Hall-Buck To Provide Cargo Dock Handling Services At Indiana Port

The Indiana Port Commission recently announced that Hall-Buck Marine, Inc., Burnside, La., has been selected to provide exclusive cargo dock handling services, transit shed storage and transfer services, and other miscellaneous services con-

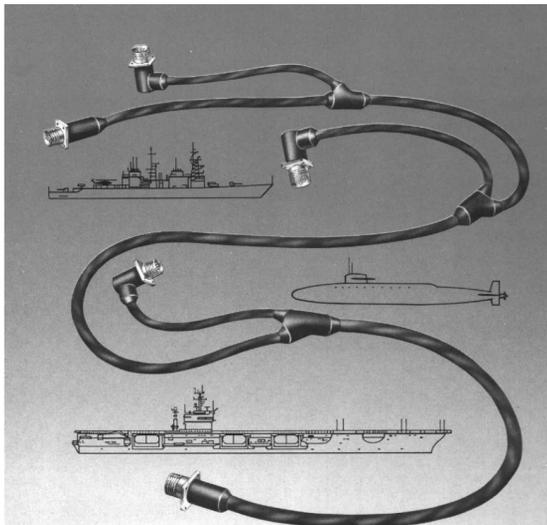
nected with the operation of the transit shed and adjacent general cargo dock located at Southwind Maritime Center, Mount Vernon, Ind.

Hall-Buck Marine, Inc., one of the nation's largest maritime stevedore/terminal operators, was selected by the Port Commission after reviewing their detailed response to the Indiana Port Commission's publicly advertised "request for proposals."

Hall-Buck handles about 6.4 mil-

lion tons of cargo per year through its terminals and provides in-plant cargo handling and process services for about 2.7 million tons per year of materials.

Frank G. Martin Jr., executive director of the Indiana Port Commission, stated, "We look for great progress at Southwind since Hall-Buck Marine, Inc., has such an excellent reputation in the maritime industry and they have a large marketing base among their customers."



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Now, with our halogen-free electrical, coaxial, fiberoptic or combination cable assemblies, you avoid the danger of toxic and blinding smoke in the event of a naval shipboard systems fire.

Your next cable assembly can meet halogen-free requirements throughout. The cable. The connector moldings. The breakouts. The transitions. All halogen-free/low smoke materials to meet the requirements of MIL-C-24640, MIL-L-24643, MIL-C-17G or MIL-C-85045D.

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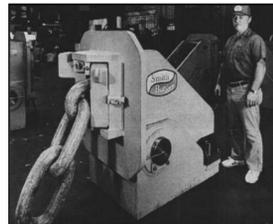
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Smith Berger Offers Free Literature On Chain Stoppers

Smith Berger Marine, Inc., Seattle, Wash., has developed a line of chain stoppers designed for mooring loads up to the breaking strength of the chain. Designed to ABS, Lloyd's, or DNV standards, the new stoppers are intended for use on FPS and

FPSO vessels. One of the features of this design is the ability to ratchet as the mooring chain is tensioned. This allows for the use of a lower cost portable tensioning device in lieu of deck-mounted ships mooring gear. A load cell monitors the mooring load with readout scales in the control house. Twelve of these units are installed on the FPSO vessel Conkauati, which is moored off West Africa. Smith Berger has also developed

a line of chain stoppers which are remote releasable under maximum storm condition loads. The ability to release under load may allow the use of smaller diameter mooring chains. The new stoppers, designed to ABS, Lloyd's or DNV standards, are also intended for use on FPS and FPSO vessels. Six of these units have been delivered to Oceanering Production Systems for use on their FPSO vessel Ocean Producer which will be



Smith Berger Marine mooring chain stopper.

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This is the trade show for workboat industry professionals. If you are involved in building or buying, maintaining or supplying, owning or operating any shallow-draft vessel, you cannot afford to miss this year's show.

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Exhibits
Last year, we presented 666 exhibits, and show management will ensure that you'll see quality exhibits when you visit this year.

Incentives
Special prizes will be given away, including a scale model of a 332 ft. freighter valued at several thousand dollars.

Spousal Program
Special discounts on sight-seeing activities, airfares and hotels will help you enjoy your stay.

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moored off West Africa. For free literature from Smith Berger giving further information,

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MKW Power Systems Opens Miami, Florida, Sales Office

In response to market demands, MKW Power Systems, Inc., manufacturer of power supply systems, has opened a Miami, Fla., sales office. The Miami office, under the direction of **Doug Braddy**, is located at 2101 NW 79 Avenue.

The Miami office also serves as a quick delivery point for Caribbean and South American markets, where over 100 Electro-Motive Division, General Motors Corporation units are operating in stationary and marine applications.

Headquartered in Rocky Mount, N.C., Power Systems is the authorized distributor of EMD diesel engine power products to the marine and industrial markets in a 17-state territory along the East Coast and the Caribbean. Power Systems is also the authorized worldwide source for EMD diesel engines for nuclear applications.

30 years of experience in the marine field

Hydraulic/Remote Valve Control Systems **Electrohydraulic Control Systems** **Control and monitoring of liquid cargo, ballast and service tanks**

Complete systems for remote control of valves, including a new range of actuators, conventional and submerged for liquid cargo, ballast and bilge to the ship and offshore industry. More than 900 systems installed.

The electrohydraulic systems can be designed for connection to a central computer system.

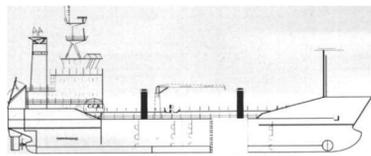
Actuators for working pressure from 50 Bar up to 200 Bar. Torque outputs from 125 Nm to 32,000 Nm.

Manufactured by Skarpenord Control Systems as, Rjukan, Norway

CARGOMASTER is one complete system for control and monitoring of cargo, ship, ballast and fuels. The technology used gives all functions integrated in one system, which means a unified presentation and an excellent over all view for the operator.

CARGOMASTER has the function and advantages you would expect from a modern control and monitoring system, and has been successfully installed on all types of tankers. Simple installation makes the system interesting for both newbuildings and retrofits.

Manufactured by Skarpenord Data as, Langesund, Norway



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Saab And Kockumation Sign Exclusive Loadmaster Supply Agreement

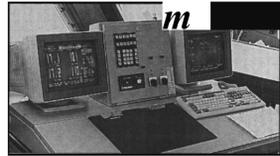
Gothenburg-based Saab Marine Electronics AB, the leading supplier of level gauging systems to the tanker industry, has signed an exclusive agreement with marine computer systems specialists, Kockumation AB of Malmo for the supply of Kockumation's Loadmaster computer system.

Saab Marine Electronics tank gaging system is called the Saab Tank Radar System—a system where measurements are taken by means of a radar wave from the top of the tank. Saab sells over 100 of these systems a year.

Kockumation's Loadmaster system can be interfaced with Saab's level gaging system thereby forming a complete level gaging and loading package.

Maritime Reporter/Engineering News

New Fuel Economy Control System From KaMeWa



The new fuel economy control Seapacer offered by KaMeWa AB of Sweden

A new fuel economy control system called Seapacer is being offered by KaMeWa AB of Sweden.

The Seapacer optimizes fuel economy for a ship by controlling: (1) the propulsion setting—continuously adjusting pitch and engine rpm for maximum propulsion efficiency; and (2) ship speed and fuel consumption over route—a predefined route plan is developed, taking into account shallow water, currents, winds, etc., in order to use a speed distribution which gives the lowest possible consumption, while ensuring a punctual delivery.

In addition to the fuel optimization, the system, connected to a PC, will produce lists, diagrams and statistics for fuel consumption for use onboard or as reports to the shipowner.

Using a combination of human intelligence and experience with KaMeWa-Seapacer's continuous surveillance of the machinery through a network of sensors provides invaluable assistance in planning entire voyages.

Results from certain voyages or a series of voyages over a period of time can assist in making the necessary alterations and experiments to improve fuel consumption savings even more.

For free literature detailing the KaMeWa-Seapacer, Circle 142 on Reader Service Card

Fredeman Shipyard Names John W. Sansing Manager

Fredeman Shipyard Inc. has appointed **John W. Sansing** general manager. The yard, which employs about 120 people, is located 17 miles north of Cameron, La., at the confluence of the Calcasieu River and the Intracoastal Canal.

Mr. **Sansing's** shipyard experience includes six years with Ingalls Shipbuilding Corporation at Pascagoula, Miss., and seven years with Gulfport Shipbuilding Corporation in Port Arthur, Texas. He was president of Newpark Shipbuilding and Repair in Houston, Texas, for six years and was president and minority owner of Mainstream Shipyard in Greenville, Miss., for eight years. Mr. **Sansing** comes to Lake Charles and Fredeman Shipyard from Channel Shipyard-Lynchburg Shipyard in Houston, where he served as general manager and marine chemist.

Fredeman Shipyard has been serving the offshore and inland marine industry at the same location and under the same ownership for over 25 years. It provides one of the most convenient and accessible repair shipyards on the Gulf Coast. The yard has specialized in repairs and is equipped to handle all tug, barge, and offshore vessel requirements on a competitive quick turn-around basis.

RoRo 92 Issues Final Call For Conference Papers, Exhibition Applications

The date and venue for RoRo 92, the 11th International Conference and Exhibition on Through Transport Using Roll-On/Roll-Off Methods, is May 20-22 at the Svenska Massan conference and exhibition

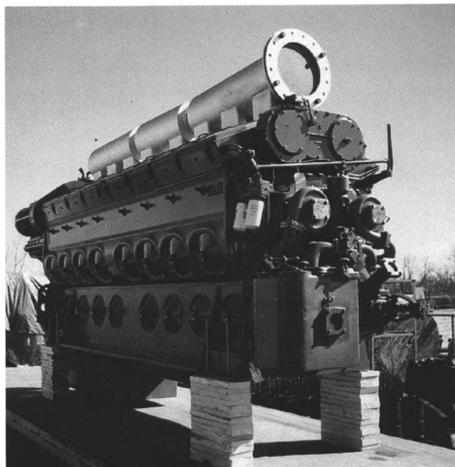
center in Gothenburg, the city that has hosted several of the most successful previous gatherings of the international Roll-on/Roll-off community.

Intending authors or companies should fax or mail proposals to **John Gwynn-Jones**, Exhibition Director, RoRo Secretariat, 2 Station Road, Rickmansworth, Herts WD3 1QP, England, phone +44 923 776363, fax +44 923 777206.



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Another vessel with engines built by SEPCO, is the Hoku Ke'a, a newly constructed vessel by Bollinger Shipyard, Lockport, LA for Hawaiian Tug & Barge Corp., Honolulu, HI. The Hoku Ke'a is a 117 ft. towing vessel with two 16/645-E2 EMD engines each rated at 1950 hp and ABS certified that is used to transport goods from Hawaii's main island to the other islands.



Oil & Gas Marine Co., Inc. of Morgan City, LA recently had eight 16/645-C EMD engines remanufactured by SEPCO that were rated 1950 hp and ABS certified to power their newly constructed 220 ft. supply vessels.

SOUTHERN ENGINE & POWER CO., INC. is a Louisiana based firm located in Morgan City. The company offers a wide range of remanufactured EMD engines from 8 to 20 cylinders rated at 975 hp to 3600 hp. Our engines receive warranties equal to that of new engines and can be ABS or AMS certified for any application - marine propulsion, electrical generating, and drilling rig applications.

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*Zinc level less than 10 ppm

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Boats & Barges

Sea-Fab Converts Offshore Supply Vessel To Oil Spill Recovery Boat

The Delaware Bay & River Cooperative (DBRC) recently christened the Delriver, the newest and largest member of its oil spill recovery fleet in a christening ceremony at DBRC headquarters in Lewes, Del.

The DBRC is a partnership of 15 companies in the petroleum, petroleum transportation and related industries in the Delaware Valley dedicated to the safe transportation of cargoes and the preservation of the waterways.

The 425-ton Delriver is the flagship of the DBRC fleet. The converted offshore supply vessel was renovated by Sea-Fab of Pascagoula, Miss., into a top notch oil spill recovery vessel, representing a \$3 million investment by member companies. The Delriver, along with all other DBRC equipment and activities is funded entirely by member companies.

"The Delriver exemplifies the con-

tinuing commitment by DBRC member companies to protect the waterways," said **Gene Johnson**, DBRC manager. "The Delriver is a state-of-the-art oil spill recovery vessel, which allows the DBRC to respond even more efficiently and effectively in the event of an incident. While we are excited to have her as part of our fleet, the safe transportation of cargoes remains the goal of the member companies," Mr. **Johnson** emphasized.

Member companies include Amoco Oil Co, Atlantic Pipeline, BP Oil, Inc., Chevron, USA, Inc., Coastal Eagle Point Oil Company, Delmarva Power, E.I. DuPont de Nemours & Co., Exxon USA, Maritrans, Mobil Oil Corp., Philadelphia Electric Company, Public Service Electric & Gas Co., Seaview Oil Company, Star Enterprise, and Sun Refining & Marketing Company.



The oil spill recovery vessel Delriver was converted by Sea-Fab, Pascagoula, Miss., for the Delaware Bay & River Cooperative, Lewes, Del.

The cooperative operates in Delaware, New Jersey and Pennsylvania, serving the Delaware Bay, as well as the navigable sections of the Delaware and Schuylkill Rivers.

The Delriver is staffed 24 hours a day by two four-man crews. She measures 166 feet in length and has a 38-foot beam and an 8-1.2-foot draft. Her powerful 2,000-hp engines, 62,000-gallon fuel capacity and maximum speed of 12 knots ensure that she reaches her destination quickly. Her twin propellers and bow thruster make her a highly maneuverable vessel.

The Delriver uses Ro-Boom sys-

tem of oil spill recovery. As she navigates through a spill area, two arms extend from either side deploying R-Boom skimming systems. The J-shaped booms contain skimmers capable of recovering oil capacity of 130,000 gallons. The Delriver also has the capability of deploying 3,000 feet of 43-inch boom from her stern, enough to fully encircle a tanker.

For free literature detailing the vessel construction, conversion and repair capabilities of Sea-Fab,

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Upcoming Events

IMAS-91 in Sydney, Australia, November 11-13, 1991. The Institute of Marine Engineers will hold its Sixth International Maritime and Shipping Conference at the University of New South Wales. The theme of the conference will be high-speed marine transportation. Some 30 papers will be presented as part of the conference program. For fur-

ther information, contact L.J. Pandolini, Honorary Secretary, IMARE, Sydney Branch, 58 Melba Drive, East Ryde, NSW 2113, Australia; phone: +61 2 878 1914; fax: +612 8173703.

Panama Maritime 91 in Panama City, Panama, November 12-15. Conference topics will include the Panama Canal, marine pollution control, marine casualties, Panama ship registry and other open

registries, and Panama's maritime court. Held at the Atlapa Convention Center. Contact the Panama Trade Bureau Inc., World Trade Center Panama, P.O. Box 6-2432, el Dorado, Panama City, Panama; phone: (+507) 696124.

Europort'91 in Amsterdam, The Netherlands, November 12-16. Exhibition will focus on shipping and shipbuilding, port and dock equipment, communication and naviga-

tion equipment, etc. Will be held in the RAI Exhibition and Conference Center. For further information, contact RAI Exhibitions in Amsterdam at +31 20 549 1212.

SNAME Annual Meeting & 11th International Maritime Exposition in New York City, November 13-15. Marine industry trade show sponsored by the Society of Naval Architects and Marine Engineers. Technical papers will be presented on industry issues. Exhibits will include ship design, propulsion machinery, navigation and communications equipment, etc. Will be held at the New York Hilton. For further information, contact SNAME at 601 Pavonia Avenue, Jersey City, N.J. 07036; or phone: (201) 798-4800.

Quality Control In Shipping Operations in London, November 27-28. Two-day international conference focusing on the safety of ships, quality assurance and ship management. Will be held at the Gloucester Hotel. For details, contact: Legal Studies & Services Ltd., IBC House, Canada Road, London EC1A 2EX; telephone: 071-236-4080; or fax: 071-489-0849.

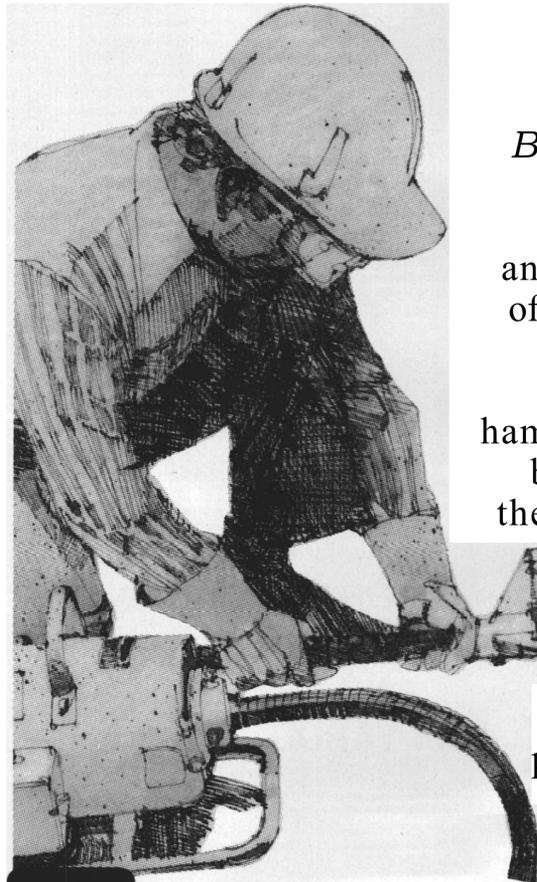
Offshore Pipeline 91 in New Orleans, La., December 4-6. An international workshop on offshore pipeline safety, will be held at the Doubletree Hotel and Conference Center. Participation will include representatives of the gas and petroleum industry, consulting firms, offshore contractors, manufacturers and fabricators, government agencies, and academic and research institutions from many countries. Contact Dr. D.V. Morris, 111 Offshore Technology Research Center, 1200 Mariner Drive, College Station, Texas 77845; phone: (409) 847-9011; or fax: (409) 845-9273.

The Work Boat Show in New Orleans, La., December 5-7. Annual exhibition focusing on offshore supply boats, inland tugs, barges, commercial fishing boats and excursion/passenger vessels will be held at the Louisiana Superdome. For more information, contact: National Fisherman Expositions, Inc., 5 Milk St., P.O. Box 7437, Portland, Maine 04112-7437; telephone: (207) 772-3005; or fax: (207) 772-5059.

1992 Marine Technical-Environmental Conference, Marine Vessel Emissions in Chantilly, Va., January 8-9, 1992. Conference organized by the American Petroleum Institute focusing on vapor emissions from marine vessels, particularly tankers and tank barges, during normal and routine operations. For further information, contact: Sean T. Connaughton at (202) 682-8194 or Robin Scott at (202) 962-4750, API Transportation Department, 1220 L Street, N.W., Washington, D.C. 20005; fax: (202) 682-8030/8036/8037.

Drydock Technology & Operation Training Program in San Diego, Calif., March 2-6, 1992. Train- (continued on page 120)
Maritime Reporter/Engineering News

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Boats & Barges

Marco Delivers Caterpillar-Powered North Pacific Freezer Longliner

The latest addition to the Alaska fishing fleet is a new, longer version of Marco Shipyard's successful North Pacific freezer longliner design. The 141-foot Lilli Ann, recently christened in Seattle, Wash., was designed and built by Marco for Deep Pacific Fishing Co. of Seattle. The company operates the Deep Pacific, a freezer longliner converted by Marco prior to the new class of vessels now being built.

Before the Lilli Ann, Marco had built three 135-foot boats for Alaska Frontier Company (AFCO) of Edmonds, Wash. Their most recent vessel, the Frontier Explorer, joined the fleet in July. Although essentially the same design as the AFCO vessels, the Lilli Ann features a different arrangement plan and a refrigerated fish capacity of 848,000 pounds (385 MT) that is more than 40 percent larger.

Much of the capacity increase is due to the addition of a second hold forward on the main deck. Aft, the baiting station has been moved down to the main deck, with all accommo-

datations and the galley/mess together on the upper deck and pilothouse levels.

Many of the refinements found in the Lilli Ann are the result of the very successful experience Deep Pacific has had with their first vessel since her conversion from an offshore supply ship in 1988.

With a length of 141 feet 4 inches overall, the Lilli Ann is longer than the 130-foot Deep Pacific, and her frozen fish capacity is nearly double that of her fleet-mate. The Lilli Ann has a beam of 30 feet 10 inches and a depth of 14 feet 11 inches. She is powered by a Caterpillar 3512, rated at 1,175 bhp at 1,600 rpm, which drives a controllable-pitch, three-blade Berg propeller through a Reintjes reduction/reversing gear.

Like her predecessors, the Lilli Ann is equipped with Marco's highly successful MarcoMatic automated longlining system. The fully integrated system features extensive rack storage and the CircleMatic baiter. It is the world's only machine capable of automatically bait-



The 141-foot North Pacific freezer longliner Lilli Ann shown during sea trials in Puget Sound. The new vessel was designed and built by Marco Shipyard of Seattle for Deep Pacific Fishing Company.

ing full-circle circle hooks, which are the predominant choice of the North Pacific longline fishery.

In the process area, the Lilli Ann is outfitted with gutting, cleaning and packing tables by Carnitech and Ryan 214 heading machines. The refrigeration system by Sabroe includes four 12-station horizontal plate freezers. With a crew of 26, the ship can process more than 50,000 pounds of headed-and-gutted fish per day.

"This vessel is the latest indication of how well-received our North Pacific freezer longliner concept has been," commented Marco Shipyard vice president Bob McMahon, "and we're proud of the record these boats are establishing in Alaska. Repeat orders from successful operators are the highest compliments you can get in this business, and we're honored by Deep Pacific's choice," he

added. With both builder's sea trials and crew fishing gear trials completed in Puget Sound, the Lilli Ann was fueled and provisioned and left for Dutch Harbor to begin her fishing career in late September.

For free literature on the shipbuilding and repair services of Marco Shipyard,

Circle 75 on Reader Service Card

Braswell Receives \$1.4 Million Pact For T-AG Voyage Repairs

The USNS Vanguard (T-AG-194) will undergo voyage repairs at Braswell Services Group, Inc., Charleston, S.C. under a \$1,397,143 contract. The pact was awarded by the Commander, Military Sealift Command, Atlantic, Bayonne, N.J.



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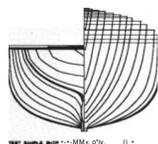
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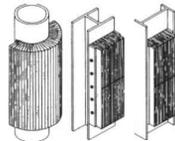
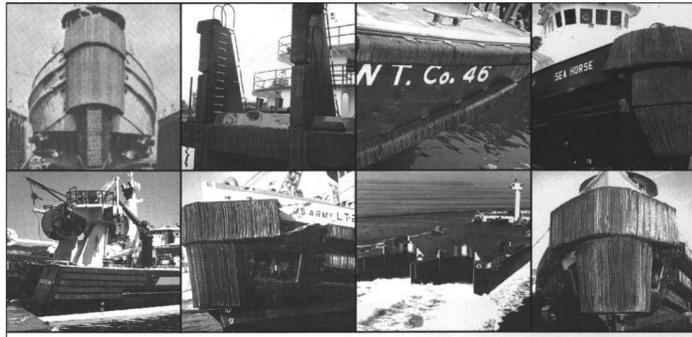
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Circle 209 on Reader Service Card

Upcoming Events

(continued from page 118)
ing program offered by Marine Design Services Inc. at the Radisson Hotel in Mission Valley, San Diego, will focus on all technical aspects of drydocking, both commercial and U.S. Navy ships. For details, contact: Marine Design Services, Inc., P.O. Box 928, Bonita, Calif. 91908; telephone: (619) 427-4219.

Fort Lauderdale Charter Yacht Show in Ft. Lauderdale, Florida, April 2-5, 1992. Sponsored by the Florida Yacht Brokers Association, the show will be held at the Pier 66 Marina. The association anticipates between 25 to 30 charter megayachts will be open for viewing. The trade show will be open to yacht charter agents and management companies. For further details, contact: Pam Pahl, executive

secretary, Florida Yacht Brokers Association, P.O. Box 6524, Station 9, Fort Lauderdale, Fla. 33316; telephone: (305) 522-9270; fax: (305) 764-0697.

OTC 1992 in Houston, Texas, May 4-7, 1992. One of the world's largest offshore equipment and services exhibitions. Held annually in the Astrodomain Complex. For further information, contact Fred Herbst at (214) 669-0072.

ASME Turbo Expo, Land, Sea & Air in Cologne, Germany, June 1-4, 1992. The 37th ASME International Gas Turbine and Aeroengine Congress and Exposition sponsored by the International Gas Turbine Institute. Event will be held at the Koln Messe. For further details, contact: the International Gas Turbine Institute, 6085 Barfield Rd., Suite 207, Atlanta, Ga. 30328; telephone: (404) 847-0072; or fax: (404) 847-0151.

1992 ASME Cogen Turbo Power in Houston, Texas, September 1-3, 1992. Congress and exposition on gas turbines in cogeneration and utility, industrial and independent power generation sponsored by the International Gas Turbine Institute. Event will take place at the Adam's Mark Hotel. For further details, contact: the International Gas Turbine Institute, 6085 Barfield Rd., Suite 207, Atlanta, Ga. 30328; telephone: (404) 847-0072; or fax: (404) 847-0151.

AAPA 1992 Annual Meeting in Anchorage, Alaska, September 21-25, 1992. Annual meeting of the American Association of Port Authorities. An attendance of 800 is anticipated for this event. For further information, call (703) 684-7300.

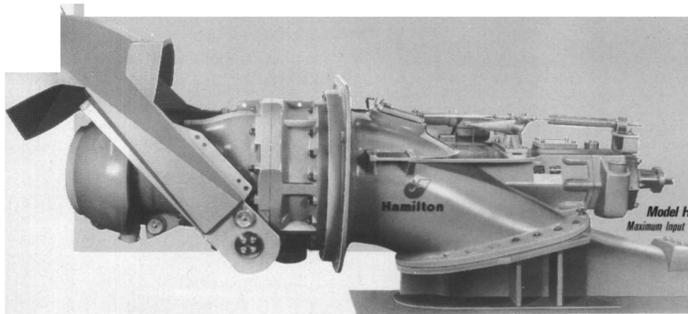
SMM '92, International Shipping & Marine Technology Market & Congress in Hamburg, September 29-October 3, 1992. One of the largest maritime exhibitions in the world, with displays in shipping, shipbuilding, offshore technology, ports, etc. For further information, contact: Hamburg Messe und Congress GmbH, Jungiusstrasse 13, Messehaus, W-2000 Hamburg 36, Germany; telephone: +49 (40) 35 69 21 40; or fax: +49 (40) 3569 21 80.

Rapp Hydema Winch Drive Optimizes Torque, Speed And Towing Performance

A trawl-winch drive said to optimize torque, speed and towing performance was recently launched by Rapp Hydema A/S, Bodo, Norway. The drive also reduces winch load and wear, and it is directly replaceable with the company's earlier drives.

In cooperation with a manufacturer of hydraulic motors, Rapp Hydema has developed a hydraulic drive, named WDH-60, that provides a first-layer pull of 16-25 tons, or 335-55 kNm, depending on gear ratio and oil pressure. It is a sequel to the company's heavier trawl-winch drive, which has had considerable success since its introduction in 1987.

The first WDH-60 drives were recently installed in two Seattle-based trawlers. In October, a complete trawl winch with the new drive was on show at the Seattle Fish Expo.



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Circle 313 on Reader Service Card

Versatile Pacific Delivers Canadian Coast Guard Type '500' Search And Rescue Cutters

Versatile Pacific Shipyards Inc., Victoria division, recently delivered two new Type "500" SAR cutters to the Canadian Coast Guard.

The vessels—CCGS Gordon Reid and John Jacobson—bear the names of two noted British Columbia native Indians, both of whom had strong ties to the maritime community.

Designed by Robert Allan Ltd., naval architects of Vancouver, B.C., specifically for service on the British Columbia coast, the 163.8-foot-long by 36-foot-breadth "500s" have a primary function to conduct coastal search and rescue missions, and associated patrol duties to the 200 nautical mile offshore limit. Sec-

ondary functions include firefighting, resupply of light stations, pollution surveillance and personnel training.

The CCGS Gordon Reid and John Jacobson feature all welded steel hull and main superstructure, aluminum alloy wheelhouse and masts, and are constructed to ABS Class + A/ACCU E for unrestricted ocean service.

Main engines are Deutz MWM Model SBV6M628, each rated 916 kw at 740 rpm turning four-bladed, twin-screw KaMeWa propellers. The main engines are resiliently mounted with Vulkan flexible couplings.

The vessels are equipped with a



The Type "500" cutters are equipped with a Fume passive roll stabilization tank, mounted just below and forward of the bridge to significantly reduce roll amplitude in the severe weather conditions in which the cutters must operate. Maneuverability is aided by a 500-hp tunnel-type bow thruster.

significant foam/water off ship firefighting capability, provided from two pumps, each capable of delivering 600-tons/hour, driven off the front end of the two outboard main engines via flexible couplings and a step-up gearbox. Two primary monitors are mounted on a platform atop the funnels.

A primary feature of the SAR cutters is the stern ramp from which a 7-meter RIB fast rescue boat will be launched and recovered.

For free literature detailing the facilities and capabilities of Versatile Pacific Shipyards,

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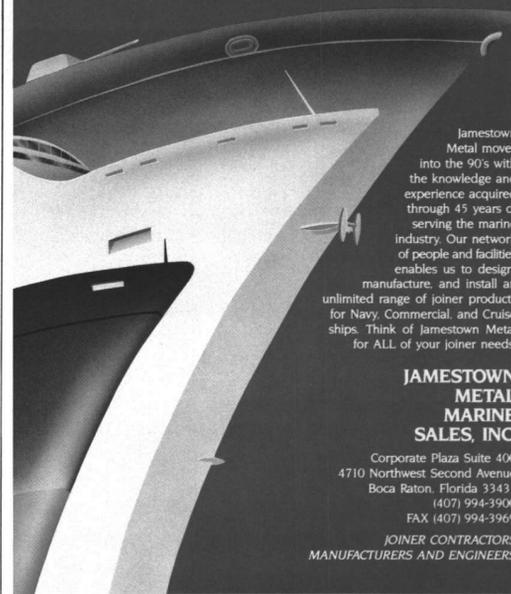
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Circle 202 on Reader Service Card

The Shipbuilders of Spain

New Joint Venture Firm Formed For Marine Pollution Control Services

Ecomarine USA and OMI Petrolink Corp. have formed a joint venture, Ecomarine Gulf, to provide advanced technology and services for marine pollution control, oil spill response, and marine monitoring and mapping in the states bordering the Gulf of Mexico.

Based in Houston, Texas, Ecomarine Gulf will provide government agencies and businesses in Texas, Louisiana, Mississippi, and Alabama, with services of state-of-the-art, multi-mission environmental vessels—the ECO-110 and the ECO-800. These craft are designed to constantly monitor and control water pollution and to quickly remove floating debris and clean up oil and other chemical spills.

In announcing the joint venture, William S. Doyle, managing director of Ecomarine USA, said, "Nowhere in the country are people more concerned about preserving our precious waterways than in the area around the Gulf of Mexico. We are very excited about having the opportunity to offer Ecomarine's unique environmental services to the region through our joint venture with Petrolink."

Ecomarine Gulf's management team will be headed by Winthrop A. Wyman, chief executive officer of Petrolink, and Thomas J. Johnson, formerly manager of special projects for Zapata Gulf Marine Corporation.

Based in Houston, OMI Petrolink Corp. was formed to engage in the offshore transfer and ligherage of crude oil from large, deep-draft tankers into vessels of appropriate draft to enter U.S. ports for delivery to refineries and terminals. The company is a subsidiary of OMI Corporation, a major shipping concern based in New York City.

Ecomarine USA is a joint venture of OMI Ecoventures Inc., a holding company headed by Maxwell A. Rabb, the former U.S. Ambassador to Italy; and Ecolmare Spa of Sorrento, Italy, a leading provider of technologically advanced marine-ecology services for government and industry.

For more information on Ecomarine Gulf,
Circle 193 on Reader Service Card

New Service Offered To Develop Oil Spill Response Plans

Owners and operators of tank vessels calling at U.S. ports are in a predicament. The Oil Pollution Act of 1990 and proposed Coast Guard regulations require tank vessel owners and operators to prepare and submit oil spill response plans for each vessel. Besides identifying a qualified individual with the full authority to implement immediate removal actions, the response plan

must identify and ensure by contract the availability of private personnel and equipment sufficient to remove a worst case oil spill. The plan is to also address the protection of sensitive natural resources in the particular port area.

Florida's Oil Spill Response Group, based in Ft. Lauderdale, Fla., is developing NAT.PORT/M.E.T.E.R.S., a national subscription contingency plan system, to

meet the needs of tank vessel owners and operators. The specific port plans when completed will meet all Federal and State governmental requirements.

NAT.PORT/M.E.T.E.R.S., which stands for National Port/Marine Emergency Tankship Environmental Response System, provides for a qualified shore agent in each of the petroleum ports that customers request service in. The shore agent is respon-

sible to meet each tanker or barge with the pre-approved port contingency plan in hand. He or she will know governmental people in the port that need to be contacted should an incident develop. The tanker must still have an internal plan to prevent, and in the case of a spill, to reduce pollution. Florida's Oil Spill Response Group staff can also assist vessel owners in developing such a plan.

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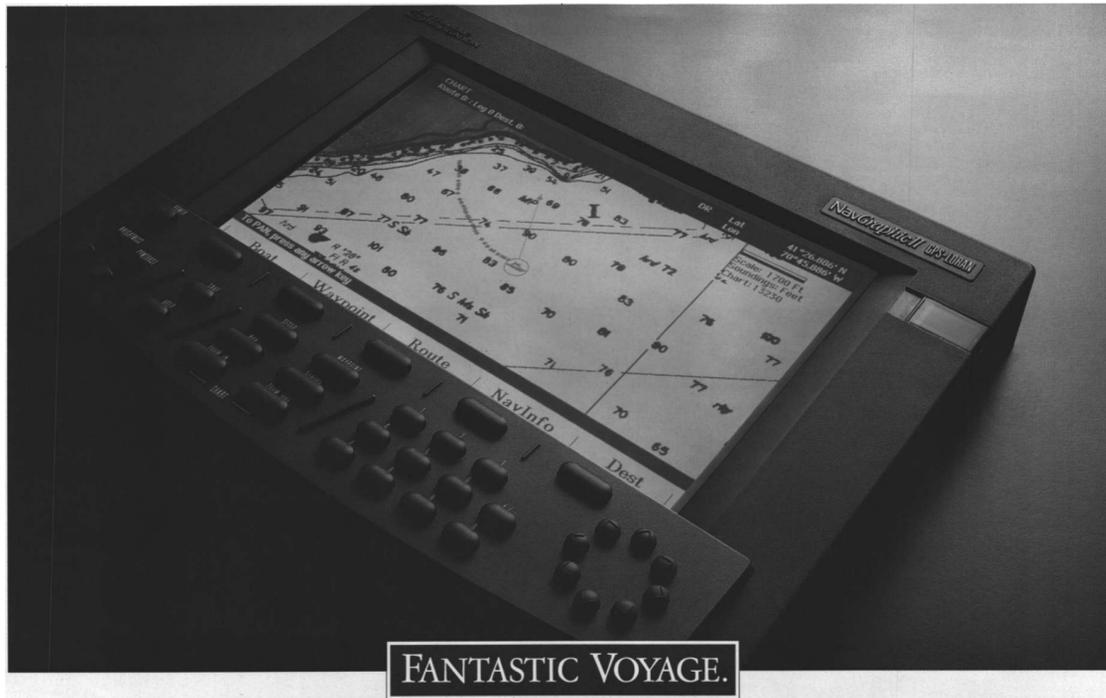
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The Aegis Class cruiser USS Philippine Sea, built by Bath Iron Works, Bath, Maine, is one of many vessels in which Deutsch Pyplok swage marine fittings have been installed by Jacksonville Shipyards.

Deutsch Pyplok Fittings Continue To Join Critical Piping Systems At Jacksonville Shipyards

Many people, in shipyards and the Navy alike, consider the ship's Halon fire-control system to be among the most critical piping systems on any vessel. Important because in case of a ship fire, the survivability of everything onboard will ultimately depend on how well the CO canisters actuate and the fire control system operates. Jacksonville Shipyards, Jackson-

ville, Fla., like most shipyards, is faced with the task of providing reliable products quicker and at a reduced cost to the government and the taxpayer. Accordingly, the yard's pipe foreman, **George Leonard**, took a closer look at Pyplok swage marine fittings manufactured by Deutsch Metal Components in Los Angeles, Calif. Now, he says, he "swears by 'em."

Mr. **Leonard** and his group of pipe fitters have installed Pyplok swage marine fittings on the new Aegis Class cruiser USS Philippine Sea, as well as the USS Doyle, USS Gallery, USS Estocin, USS Flatley, and others.

The Halon system is a 3,000-psi rated system, each installation of which Mr. **Leonard** and his group pressure tests from two to four hours at operating pressure. As far as installation costs, Jacksonville Shipyards benefits from fewer requirements with Pyplok.

The Deutsch Pyplok pipe fitting system has demonstrated an unparalleled reliability record with zero rework. According to Mr. **Leonard**, zero rework means increased productivity and profitability at Jacksonville Shipyards.

Jacksonville Shipyards is a major ship repair yard on the East Coast, owned by Fruehauf Trailer, which was acquired in 1989 by Terex Corporation. It is comprised of their

downtown yard in Jacksonville, Fla., along with their Mayport division and Bellinger division.

The commitment to use the relatively "new" Deutsch Pyplok pipe fitting system, which has actually been in use for over 10 years, underscores Terex Corporation's philosophy to integrate modern technology for enhanced ship repair production.

Mr. **Leonard's** use of the Deutsch Pyplok system, through substantially reduced man-hour costs, rework cost and other costs (i.e., flushing, gas-freeing and fire-watch) has shown it to meet Terex's commitment to increased quality and productivity.

For free literature giving more information on the Deutsch Pyplok pipe fitting system,

Circle 47 on Reader Service Card

For literature detailing the facilities and capabilities of Jacksonville Shipyards,

Circle 48 on Reader Service Card

Johnnie D. Laman Named New Chairman Of NWC

Johnnie D. Laman of Houston, Texas, marine transportation manager of Dow USA, was recently installed as the National Waterways Conference's newly elected chairman. Mr. **Laman** has a 30-year record of service at Dow, where he has managed barge and ship transportation since 1980 and since 1988 has also supervised the firm's inter-

national operations.

About 350 waterway leaders attended the waterways convention, which was held at the Doubletree Hotel in Houston.

W. Richard Christensen of Ashland, Ky., vice president of Ashland Petroleum Co., was elected vice chairman, and **Robert W. Portiss**, port director of the Tulsa, Okla., Port of Catoosa, was chosen as first vice president.

Harry N. Cook of Washington, D.C., was reelected as president.



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**Navy Christens
Third SWATH T-AGOS
At McDermott Yard**

The USNS Effective (T-AGOS-21) was recently christened at McDermott Shipyard in Amelia, La. The Honorable **Craig S. King**, General Counsel of the Navy was the principal speaker at the ceremony, and his wife, **Janet**, was the ship's sponsor. **Richard S. Haynes**, Coun-

sel for the Military Sealift Command, represented the MSC and spoke at the ceremony.

The USNS Effective features a unique twin-hull design which makes the ship more efficient in rough waters. In heavy seas, bow slamming forces single-hulled ships to slow to as little as 20 to 30 percent of their calm water speed. Twin-hulled ships can go faster in rough water and the stability provided by this type of design makes it easier for crews to carry out their mission

of ocean surveillance. The Effective is one of four SWATH (Small Waterplane Area Twin Hull) T-AGOS ships built or under construction at McDermott Shipyard for the U.S. Navy. The first, the USNS Victorious (T-AGOS-19), was delivered this past August; the second, USNS Able (T-AGOS-20), was christened in February 1991; and the fourth, the USNS Loyal (T-AGOS-22), is under construction.

The Effective is 234.5 feet long, has a beam of 93.5 feet, fully loaded

draft of 24.6 feet, and a sustained speed of 9.6 knots. She will tow underwater listening devices to collect acoustical data and carry electronic equipment to process and transmit that data via satellite to shore stations for evaluation. The ship, the listening devices and the electronic equipment are all part of a system called the Surveillance Towed Array Sensor System or SURTASS.

She will carry a civilian crew of 25, with 12 technicians from the Naval Space and Warfare Systems Command. When delivered, the Effective will come under the control of the Military Sealift Command, Pacific, and will operate to support the anti-submarine warfare of Commander in Chief, Pacific Fleet.

**Tano Acquires Valcon,
Opens New Facility
In Virginia**

Tano Corporation, New Orleans, La., recently announced the acquisition of Valcon Sales and Services, Chesapeake, Va., and the opening of a regional field service and repair facility for its Tano-GR Services Division in Chesapeake.

Valcon, which will be part of Tano Marine Systems, specializes in the overhaul and repair of all types of valves, including regulating, relief, high-pressure air, gate and globe valves. Among their specialties is the maintenance and repair of Leslie valves. Valcon has the ability to test valves of all types, and maintains a stock of replacement parts.

Tano-GR Services performs all field service activities, ranging from system installation, repair, calibration and startup of marine propulsion systems, boiler controls, instrumentation and monitoring systems.

The Tano-GR operation is located in the recently acquired Valcon sales and services facility at 3734 Cook Boulevard, Chesapeake, Va. 23323, and can be reached by telephone (804) 478-8080, or fax (804) 485-9413.

**ACL, Hapag-Lloyd
& CGM To Move
To Thamesport**

Atlantic Container Line (ACL) Hapag-Lloyd and CGM recently moved their U.S. West Coast service from Felixstowe to London-Thamesport. This service, operated with eight vessels of 1,400 twenty-foot-equivalent-units (TEU) capacity on a weekly basis covers the United States ports of Long Beach, Oakland, and Canadian port of Vancouver.

ACL and Hapag-Lloyd also moved their U.S. Atlantic/Gulf container service to London-Thamesport last month. The service is operated with five ships of 2,550-TEU capacity on a weekly basis, and covers the ports of New York, Norfolk, Savannah, Miami, Houston and New Orleans. London-Thamesport is Britain's newest deepsea port.

Maritime Reporter/Engineering News

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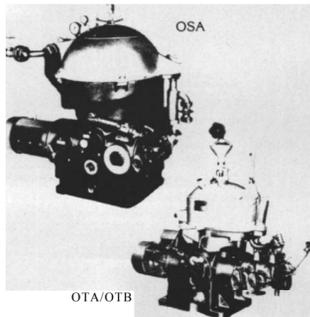
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Loan Guarantees Totaling \$82 Million Approved By MarAd For Shipbuilding

Loan guarantees totaling nearly \$82 million were approved by Maritime Administrator **Warren Leback** for six financing and refinancing applications under the agency's Title XI program.

With only one guarantee approved since 1987, the program had been virtually dormant. Title XI was nearly put on the chopping block by a series of huge defaults during the 1980s.

Quick approval by MarAd came before the October 1 effective date of a credit reform law that could make it more difficult to get guaranteed financing for maritime projects in the future.

The following applications were approved:

- American Commercial Lines, Jeffersonville, Ind., for financing construction of 50 hopper barges and eight river tank barges. The guarantee is for \$11.2 million.

- Central Gulf Lines, New Orleans. The \$15 million guarantee finances the reconstruction and reconditioning of up to 500 lighter- aboard-ship barges.

- Chilbar Shipping Co., Philadelphia, for refinancing a portion of current Title XI obligations issued for the financing of a chemical carrier. The approved guarantee is for \$8.5 million.

- General Electric Credit Corp. of Georgia, Stamford, Conn. It will use a new guarantee worth \$30.9 million to help refinance a loan on an integrated tug/barge unit.

- Ingram Barge Co., Nashville, Tenn., to finance construction of 44 open hopper barges and 15 double-hull chemical tank barges with a new \$12.2 million guarantee.

- Parker Towing Co., Tuscaloosa, Ala., to refinance a construction loan on 25 dry cargo barges with a new \$3.9 million MarAd guarantee.

Blue Star Completes Acquisition Of ACT(A)

Blue Star Line Ltd. has completed the acquisition of Associated Container Transportation's North American operations, the company recently announced in London. The new North American company, to be called Blue Star PACE Ltd., is headquartered in New York.

With 10 ships serving the trade, Blue Star PACE becomes the most comprehensive service available between North America, Australia, New Zealand and the South Pacific.

According to **Ray Tilley**, who last month was named president of the company, the "PACE Service," calling both the East and West Coasts of North America, will continue to serve Australia, New Zealand and the Pacific Island ports of Noumea and Suva.

Ingalls Begins Construction Of First SA'AR 5 Corvette

Ingalls Shipbuilding division of Litton in Pascagoula, Miss., has begun construction of its first SA'AR 5 corvette for the Government of Israel. Ingalls president **Jerry St. Pe**, as well as Adm. **Micha Ram**, Chief of Naval Operations, Israeli

Navy, and other Israeli naval and defense officials participated in the ceremony. Ingalls is building three of the 1,200-ton corvettes for the Israeli Navy, with an option for a fourth ship. Ingalls completed the detail design of the all-new corvettes utilizing the three-dimensional capabilities of Ingalls' Computer Aided Design (CAD) system. The corvette is the first surface combatant to be designed entirely using CAD. The first corvette is scheduled to be com-

pleted at the end of 1993, with the follow-on ships to be delivered at six-month intervals thereafter. Ingalls is a modern shipbuilding facility with 16,500 employees. During the past 53 years, Ingalls has delivered nearly 300 ships into active service, including 55 major U.S. Navy surface combats since 1975.



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**Detroit Diesel Donates
Auxiliary Propulsion
For Tall Ship 'Discovery'**

Sail Adventures in Learning (S.A.I.L.), Inc., of Bath, Maine, has announced that Detroit Diesel Corporation (DDC) of Michigan has become the largest in-kind sponsor of its 215-foot tall ship Discovery by donating the vessel's auxiliary propulsion. DDC will provide a 12V-

149 TI diesel engine, while Twin Disc will provide a marine transmission. The engine/transmission package is of monumental importance in the planning of the ship's construction.

"We are in full support of the environmental and educational mission on which Discovery will embark," said **Roger Penske**, chairman of Detroit Diesel, "and we are looking forward to becoming a part of Discovery's voyage.

Designed by sailing ship expert

and marine architect **Roger Long**, the Discovery will be the first full-rigged ship built in this country since 1899. In addition, she will be the only American-built Class A tallship actively sailing; the other square riggers built in this country are museum vessels which sail infrequently, if at all.

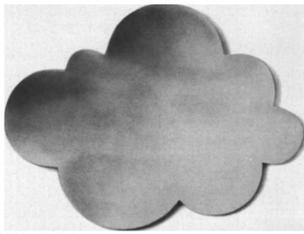
The Discovery's construction, which had been originally scheduled for completion by the 1992 Christopher Columbus Quincentenary celebration, has been rescheduled to

begin in early 1992.

Though much of the Discovery project's \$10.5 million budget is to come from private funding and gifts in-kind such as Detroit Diesel's, S.A.I.L., Inc. is also seeking one to three major corporate sponsors who would fund \$3.5 million of the total cost.

For more information, contact S.A.I.L., Inc., 229 Washington Street, Bath, Maine 04530, (207) 443-6222.

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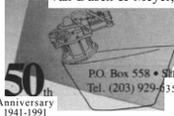
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**Marine Environment
Protection Emphasized By
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The vice president of marketing for Seattle-based Global Diving and Salvage Incorporated, **Mike Craig**, recently announced Global's formation of a new division to be known as Global Environmental. It will headquarter with Global Diving at their home office on Harbor Island.

The need for planning and preparation is clear from the new legislation passed by the Oregon and Washington legislatures. Both states recently placed new responsibilities on businesses engaged in the marine transport of oil. Accordingly, Global decided to put a strong business emphasis on providing the specialized skills and equipment needed to protect clients from the consequences of accident spills and pollution of the marine environment.

Global Environmental will emphasize protection with the latest in spill prevention methods. They will also provide a full spectrum of equipment and proven technology for controlling a spill.

**Free Literature
Offered By Forma-Kool
On Cooler Doors**

Forma-Kool Manufacturing, Inc., Mt. Clemens, Mich., a long time manufacturer of coolers and freezers, is offering free literature detailing its walk-in cooler/freezer replacement doors for the marine and other industries.

According to the brochure, Forma-Kool replacement doors are mounted on a metal-clad wood frame-work, and are available in a variety of finishes including aluminum, galvanized and stainless steel. Chrome plated hardware and seal-tight magnetic gasket assembly is included. A heated frame is standard on freezer models.

In addition to replacement door/jambs, Forma-Kool offers the following: energy saving strip curtains; replacement door accessories; and replacement hardware.

For a free copy of the literature detailing Forma-Kool replacement doors for walk-in coolers and freezers,

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Maritime Reporter/Engineering News

Navy Delivers Strategic Sealift Plan To Congress

The Navy recently delivered to Congress a long-awaited plan on how the Service intends to conduct its sealift program.

The Navy's strategic sealift implementation plan said it "would lead to a shipbuilding or major conversion program" with "its size, scope and mix determined by the MRS (mobility requirements study) Final Report." In the plan, the Navy also supports the efforts of the Maritime Administration to expand the ready reserve fleet by adding 104 roll-on/roll-off ships by 1994, and it said that in order to accomplish this, 21 ships must be purchased from the worldwide commercial market. The Navy, however, pointed out that "new construction or major conversion must be accomplished in U.S. shipyards."

Besides continually pushing the Navy to start a sealift program, Congress has been in a constant battle with the Office of the Secretary of Defense (OSD) over the issue of converting or buying existing foreign-owned and operated ships. OSD's position is that this is required because there are relatively no ships in the U.S. that would not require extensive and costly conversions. Under Secretary of Defense (Acquisition) **Donald Yockey** issued an acquisition decision memorandum (ADM) in mid-September that said three of the four options open to the Navy are the procurement or conversion of existing ships.

Both the House and Senate, however, have forbidden the Navy to spend appropriated funding in foreign shipyards. They believe OSD is trying to take the least costly route possible at the expense of the American shipbuilding industry.

According to the plan, the Navy intends to proceed with the first phase of the program before the mobility requirements study final report is completed. It is expected by year's end. In this phase, which will last approximately four months, the Navy will obtain and evaluate designs for two sealift ships. One design will be a large 24-knot roll-on/roll-off ship for conventional maritime prepositioning. The other ship, a smaller variant of the prepositioning ship, will be designed for standard military transport or possible commercial operation under build and charter agreements.

The Navy issued contracts for the concept designs in mid-September, shortly after Yockey released the ADM. Nine shipyards around the country received contracts. The design efforts could include variants of existing ships or ones now in design, the plan said.

Once the design studies are submitted to the Navy, the Service will begin the next phase by reviewing the design and establishing its baseline engineering design. After the Navy baseline design is completed, the shipyards will be awarded independent engineering design efforts.

The final phase is for ship construction.

The shipyards will compete for one contract "for central procurement of major or long lead material to achieve standardization and cost savings." The first ship is

expected to be delivered in 1996.

Throughout the course of the program, the Navy said that the Naval Sea Systems Command will also "utilize the expertise of the Maritime Administration and the Military Sealift Command to insure that commercial ship operational requirements are properly considered."

EGT Turbochargers Established—Formerly Napier Turbochargers

EGT Turbochargers Limited, formerly Napier Turbochargers Ltd., was recently established as a subsidiary company of European Gas Turbines, continuing to manufacture the range of Napier turbochargers and genuine Napier parts.

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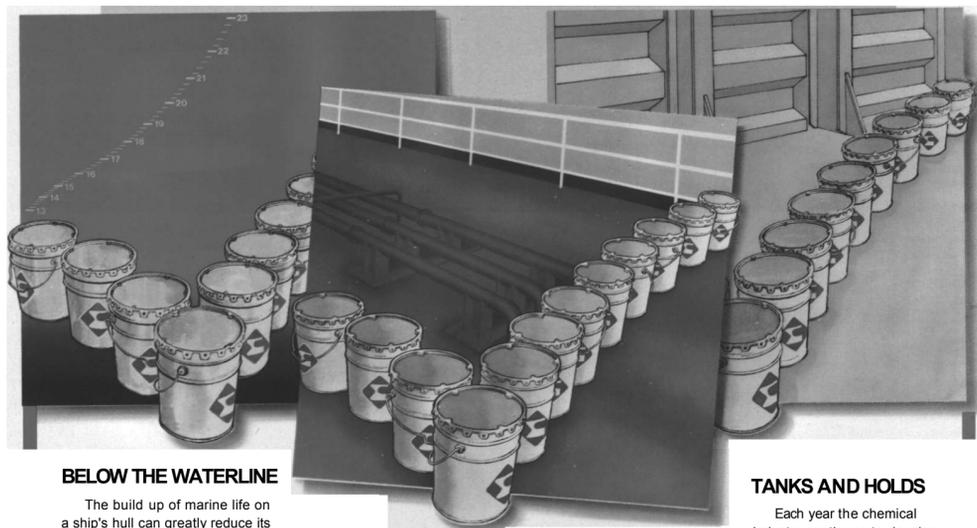
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The build up of marine life on a ship's hull can greatly reduce its operational efficiency. As a result of extensive research, Sigma now produces a comprehensive range of antifouling paint systems designed to prevent fouling, thereby minimising roughness and improving the hydrodynamic efficiency of the hull through the water.

The Sigmaplane line has four premium self-polishing antifouling, each suited to particular operational characteristics. The Sigma Pilot line is a contact leaching longlife antifouling system, while the Classic line offers traditional antifouling formulations providing ship owners with economical fouling prevention.

All three lines have an 'Ecol' version which complies with the latest environmental regulations.



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Boottops, topsides, superstructures and decks not only have to look good but must also withstand the rigours of impact, abrasion, weather and extremes of temperature.

Sigma Coatings has perfected a range of paints to meet all these requirements. Based on Sigma CM Coating, a chemically modified, high-build recoatable epoxy, the Sigma CM system provides excellent durability with unlimited overcoating intervals.

When used in conjunction with specialised coatings such as Sigma EP Multiguard and Sigma EP Glassflake, this remarkable system ensures that vessels look their best and perform to the highest possible standards.



TANKS AND HOLDS

Each year the chemical industry continues to develop more and more products which may need to be shipped in bulk or as parcels in chemical/product carriers.

Sigma Coatings is continually monitoring new products to ensure that it can offer the most suitable tankcoating system for every eventuality.

The 5 Sigma tankcoating systems, developed from an in-depth knowledge of owners' requirements, are designed to provide the perfect solution to every problem, from the transport of dry bulk foodstuffs and mild chemicals, to the constant shipment of highly aggressive chemical cargoes in a variety of sequences.

This specialised range of products, all of which are isocyanate-free, includes phenolic epoxies, optimally crosslinked epoxies, high-build epoxies, solvent-free epoxies and inorganic zinc silicates.



Comprehensive files on the Sigma Coatings specially developed for each area of a vessel are now available.



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THE RIGHT CHOICE

**'Stretched' Version
Of Nimitz Recommended
For Future Navy Carriers**

For the Navy to accommodate future carrier aircraft designs and combat increasingly potent threats to the carrier battle group, it must do one thing: build bigger aircraft carriers. Specifically, a "stretched" version of the current Nimitz class

carrier that would be between 125 feet to 400 feet longer. This is the conclusion reached by the Naval Studies Board after a year-long examination of future aircraft carrier technologies.

The board's report, titled "Carrier 21: Future Aircraft Carrier Technology," warned that this stretched Nimitz would not have enough added torpedo defenses to preclude additional active defenses, resulting in the total cost of the ship being up to 25 percent more than a current

Nimitz. The FY-90 defense authorization act directed the Navy to commission the study. The Naval Studies Board is part of the National Academy of Sciences.

Passive defensive measures needed include reduced radar signature to make targeting more difficult and greater resistance to and control of damage. "Greater resistance to under-keel torpedo damage is the most severe design requirement; it demands space and, thus,

affects ship layout, especially of magazines or ship size," the report said.

The "stretched" Nimitz carrier is one of four options the study board has given the Navy. The larger Nimitz provides the Navy with more room for change such as an air wing with larger, heavier aircraft having more range and payload capability. The "stretched" Nimitz carriers (125 feet larger than a current Nimitz) would cost roughly 10 percent more than the current version excluding the upgraded active defenses and some nonrecurring costs. The largest version—reaching 1,500 feet in length—would cost as much as 100 percent more than an extant Nimitz.

The other future carrier design options the study presented to the Navy are:

- An advanced Nimitz-type carrier within the Nimitz-size envelope. This is the least expensive option open to the Navy, with the price tag ranging from 10-15 percent more than a current Nimitz. The design would be changed to meet some of the more severe threats and to take advantage of new technologies.

- A large semisubmersible ship. This design offers the greatest opportunity for radar signature reduction. The study also said this ship may have the "greatest inherent damage resistance" of all the options. If this ship were to be built, it would need four times the power of a Nimitz carrier to achieve 25 knots. "This ship would represent a very long extrapolation from current experience with semisubmersibles, so that its design and development could be expected to be fraught with unknowns and the unexpected," the report said. These unknowns could lead this ship construction costs to be from three to four times more than a Nimitz.

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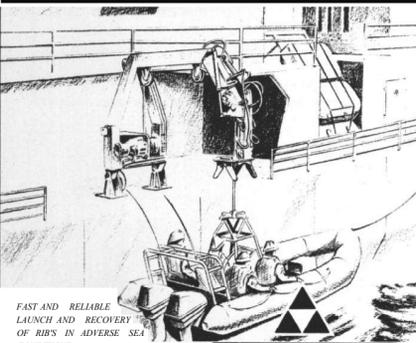
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**New Port Cost Guide
From INTERTANKO**

Tanker owners, operators and brokers can obtain swift access to the latest port cost figures by reference to a new guide from the International Association of Independent Tanker Owners (INTERTANKO).

"Disbursements for Tankers" provides essential information for use in voyage calculations before ships are fixed. The 1991 edition presents a considerable amount more information on port cost data than past editions. This year the volume provides nearly 2,400 actual disbursement figures and recent cost estimates received from tanker owners and hundreds of port agents, for calls of large and small tankers at 500 tanker ports and terminals around the world.

"Disbursements for Tankers 1991" is available at a cost of \$140 (half price for members and subscribers) from INTERTANKO, Gange-Rolvs gate 5, N-0273 Oslo 2, Norway; telephone: +47 2 440340; or fax: +47 2 563222.

Growth In Seaborne Iron Ore Trade Forecast In New Report

World steel output fell by 2 percent in 1990 and is expected to contract again in 1991 as the steel industries of Europe and the USA are hit by recession and economic restructuring. However, production is buoyant in Japan and other major Asian steel centers such as South Korea and Taiwan, thereby limiting any downturn in seaborne trade in raw materials. And as the world economy enters a new growth phase in 1992, steel industry activity should intensify worldwide, with growth in steel output, raw material demand and trade.

Expected stagnation of iron ore imports in the EC-12 and Japanese markets over the period to 1996 will be more than compensated for by requirements from the newly industrialized countries (or NICs), as well as a reorientation of East European imports in favor of Western suppliers.

With economic recovery next year and the commissioning of new steel-making capacity in the NICs and developing countries, 1992 is expected to herald the start of another period of steady growth in seaborne iron ore trade.

By 1996, the volume of iron ore in seaborne trade is expected to reach 373 million tons. In the past three years, seaborne coking coal trade has stabilized at around 160 million

tons per annum. However, growth is expected over the next five years with shipments climbing to 170 million tons in 1996.

Future needs for iron ore and coking coal are reviewed, region-by-region, against the background of longer-term trends in the pattern of steel production. Each country's import requirements in the period to 1996 are forecast by reference to the projected output of blast furnace pig iron production, iron ore feedstock requirements, coke demand and the likely indigenous supply (if any) of these materials. The 100-page report, "Global Prospects for Iron Ore and Coking Coal," from Drewry Shipping Consultants Ltd., then goes on to highlight prospective changes in the volume and direction of international seaborne trade through to 1996, quantifying tonnage shipments and commenting on supply issues and problems.

The role of transport costs in determining the FOB netback received by the exporter is also considered by comparing actual ship costs on selected routes with market prices.

Advanced Bow Thruster Efficiency Aided By Stator Screen From Shipwrights

An unusual new stator screen has been developed to significantly in-

crease the efficiency and power in bow thrusters. Harnessing the power from the water moved by the thruster's twin props is an advancement in bow thruster technology, now exclusive to the Twin Prop system manufactured by Shipwrights, Inc. of Framingham, Mass.

Most screens only keep potentially damaging debris from reaching the props. The screens, typically fabricated by the boatyard handling installation, are not an integral part of the system's design or function.

In the Twin Prop system, the stator screen is cast in nickel/bronze/aluminum at the factory. The screen not only keeps debris away from the props, but also plays an important part in producing the highly efficient level of thrust for which Twin Prop systems are well known.

For free literature giving more information,

Circle 63 on Reader Service Card

MMS Spare Parts Inventory And Planned Maintenance Systems Selected By Conoco

Under a contract recently awarded by Conoco, Inc. of Houston, Texas, Marine Management Systems (MMS) will implement their PC-based Spare Parts Inventory Management (SPIM) and Planned Maintenance (PMS) systems onboard Conoco's tanker Sentinel, according to an announcement by MMS vice president **Don Logan**.

The SPIM and PMS systems, which will also be implemented at Conoco's operations office in Houston, will enable Conoco's shipboard and shoreside personnel to increase control over shipboard spare parts inventory and to manage that inventory efficiently, while the PMX system will help reduce ship repair and downtime costs.

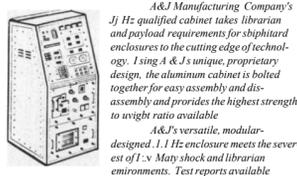
Metal Trades Receives \$661,418 Contract For Floating Crane Overhaul

Metal Trades, Inc., recently received a regular overhaul contract worth \$661,418 from the Supervisor of Shipbuilding, Conversion and Repair, Charleston, S.C., for the non-self-propelled floating crane YD-243

Detyens Shipyards Performing SRA On Navy Frigate

Detyens Shipyards, Inc., Mt. Pleasant, S.C., is performing a selected restricted availability (SRA) on the U.S. Navy frigate USS Halyburton (FFG-40) under a \$268,417 contract.

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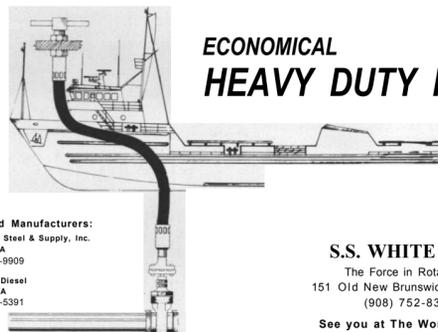
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North American Marine Jet Names Phillips President



Harold L. Phillips

North American Marine Jet, Inc., Benton, Ark., recently announced that **Harold L. Phillips** has been named president of the company. Mr. Phillips has served as a consultant to various companies since 1988, concentrating on North American markets and overseas operations in South America and Australia. **Leonard Hill**, owner and founder of North American Marine Jet, remains company chairman and chief executive officer.

Canada Metal Offers Free Brochure On 'Martyr' Commercial Anodes

Canada Metal Company Limited, New Westminster, B.C., has published a free, eight-page brochure on "Martyr" commercial anodes for complete and economical cathodic protection from electrolytic corrosion of vessels, pleasure craft, piers, offshore drilling platforms, drydocks, retaining walls and oceanographic equipment.

Martyr offers your choice of zinc or aluminum anodes, engineered to meet or exceed the most stringent commercial and military specifications.

The brochure, which is illustrated with photos and drawings, contains charts listing information on dimensions, weight, type of material, composition, specifications, etc.

'K' Line To Build Five New Container Vessels

"K" Line has contracted to build five new 3,500-TEU container vessels to augment and expand the line's already extensive trans-Pacific service. Scheduled for launching in late 1992 through mid-1993, they will be used to expand "K" Line's Pacific Southwest service between Pacific Rim ports and the West Coast of North America.

Recent market developments have indicated that the future potential for this trade will continue to be strong. The economic growth of many Asian nations will lead to increased westbound cargo, adding to the steady growth of existing trade between Japan, Asia and North America.

November, 1991

Crowley Appoints Larkin To Head National Sales For Liner Services

Francis E. Larkin has been promoted to vice president, national sales, for Crowley Maritime Corporation's Liner Services Group. He reports to **John Hourihan**, vice president and general manager,

sales and marketing, who announced the appointment.

In his new position, which is effective immediately, Mr. Larkin is responsible for national sales activity in the United States on behalf of the services provided by several Crowley companies between the U.S., South America, Central America, and the Caribbean, including Puerto Rico.

NASSCO Receives Deactivation Contract For USS Midway

National Steel & Shipbuilding Co. (NASSCO), San Diego, Calif., recently received a \$855,635 contract for the deactivation of the aircraft carrier USS Midway (CV-41).



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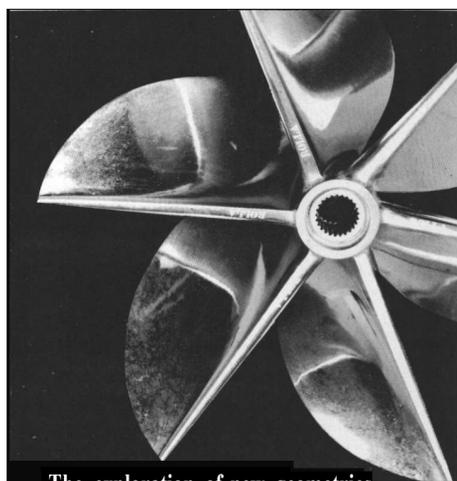
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The exploration of new geometries sometimes leads to the discovery of new techniques and applications. Talent then becomes the important factor so that innovation is given direction to result in usefulness, not triviality. In surface piercing propellers, for example, advanced duplex stainless steels benefited from unique production expertise in large investment castings making the REXP90/91 the world's largest investment cast propeller series possible. At the forefront of such achievements you find a Swiss new technology firm. Its name stands for innovation you can depend on.

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Exceptional target detection is assured with the 2800's by a combination of Furuno's exclusive low noise microwave integrated circuit receiver, matched pulse lengths and repetition rates, echo averaging and stretch, with full 15-level signal quantization. This performance package assures detection of even the weakest targets in the worst conditions of clutter.

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These Furuno radars have superb 28" raster scan displays with 1024 x 1024 pixel resolution for radar images that are crisp, bright and easy to view day or night.

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On-screen data readouts include range, bearing, course, speed, CPA, TCPA, BCR (bow crossing range), and BCT for up to 3 selected targets, as well as own ship course and speed.

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Boats & Barges

Trinity Shipyard Delivers Detroit Diesel-Powered Crewboat For Use in Indonesia



The crewboat Osco Star 1 is now working for Arco Oil in Indonesia.

Trinity Industries, Inc. subsidiary, Aluminum Boats, Inc., recently delivered the all-aluminum, 85-foot-long by 20-foot-beam crewboat Osco Star 1 to P.T. Osco Utama, Jakarta, Indonesia.

The crewboat is powered by two Detroit Diesel 12V71 turbocharged diesel engines developing 510 hp each at 2,100 rpm. They drive 33-inch by 28.5-inch four-blade propellers

through reverse/reduction gears with a ratio of 2.0:1.

Two 40-kw diesel generators driven by two Detroit Diesel 3-71 engines provide electrical power. Steering with stations fore and aft in the pilothouse is electrohydraulic.

The Osco Star 1 can carry 15 passengers, five crew members, and has berths for eight people. It has a

galley, dining area, and is equipped with a clothes washer/dryer.

The crewboat can carry 4,200 gallons of fuel, 600 gallons of fresh water, 60 gallons of lube oil, and 3,200 gallons of ballast water. It has a flush, 39-foot by 16-foot aft deck providing 624 square feet of clear area for a deck load of up to 20 long tons.

A water-cooled air conditioning and heating system serves the crew's quarters, galley, passenger area and pilothouse.

The Osco Star 1 is certified by the American Bureau of Shipping, A-I Maltese Cross.

Aluminum Boats, Inc., Crown Point, La., is one of seven shipbuilding companies in the Trinity Group, Gulfport, Miss., which is owned by Trinity Industries Inc. of Dallas, Texas.

Other companies in the group are Halter Marine, Inc., Moss Point Marine, Inc., Equitable Shipyards, Inc., Gretna Machine and Iron Works, Inc., HBC Barge, Inc., and Trinity-Beaumont.

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

Circle 56 on Reader Service Card

Port Of South Louisiana Leads Grain Industry Economic Impact

The grain industry is the core of the port business in the Lower Mississippi River area, generating \$1.7 billion of spending in the area and over 7,300 jobs according to a study recently conducted by the Port of South Louisiana.

Louisiana's Lower Mississippi River ports handle more tons of cargo than any other port area in the world. The main component of that cargo is grain. Statistics compiled by the U.S. Army Corps of Engineers show that the Louisiana Megaport complex handled 374 mil-

lion tons of total cargo in 1989 and 44 percent of that cargo was grain, including corn, wheat, soybeans, rice, sorghum, barley, rye, oats, flax seed, flour, semolina, animal feed and other grain products.

The total value of Megaport grain exports is between \$11 billion and \$13 billion per year, providing thousands of jobs for American citizens employed in grain production, handling and shipping.

The grain industry has a substantial economic impact on the River Corridor and on the State of Louisiana. In 1989, the grain industry and the related maritime industry produced \$1.7 billion of direct spending and \$2.2 billion of total spending in the River Corridor area.

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Both the above courses are ideal for those looking to gain professional qualifications in the growing field of maritime engineering. Each offers superb facilities supporting experienced teaching staff.

The Maritime Engineering degree is more general offering students the choice of elective subjects, while the Naval Architecture course is specifically oriented toward vessel design. The courses run for four years, and have a common first year.

To qualify for entry, you will need to have, or be completing an Australian Higher School Certificate (or equivalent) including English, Mathematics (with calculus), Physics, and preferably Chemistry.

More details are available from:

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First National Monument Honoring Merchant Marine Unveiled In New York City

The unveiling of the first monument honoring American merchant seamen who perished in all wars as well as in peacetime was held on October 9, 1991, at a waterfront ceremony in lower Manhattan. More than 1,000 people came to the dedication for the American

Merchant Mariners' Memorial, a steel and bronze statue affixed to a breakwater offshore from Manhattan's Battery Park. The statue portrays three seamen in a lifeboat calling for help, with a fourth figure in the water nearby.

The dedication ceremony was the culmination of a 15-year quest by a group of activists who formed the American Merchant Mariners' Memorial Inc., raised funds, commissioned the sculpture, and lobbied the New York City and federal gov-

ernments to give wartime merchant seamen the recognition routinely given to veterans of the armed services.

The 7-1/2-foot-high statue of four sailors is based on an actual photograph taken by a sailor on a German submarine in World War II. The German vessel had just sunk an American tanker, the S/S Muskogee, in North Atlantic waters. After photographing the American sailors clinging to their raft, the submarine left them there to die.

The monument, created by sculptor **Marison Escobar** from the photograph, exploits the fact that its site is on a breakwater some 30 feet offshore. One of the four sailors is partially submerged. As the tide drops twice each day, he appears to come up out of the water, as a shipmate in the lifeboat reaches out to him.

Dignitaries attending the ceremony included Rear Adm. **Thomas A. King**, president of the non-profit memorial corporation and past superintendent of the U.S. Merchant Marine Academy; **Lane Kirkland**, president of the AFL-CIO and chairman of the memorial corporation; and **Warren Leback**, U.S. maritime administrator.

Mr. **Kirkland** called the monument "a fitting remembrance dedicated to those merchant seamen who gave their lives in defense of the love of democracy that Americans share with the citizens of other free nations around the world."

The dedication program concluded with a reception at the Whitehall Club in New York City.

More than 6,775 U.S. civilian seafarers lost their lives during World War II as a result of enemy action. The 300,000 merchant mariners who served during that conflict were awarded veteran status by the U.S. Government in 1988.

Port Of Seattle Releases Ambitious Expansion Plan

According to a container plan recently released, container volume at the Port of Seattle is rising rapidly enough that the port will have to invest an average of \$30 million a year in new and expanded terminals.

The new container plan forecasts that Seattle's volume will rise from just over 1 million 20-foot equivalent units in 1990 to between 1.56 million and 1.89 million TEU's by the end of the decade. Box counts probably would rise to 2.08 million to 2.53 million TEU's by the year 2010, the forecast says.

The lower end of the range stems from projections using Seattle's current market share. The higher number assumes that Puget Sound increases its share of the market by 5 percent.

The final draft of the plan calls for expansion of existing terminals and purchases of more container space in three areas—the Elliott Bay waterfront just south of downtown Seattle, on Harbor Island and in West Seattle.

Combat Stores Ship Undergoing Restricted Availability In Norfolk

The combat stores ship USNS Saturn (T-AFS-10) is undergoing a restricted availability (RAV) at Marine Hydraulics International, Inc., in Norfolk, Va., under a \$1.06 million contract.

HALEY MARINE GEARS

Versatility Performance

MARINE GEARS, INC. designs and builds an outstanding line of HALEY marine reverse reduction gears in the 1200-4000 HP range with engine RPM's up to 1800. We operate under the HALEY "TOTAL PACKAGE" concept, with all machining, gear cutting, case fabrication and clutch manufacture, in house, on our own premises. No other gear manufacturer in the U.S.A. supports the user with all in-house capability. The "TOTAL PACKAGE" begins with an engineering philosophy of always giving 100% towards meeting the customers most demanding specifications, even if it requires special case designs and, many times, special gear configurations. Cases are manufactured in our own fabrication shop after thorough design analysis of the case sections. Our conservative ratings standards and craftsmanship have earned us the AMERICAN GEAR MANUFACTURERS ASSOCIATION certified manufacturer status.

HALEY gear cutting capability covers the total range of modern gear technology. Our new "SKIVING" system of hard finishing gears allows the highest useable stresses on carburized and hardened gear teeth. Our large hobbing machines can produce both single and double helical gears. The new hard gear finishing department is now equipped with grinding equipment capable of hard finishing gears up to a quality level of Q12. This gear cutting ability combined with the highest quality bearings and shafts help complete the "TOTAL PACKAGE", a gear we proudly stand behind.

The HALEY marine gear line is available in three series: THE FLYWHEEL MOUNTED CLUTCH, which features the large torsionally resilient clutch serving as both a coupling and a clutch. The GEAR MOUNTED CLUTCH, which allows clutches to be mounted on the free standing gear unit. Highly resilient torsional couplings may then be mounted between engine flywheel and gear input shaft. Finally the RI SERIES (REVERSING IN-LINE) gives very large reverse reduction ratios and keeps the engine crankshaft and propeller shaft in the same operating plane. All HALEY gears feature HALEY clutches with superior torque bar, friction material and air gland features. Marine Gears, Inc. also offers top service personnel ready to solve your gear related problems, 24 hours a day, 7 days a week.

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Volvo Penta Relocates Executive Offices

Volvo Penta of America recently announced plans to move its executive offices of a new 23,000-square-foot corporate office complex presently under construction at a site adjacent to its manufacturing facility in Chesapeake, Va. Scheduled for early 1992, the move will centralize all key segments of the organization in order to increase operating efficiencies and reduce overall costs.

Volvo Penta of America is also extending its commitment to the U.S. marine industry through increases in U.S. sourced components and increased domestic production capacity at its Chesapeake facility. As a result, Volvo Penta plans on increasing the number of production employees and anticipates the addition of many new employees at the company's domestic vendors.

For more information and free literature on Volvo Penta marine diesel engines,

Circle 15 on Reader Service Card

Aqua Signal Introduces Powerful Searchlights For Merchant Ships

Aqua Signal AG of Bremen, Germany, has introduced a completely new range of powerful searchlights. With these, Aqua Signal, an international leader in the design and manufacture of marine lighting systems and electronics, now offers a complete program satisfying all marine illumination requirements.

Manufactured by Astralux, Aqua Signal's British subsidiary, the search lights have a wide range of applications and are well suited for use aboard merchant ships of any type and size, research and fishing vessels, tugs and offshore supply ships as well as shore-based security facilities.

For more information and free literature from Aqua Signal,

Circle 12 on Reader Service Card

Hall Toledo Offers Free Literature On Valve Seat Grinders And Equipment

Hall Toledo, Maumee, Ohio, makers of fine engine rebuilding tools and equipment, is offering free literature on the heavy-duty eccentric valve seat grinders and equipment marketed by the company.

A full range of pilots and grinding wheels is available to cover valve seat grinding on all engines. In addition, repair parts are available for all Hall-Toledo equipment, and a rebuilding service is also offered.

For further information and free literature from Hall Toledo,

Circle 26 on Reader Service Card

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SCI Gets Go-Ahead To Build Nine Ships In South Korea

The New Delhi Government has given the go-ahead to the Shipping Corporation of India (SCI) to build nine new ships—six 45,000-dwt product tankers and three cellular container vessels—in South Korea at a total cost of \$396 million.

Originally, SCI wanted to build six of each type, but had to scale down its containership order because of India's shortage of foreign exchange.

Worth about \$46 million each, the product tankers are to be constructed at Daewoo shipyard in South Korea. The three \$44 million containerships, each with a capacity of 1,450 TEU, went to Hyundai.

The vessels, all part of SCI's eighth investment plan, are due for

delivery in 1993 and 1994.

The owner wants to acquire almost 130 new ships with an estimated tonnage of 4.86 million dwt over the course of the five-year plan.

The company's initial requirement, in addition to the vessels just sanctioned, is for six 28,000-dwt product/edible oil carriers and three 87,000-dwt and six 140,000-dwt crude carriers. Already ordered in Indian shipyards and in Spain and South Korea are a further 13 ships.



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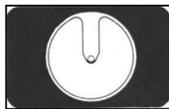
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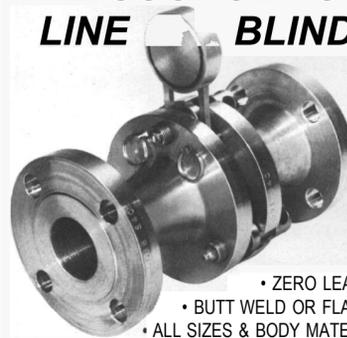
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Barge Rates Surge As Demand Rises, Water Levels Fall

In response to increased demand and low-water concerns on the Mississippi River, barge rates have jumped to their highest levels in two years.

The rates charged to shippers are expected to continue firm through the remainder of the harvest, which may push a small amount of grain to railroads and may motivate some grain merchandisers to hold onto their grain to await possibly lower barge costs. **Clint Odell**, president of Cargo Carriers Inc. in Minneapolis, Minn., said, "The harvest pressure will tend to keep rates up. We'll have our ups and downs, but I think overall rates will stay pretty firm through the harvest."

USCG Developing Rules Requiring Vessels To Respond To Oil Spills

Regulations mandated by Congress in the Oil Pollution Act of 1990 to minimize the impact of oil spills include the requirements that all domestic and foreign tanker-type vessels operating in U.S. waters have onboard oil-spill-removal equipment as well as an oil-spill-response plan. In an advanced notice of proposed

rule-making, the U.S. Coast Guard is asking for public comment on the development of such regulations. Each vessel's response plan would have to address a worst-case spill. In addition, the vessel's owner and operator would be required to assure the availability of both personnel and equipment necessary to respond to the discharge of the vessel's entire cargo in adverse weather conditions.

After February 18, 1993, a vessel would not be allowed to handle, store or transport oil unless the owner or

operator had submitted a response plan to the Coast Guard for approval. A vessel could continue to operate for two years pending approval of its plan if the owner or operator certifies that adequate private personnel are available to respond to a worst-case spill. The Coast Guard also invites comment on the type, quantity and capacity of on-board oil-spill cleanup equipment the vessels must carry. The regulations

being developed would provide for the periodic inspection of the equipment and establishment of inspection standards. Any comment on the proposed regulations should be mailed to the Executive Secretary, Marine Safety Council, G-LRA-2/3406, U.S. Coast Guard Headquarters, 2100 Second Street, SW, Washington, D.C., 20593-0001. For additional information, call (202) 267-1477.

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\$532,350 Overhaul On Landing Craft At Jacksonville Shipyards

Jacksonville Shipyards, Bellinger Division, Jacksonville, Fla., recently received a \$532,350 contract from the Supervisor of Shipbuilding, Conversion and Repair, Jacksonville, Fla., for the regular overhaul of the mechanical landing craft LCM-8.

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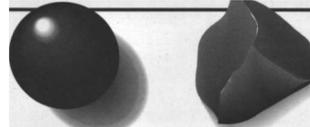
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MSRC To Be Fully Operational In 18 Months

A vice president of the Marine Spill Response Corporation (MSRC) recently told the 13th World Petroleum Congress that his organization plans to be fully operational within the next 18 months.

At a session devoted to environment and health matters, G. Stephen Duca described the mission and structure of MSRC.

Mr. Duca told the gathering that MSRC will operate from five regional response centers, each supported by several strategically placed equipment sites, and will become the nation's largest spill response and cleanup organization.

Funding for MSRC, he said, will come from the Marine Preservation Association (MPA), "an organization comprised of oil companies, pipeline companies, utility companies and the shippers and receivers of oil." He added that MPA will have no control over MSRC operations.

According to Mr. Duca, MSRC's five-year costs for operations, capital equipment, research and development are estimated at more than \$900 million.

With regard to his organization's mission, Mr. Duca said that MSRC, under the direction of the U.S. Coast Guard, will provide a best-effort response to cleaning up the spills that are beyond the capacity of the local response organizations. He added that each of the regional centers,

which will be located in the New York/New Jersey area, the Miami area of south Florida, in Lake Charles, La., Port Hueneme in southern California, and in the Seattle, Wash., area, is being designed to provide this best effort response to spills roughly the size of the Alaska spill.

Mr. Duca pointed out that under U.S. federal law, the responder to an oil spill has limited immunity. Under some state laws, however, the responder is not provided this limited immunity. He said that MSRC is currently seeking state liability standards that would be similar to those of the federal government because an oil spill responder must act decisively in a dynamic emergency environment.

Garvin To Receive API's Highest Award At Annual Meeting In Houston

Clifton C. Garvin Jr., retired board chairman and chief executive officer of Exxon Corporation, will receive the highest award of the American Petroleum Institute, the Gold Medal for Distinguished Achievement, at the API annual meeting in Houston, Texas, November 17-19.

Mr. Garvin will receive the medal during the meeting's second general session on Tuesday morning, November 19, in the ballroom of the Hyatt Regency Hotel.

The Gold Medal for Distinguished Achievement has been awarded annually since 1946. To be eligible for consideration, a candidate must be a living person who has "made substantial contributions to the arts and sciences of the petroleum industry, its human relations, its business practices, and its organization, when such contributions have enabled the industry to serve better the public welfare."

A native Virginian, Mr. Garvin holds bachelor and master degrees in chemical engineering from Virginia Polytechnic Institute. He joined what is now Exxon Corporation in 1947. In 1968, he was named to the board of directors. Four years later, he was elected president. In 1975, he was named chairman and chief executive, posts he held until his retirement in 1986.

Canadian Coast Guard Representative Heads Canadian Ports Group

Don Lester, Regional Manager, Harbors and Ports Directorate, Canadian Coast Guard, Newfoundland Region, is the new president of the Canadian Port and Harbor Association. He takes over from Jean-Maurice Gaudreau, general manager, Port of Sept-Îles, Quebec.

Mr. Lester was elected to the top post of the Canadian ports group at its 33rd Annual Meeting held in Sept-Îles.

Energy Policies Will Determine Future Petroleum Imports

The president of the American Petroleum Institute recently said that the future level of petroleum imports into the U.S. will be heavily influenced by the energy and environmental policies pursued by the U.S. Government.

Addressing a session at the 13th World Petroleum Congress in Buenos Aires, Argentina, Charles J. DiBona said that most experts expect U.S. oil consumption to grow domestic oil production to fall, and imports to increase in the coming decade. He cited recent studies by the U.S. Department of Energy which projected an import level equal to between 61 and 66 percent of consumption in the year 2000.

By contrast, the current U.S. import level is slightly below 50 percent.

Mr. DiBona noted that the U.S. has a large resource base, 39 to 82 billion barrels of undiscovered recoverable oil and natural gas liquids, with a mean estimate of 58 billion barrels; and 307 to 507 trillion cubic feet of undiscovered recoverable natural gas, with a mean estimate of 399 trillion cubic feet.

Much of these resources, Mr. DiBona told the gathering, are contained in onshore and offshore lands owned or managed by the Federal Government.

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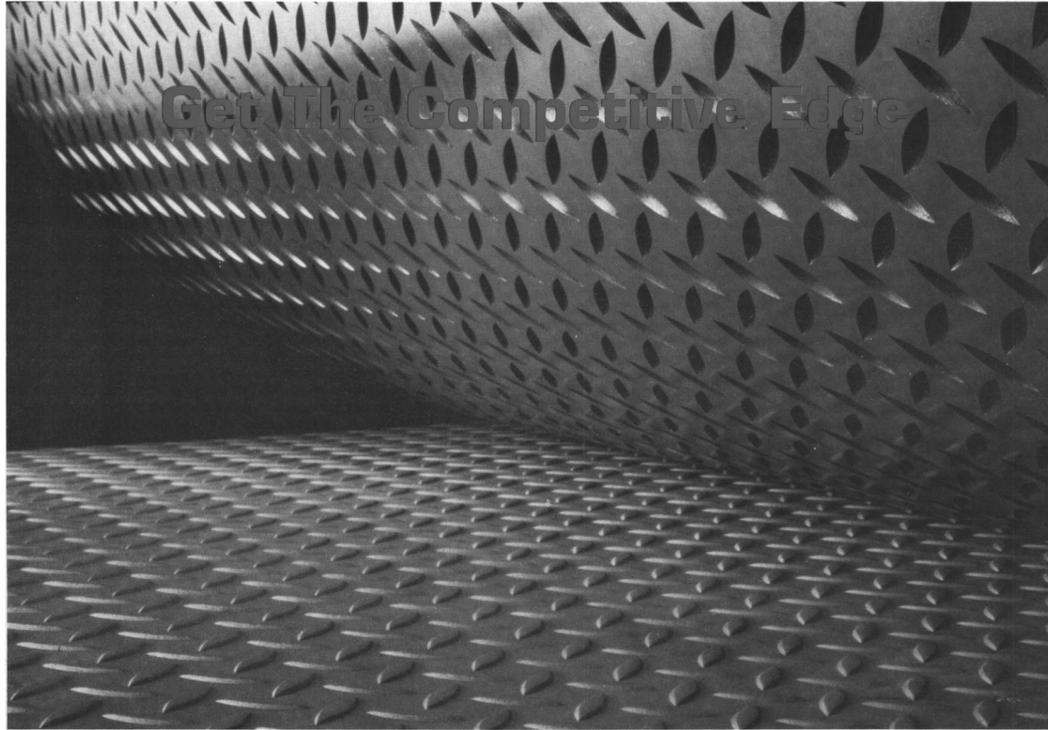
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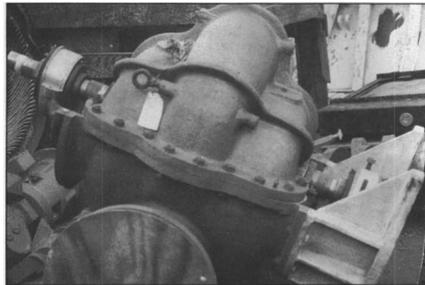
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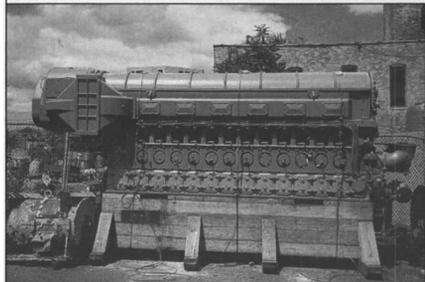
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NEW Economizer Elements manufacturerd by B&W to fit high pressure boilers on most vessels. Only (25) left. New Price: \$5,500/each.
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(2) NEW 36" Steel Butterfly Valves Flanged Type with Actuators. New Price: \$20,000/each.
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NEW Set of Nigata Tank Gauges for 50,000 Ton Tankers, complete with spare parts. New Price: \$180,000.
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(1) NEW Dunham Bush 5-Ton Marine Pac Refrigeration Unit, complete with Condenser and Motor. New Price: \$3,500.
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(4) Used in Excellent Condition Carrier Model 5F60 Refrigeration Units, complete with 25hp 440V Motors, bronze and cupro nickel Condenser, Marine Type, fabricated frame. New Price: \$18,500/each.
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(4) Used in Excellent Condition 100-Ton York Refrigeration or Air Conditioning Units, complete with 125hp 440V AC Motors and Condensers, cupro nickel and bronze, York Marine Pac. New Price: \$55,000/each.
Our Price: \$6,900/each.

Hundreds of New Valves in stock from 24" to 1/4" at prices 50% less than wholesale.

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(2) 700 KW DeLaval Turbogenerators, in Excellent Condition, Equal-to-New 440-580# Steam 800', 700KW 440V Generator. New Price: \$250,000.
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(1) Brand New Warren 8x6 All Bronze Fire or Cargo Pump 2500 GPM at 125psi driven by 300hp 1750rpm Reliance Motor. New Price: \$44,000.
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Aker And Kiewit Form Partnership To Serve Offshore Industry

Aker a.s. and Peter Kiewit Sons, Inc., recently announced their agreement to form Aker Gulf Marine, a Texas partnership. Aker Gulf Marine will offer fabrication and construction services to the offshore oil and gas industry. Aker will own 51 percent and Kiewit 49 percent of the new company. Aker Gulf Marine will take over all of Gulf Marine Fabricators, Inc.'s (GMF) operations and assets. Current plant facilities are located at Aransas Pass and Ingleside, both near Corpus Christi, Texas.

GMF, with approximately \$75 million in annual revenues, employs around 700 people in the Corpus Christi area, and is a leading fabricator of deepwater steel jackets. GMF built Bullwinkle, one of the world's largest steel jackets for Shell's Green Canyon lease in the Gulf of Mexico and a jacket for BP Exploration's Mississippi Canyon 109 project. GMF is currently constructing several modules for Exxon's Harmony and Heritage projects.

Kiewit is one of the largest U.S. construction and mining companies. Aker, a major international offshore group with headquarters in Norway, is also the world leader in design and construction of offshore concrete platforms and will furnish its technology and know-how to the new company. Aker employs more than 9,000 people in its oil and gas-related businesses and has operations in the United Kingdom and Canada. Aker also owns the offshore engineering company, Aker Omega, Inc., located in Houston, Texas.

Aker Gulf Marine, with the support of Aker and Kiewit, will continue to offer a broad range of products and services to its clients, including new and competitive products for challenging deepwater development projects. For floating production systems, the company offers alternative floaters of reinforced concrete as a competitive alternative to steel floaters from the Far East and Europe.

China Reports Record Volume In Overseas Shipbuilding Orders

Record volume in overseas shipbuilding orders of 430,000-dwt so far this year has been reported by China, and more are expected to come.

Earnings of \$300 million from ship exports this year is forecast by China State Shipbuilding Corp. This would be \$100 million more than in 1990. The state-owned company reported exporting 14 vessels in the first half. It received orders, domestic and foreign, for 720,000 dwt in the first six months.

Contracts are expected to be signed before the end of the year with overseas companies for a fur-

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ther 200,000 to 300,000 dwt.

In what is described as the largest single order with a Chinese yard, the Dalian yard in northeastern Liaoning province, one of the company's units, signed with Exmar of Belgium recently for two 150,000-dwt bulk carriers.

China State Shipbuilding had orders on hand for more than 3 million dwt of vessels at the end of last year. An official said that with the additions this year, its facilities should be full well into 1993.

Zebra Mussel Infestation Spreads Beyond Great Lakes

New alarms have been set off by the spread of a mussel infestation that had wreaked havoc in the Great Lakes.

The zebra mussel is spreading faster than had been anticipated. Once they have established colonies, it is virtually impossible to eliminate them. **Carlos M. Fetterolf Jr.**, executive secretary of the Great Lakes Fishery Commission, said.

Mr. Donahue said the zebra mussel infestation could result in control costs approaching \$4 billion for the Great Lakes alone during the 1990s.

The mollusks, which attach themselves to underwater structures, pose a particular threat to water intake pipes for electric power plants, factories and municipal water and wastewater treatment plants.

Also at risk are ships. Two Coast Guard vessels had to have emergency repair work this year after zebra mussels were found covering key parts of their cooling systems.

The zebra mussel's ability to filter out microscopic plankton and algae endangers the food chain for the Great Lakes' \$44 billion fishing industries, and it may now threaten fish habitat throughout the nation's river system.

The inch-long mussel, which was brought to the Great Lakes in the ballast water of oceangoing ships from Soviet ports in the mid-1980s, is transported to the inland river system of the Midwest and East Coast by barges and recreational boats.

MSC Charters Four Barge-Carrying Vessels

Four barge-carrying ships that will be used as supply depots in the Navy's afloat prepositioning force have been chartered by the Military Sealift Command.

The new contracts for the lighter-boardship, or "lash," vessels essentially renew charters with two companies that have been furnishing lash vessels for prepositioning off the Island of Diego Garcia in the Indian Ocean. The charters are worth nearly \$210 million.

The vessels will be delivered to the Navy later this year or early in 1992.

A subsidiary of American Automar, Washington, will receive \$34.8 million for the charter of the American Kestrel.

Either the Green Island or the Green Valley will be supplied by Central Gulf Lines Inc., New Orleans, for \$39.9 million. It will also charter the Austral Rainbow for \$32.5 million and the Green Harbour for \$39.4 million.



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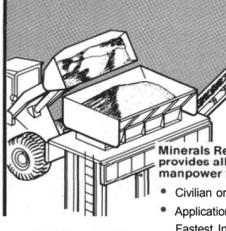
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Justice Department Softens Opposition To Gaming Bill

The U.S. Justice Department has eased its opposition to a bill in Congress that would ban gaming on foreign-flag cruises to nowhere and, for the first time, permit casinos on U.S.-flag cruise ships.

Introduced by Representative **Gene Taylor** of Mississippi, the bill would annul the U.S. Gambling Ship Act which prevents U.S. citizens and

residents from owning, operating or holding an interest in a gambling ship unless the vessel operates solely in U.S. waters.

The U.S. Gambling Devices Act which prohibits the transport of gaming devices in U.S. interstate or foreign commerce would also be annulled.

Capt. **Warren Leback**, MarAd administrator, provided support to the bill, stating that it is possible that revenues from onboard gambling could generate new investment

in the U.S.-flag cruising and passenger transport markets.

James Henry, Transportation Institute president, added that the Gambling Ship Act must be repealed if there is to be any substantial investment in U.S.-flag assets. Mr. **Taylor** insisted that if a foreign-built, foreign-flagged and foreign-crewed vessel can attract passengers in Florida, California, or Washington for a voyage on the high seas and offer those passengers casino and electronic gaming as entertain-

ment, then a U.S.-built and flagged vessel with an American crew should be allowed to offer the same.

Charles Liberis, Europa Cruises Corporation president, asked that the bill be amended to allow U.S.-built but foreign-flagged ships five years in which to dispose of the over-seas-built vessels and replace them with U.S.-built ships or to flag out existing tonnage to the U.S. register.

World Fleet Needs Between 25 And 30 More VLCCs, Poten Report Says

To handle the projected level of Middle East crude exports to the Far East, between 25 and 30 more VLCCs will need to be added to the world fleet between now and 1993, according to a report of the New York shipbroking and consulting firm Poten & Partners Inc.

The VLCCs will be needed primarily because of continued economic growth in Japan, South Korea and Taiwan, Poten predicts, which will lead to greater energy consumption and increased demand for oil.

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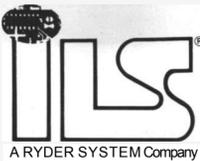
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~2800L-DECK MACHINERY—Cargo Handling Equipment
All Set Marine Lashing AB, P.O. Box 14112, S-16114 Bromma, SWEDEN
Braden Carco Gearmatic, P.O. Box 547, Broken Arrow, OK 74013
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150
Markey Machinery Co., Inc., P.O. Box 24788, Seattle, WA 98124-0788
Morgan Crane Company, Inc., 1300 Normandy Place, Santa Ana, CA 92705
McEroy Machine & Mfg. Co., Inc., P.O. Box 454, Bilozi MS 39535-454
Seattle Crane & Equipment Co., Inc., 4403 20th Street East, File, WA 98424
Skookum/Rope Master, P.O. Box 280, Hubbard, OR 97032

Willem Pot b.v., P.O. Box 29102, 3001 GC Rotterdam, The Netherlands

DECKS

Boatlife, 205 Sweet Hollow Road, Old Bethpage, NY 11804

DIESEL ACCESSORIES

Coltec Industries Fairbanks Morse Engine Div. 701 Lawton Ave., Beloit, WI 53511
Diesel America Inc., 5217 River Rd., New Orleans LA 70123
Gearhardt's Inc., P.O. Box 10161, Jefferson, LA 70181
General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, MA 02360
Giro-Engineering Ltd., 370 Brook Lane, Salisbury Hampshire, ENGLAND SO3 6ZA
Kiene Diesel Accessories, 325 S. Fairbanks St., P.O. Box 386, Addison IL 60101
Pow-R-Quik, 5518 Mitchelldale, Houston, TX 77092

DIESEL ENGINE—Spare Parts & Repair

Aalborg Gisen (Miami) Inc., 1539 SW 21st Avenue, Ft. Lauderdale, FL 33312
Caltrax Marine Diesel B. V., Frankrijkweg 11, 4455 TR Nieuwedorp (Vlissingen Oost), THE NETHERLANDS
Caterpillar, Inc., Engine Div., P.O. Box 610, Mossville, IL 61552-0610
Coltec Industries, Parts & Service Div., 701 Lawton Ave., Beloit, WI 53511
Cummins Engine Company, Mail Code 60011, Box 3005, Columbus, IN 47202-3005
Global Maritime Services, 247 SW 33 Court, Ft. Lauderdale, FL 33315
Goltan Marine Company Inc., 160 Van Brunt Street, Brooklyn, NY 11231
Hatch & Kirk, 5111 Leary Avenue NW, Seattle, WA 98107
KHD Canada, Inc., 4420 Garand, Ville St-Laurent, Quebec, CANADA H4R 2A3
Kim Hotstart Mfg Co., E 5724 Broadway Ave, P.O. Box 42, Spokane WA 99210
MAN B&W Diesel GmbH, Stadt Bachstrasse 1, D-8900 Augsburg 1, GERMANY
MAN B&W Diesel, 17 State Street, New York, NY 10004
MTU of North America, 10450 Corporate Drive, Houston, TX 77478
Markisches Werk GmbH, P.O. Box 1442, D-5884 Halver 1, GERMANY
Pacific Rim Diesel, 3842 W. Marginal Way SW, Seattle, WA 98106
Paxman Diesels, P.O. Box 6, Paxman Works, Colchester, Essex, CO12HW, ENGLAND;
Paxman Diesels USA, (A Div. of Ruston Gas Turbines, Inc.), 15950 Park Row, Houston, TX 77064
S.E.M.T. Pielstick, 2 Quai de Seine, Saint Denis, Paris, FRANCE 93203
Sulzer Brothers Inc., 200 Park Ave., New York, N.Y. 10166

DIVINGS, SALVAGE

H. J. Merrihue, P.O. Box 23123, New Orleans LA 70183
Mildon Marine Services, Inc., P.O. Box 3221, Terminal Island, CA 90731
Sea-Side Diving, 28612 Harper Ave., St. Clair Shores, MI 48081

DRYDOCKS—Design

Conrad Industries, 1501 Front Street, P.O. Box 790, Morgan City, LA 70381
Ferrostaal AG, D-4300 ESSEN, Germany, Hohenzollernstrasse 24
Marine Design Services, P.O. Box 928, Bonita CA 92002
MAN DWH Stearns, P.O. B. 110240, D-4200Bberhausen 11, GERMANY

ELECTRICAL EQUIPMENT

L. F. Gaubert & Co., Inc., P.O. Box 50500, New Orleans LA 70150
MMC International, 60 Inp Dr., Inwood NY 11696
P. J. Plishner Marine/Radio Research Instrument Co., 584 N. Main St., Waterbury, CT 06704-3506
SDT Technologies, 13500 Roosevelt Blvd., Philadelphia PA 19116
Universat Marine Electric Co., Inc., P.O. Box 266-923, Houston, TX 77027-6923

ELECTRONIC DISPLAY

Scandinavian Micro Systems, P.O. Box 155, N-1411, Kolbotn, NORWAY

ELECTRONIC ENCLOSURES

A&J Manufacturing, 14131 Franklin Ave., Tustin CA 92680

ELECTRONIC INFORMATION SUPPORT

Inventory Locator Service, 3965 Mendenhall Rd. South, Suite 10, Memphis, TN 38115

ENGINE TEST EQUIPMENT

General Thermodynamics Corp., P.O. Box 1105, 210 S. Meadow Road, Plymouth, MA 02360
Instruments, Computers, & Controls, Inc., 6942 Haven Creek Dr., Katy, TX 77449

EPIRBS

ACR Electronics, Inc., 5757 Ravenswood Rd., P.O. Box 5247, Ft. Lauderdale FL 33310-5247
Aiden Electronics, 40 Washington St., Westborough, MA 01581
Liton Special Devices, 750 W. Sproul Road, Springfield, PA 19064
Koden International, 77 Accord Park Drive, Norwell, MA 02061

EQUIPMENT—Marine

Byrne, Rice & Turner, Inc., 1172 Camp St., New Orleans, LA 70130
Gladsky Marine, Garvies Point Rd., Glen Cove, NY 11542
Maritime Power Corp., 200 Henderson Street, Jersey City, NJ 07302
Ovako Steel Inc., P.O. Box 745, Avon, CT 06001

EVAPORATORS

Alfa-Laval, Desalt A/S, Stamholmen 93, DK-2650 Hvidovre, Copenhagen, DENMARK
Alfa-Laval Separation, Inc., 955 Mearns Road, Warminster, PA 18974
Aqua-Chem Water Technologies Div., P.O. Box 421, Milwaukee, WI 53201
Beard Industries Inc., P.O. Box 31115, Shreveport, LA 71130

FANS/VENTILATORS/BLOWERS

Carling Turbine Blower Co., 10 Nebraska St., P.O. Box 88, Worcester, MA 01613
Jon M. Liss Associates, Inc., 411 Borel Ave., San Mateo, CA 94402

FASTENERS

Jamestown Distributors, 28 Narragansett Ave., P.O. Box 348, Jamestown, RI 02635
Non-Ferrous Bolt & Mfg. Co., 4085 Nevo Dr., Suite C, Las Vegas, NV 89103
FENDERING SYSTEMS/BUOYS—Dock & Vessel
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
Milligan Marine Supply Inc., 5832 Harvey Wilson, Houston, TX 77020
Rowe Bumpers, Conveyors & Caster Corp., 3501 Detroit Ave., Cleveland, OH 44113
Seaward International, Inc., Clearbrook Industrial Park, P.O. Box 98, Clearbrook VA 22624
Soldur Plastics Co., 200 Industrial Dr., Delmont, PA 15626
Standard Refrigeration Co., 2050 N. Ruby, Melrose Park, IL 60160
Ultra Poly Inc., 2926 South Steele, Tacoma, WA 98409
Viking Fender Co., 50 Church Street, Sea Bright, NJ 07760

FIBER OPTIC SYSTEMS

ATT, Cables System/Fiber Optic Div., 111 Madison Avenue, Morristown, NJ 07962

FUEL ADDITIVES/CONDITIONING

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

GALLEY EQUIPMENT

Cospolich Refrigerator Co., 949 Industry Rd., Kenner LA 70062
Gaylord Industries, 10900 S W Avery St., P.O. Box 1149, Tualatin, OR 97062
McEroy Machine & Mfg Co., Inc., P.O. Box 4454, Bilozi MS 39535-4454

GANGWAYS, LADDERS

Coast Marine & Industrial Supply Inc., 398 Jefferson St., San Francisco, CA 94133
Rampmaster Inc., 9825 Osceola Blvd., Vera Beach, FL 32966
Westmont Industries, 10805 Painter Ave., Santa Fe Springs, CA 90670
Woolter Products Inc., 1000 Spruce St., P.O. Box 896, Wooster, OH 44691

HEAT EXCHANGERS

Alfa-Laval, Desalt A/S, Stamholmen 93, DK-2650 Hvidovre, Copenhagen, DENMARK
Alfa-Laval Separation, Inc., 955 Mearns Rd., Warminster, PA 18974
Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130

HORNS/WHISTLES

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

HOSE

HBD Industries, Inc., 1801 S. Railroad Street, Salisbury, NC 28145-0948

HYDRAULICS

Aeroquip Corporation, 3000 Strayer, P.O. Box 631, Maumee, OH 43537-0631
Cunningham Marine Hydraulics Co., 201 Harrison St., Hoboken NJ 07030
Del Gavio Marine Hydraulics Inc., 619 Industrial Rd., Carlstadt, NJ 07072

INCINERATORS

Teamtec A/S, P.O. Box 100, N-4912 Gjevling, NORWAY
A/S Vesta, 27 Skudehavsvej, DK-2100 Copenhagen DENMARK
US Agent: American United Marine, 5 Broadway, Rte 1, Saugus, MA 01906

INSULATION

Spuncoat Company, 1 Burt Drive, Deer Park, NY 11729
JOINER—Watertight Door—Paneling—Ceiling System—Decking
Cupples Products, 2650S. Hanley Rd., St. Louis, MO 63144
GEC-Marconi Electronic Systems Corp., 550 S. Fulton Ave., Mt. Vernon, NJ 10550
IMACAB, Berga A11e1, S-252 55 Helsingborg, SWEDEN
U.S. Rep: Hopeman Brothers, Inc., P.O. Box 820, Waynesboro, VA 22980
Jamestown Metal Marine Sales, Inc., 4710 Northwest Second Avenue, Boca Raton, FL 33431

Marine Accommodations Inc., 8535-3 Baymeadows Road, Suite 140, Jacksonville, FL 32256
Maritime Services Corp., 3457 Guignard Drive, Hood River, OR 97031
Walz & Krenzer Inc., 1390 Mt. Read Blvd., Rochester NY 14606

KEELCOOLERS

R.W. Fernstrom & Co., 1716 Eleventh Ave., Menominee, MI 49858
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
The Walter Machine Co., Inc., 84-98 Cambridge Avenue, Jersey City, NJ 07307

LEGAL SERVICES

John Jozwick, c/o Bryan, Schiffrin & McMonagle, First & Cedar Bldg., Ste 356, 2701 First Ave., Seattle, WA 98121

LIFEBOATS/RAFTS

Zodiac of North America, P.O. Box 400, Stevensville, MD 21166
Willard Marine Co., Inc., 1250 N. Grove St., Anaheim, CA 92806

LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights

ACR Electronics, Inc., 5757 Ravenswood Rd., P.O. Box 5247, Ft. Lauderdale, FL 33310-5247
Archway Marine Lighting, 4501 Swan Ave., St. Louis, MO 63110
Carlisle & Finch, 4652 W. Mitchell Ave., Cincinnati OH 45232
The L. C. Doane Co., P.O. Box 975, Essex, CT 06426
Nautilus Equipment Ltd., P.O. Box 66, Station M, Halifax, Nova Scotia B3J2L4, CANADA

Perko Products, 6161 N 64th St., Milwaukee WI 53218

LINE BLINDS

Stacey/Fetterolf, P.O. Box 103, Skippack, PA 19474

LOGISTICS

VL Logistics Consultants, Inc., 3420 Bienville Blvd., Ocean Springs MS 39564
QED, 4846 N. Witchduck Road, Virginia Beach, VA 23455

MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING

Del Gavio, 619 Industrial Rd., Carlstadt, NJ 07072
Global Maritime Services, 247 SW 33 Court, Ft. Lauderdale, FL 33315
Goltan Marine Company Inc., 160 Van Brunt Street, Brooklyn, NY 11231
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

MACHINING—On Site Repair

Global Maritime Services, 247 SW 33 Court, Ft. Lauderdale, FL 33315

MARINE ACCOMMODATIONS

Hopeman Brothers, P.O. Box 820, 435 Essex Ave., Waynesboro, VA 22980
Jamestown Metal Marine Sales, Inc., 4710 Northwest Second Avenue, Boca Raton, FL 33431
Marine Accommodations Inc., 8535-3 Baymeadows Road, Suite 140, Jacksonville, FL 32256

MARINE FURNITURE

Jamestown Metal Marine Sales, Inc., 4710 Northwest Second Avenue, Boca Raton, FL 33431
Marine Accommodations Inc., 8535-3 Baymeadows Road, Suite 140, Jacksonville, FL 32256
Wilson & Hayes, 1601 Eastlake Avenue, East, Seattle, WA 98102

METAL PRODUCTS

Williams & Co., Inc., 901 Pennsylvania Avenue, Pittsburgh, PA 15233-1495
Harrington Metal Fabrication, P.O. Box 410, 6720 M 89, Fenville, MI 49408

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS

Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Hwy., Arlington, VA 22202
Aero Nav Laboratories, Inc., 14-29112 St., College Point, NY 11356
Artec Offshore Corp., 578 Enterprise St., Escondido, CA 92025
B.C. Research, 3650 Westbrook Mall, Vancouver, B.C. CANADA V6S2L2
BMT International, 10480 Little Patuxent Pkwy, Ste 640, Columbia, MD 21044
CDI Marine Co., 9487 Regency Square Blvd., Suite 500, Jacksonville, FL 32225
CT 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 First Ave S., Seattle WA 98148
C.R. Cushing, 18 Vessey St., New York, NY 10007
Arthur D. Darden, 3200 Ridgelaque Dr., Suite 403, Metairie LA 70002
Design Associates Inc., 14360 Chief Mentour Highway, New Orleans, LA 70129
Designers & Planners, 2611 Jefferson-Davis Hwy, Ste. 3000, Arlington, VA 22202

Diversified Technologies, 812 Live Oak Dr., Chesapeake VA23320
Encon Managements Engineering Consultant Services, P.O. Box 7760, Beaumont, TX 77706
GHM Inc. (Industrial Measurement Consultants), P.O. Box 1836, Newport News, VA 23601
Gibbs & Cox, Inc., 50 West 23rd Street, New York, NY 10010
The Glosten Associates Inc., 600 Mutual Life Bldg., 605 First Ave., Seattle, WA 98104
Morris Guralnick Associates, Inc., 130 Sutter Street, Suite 400, San Francisco, CA 94104
C. Raymond Hunt Associates, 69 Long Wharf, Boston MA 02110
Hydrocomp, Inc., 45 James Farm-Lee, P.O. Box 865, Durham, NH 03824
JH Inc., No. 4 Executive Campus, Culbert Blvd. & Route 70, P.O. Box 5031, Cherry Hill, NJ 08034
R.D. Jacobs Associates, 11405 Main St., Roscoe, IL 61073
James S. Krogen, 1515 NW 7th St., Suite 124, Miami FL 33125
Rodney E. Lay S Associates, 1391 Atlantic Blvd., Jacksonville, FL 32225
Alan C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063
John V. McCollum, Inc., 1199 Long Point Road, Mt. Pleasant, SC 29464
McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi, MS 39535-4454
John J. McMullen Associates, Inc., 1 World Trade Center, Suite 3000, New York, NY 10048
MacPherson Maritime Services, 141 Jefferson Ave., Westfield NJ 07090
Fendall Marbury, 9 Neal Street, Annapolis MD 21401
Marine Design S Operations, Inc., 226 Chestnut St., Roselle Park, NJ 07204
Marine Management Systems Inc., 102 Hamilton Ave., Stamford CT 06902
Marine Power Associates, 1010 Turquoise St., Ste 217, San Diego, CA 92109
Maritech, Seacraft, Bay Road, Newmarket, NH 03857
Maritime Design, Inc., 3020 Hartley Rd., Jacksonville, FL 32257
R.J. Mellusi Co., 71 Hudson St., New York, NY 10013
Nautical Designs, Inc., 2101 S Andrews Ave., Suite 202, Ft. Lauderdale FL 33316
Nelson S Associates, Inc., 610 Northwest 183rd St., Miami, FL 33169
Northern Marine, P.O. Box 1169, Traverse City, MI 49685
Ocean Oil International Engineering Corp., 3019 Mercedes Blvd., New Orleans LA 70114
Olsen Marine Surveyors Co., P.O. Box 283, Fort Jefferson, NY 11777
Omega Marine Engineering Systems, Inc., 11757 Katy Freeway, Ste 1100, Houston TX 77079
OED Systems Inc., 4646 Witchduck Rd., Virginia Beach, VA 23455
Donald J. Quigley, Inc., P.O. Box 515 Richboro, PA 18954
M. Rosenblatts Son, Inc., 350 Broadway, New York, NY 10013, 620 Folsom St., San Francisco, CA 94107
Sargent & Herkes, 225 Baronne St., Suite 1405, New Orleans LA 70112
Sea School, 10812 Gandy Boulevard, St. Petersburg, FL 33702
Seaworthy Systems Inc., P.O. Box 965, Essex, CT 06426; 17 Battery Pl., New York, NY 10004; P.O. Box 975, Barnegat Light, NJ 08006; 2 Skyline Pl., 5203 Leesburg Pike, Suite 700, Falls Church, VA 22041; 1305 Franklin Street, Suite 210, Oakland, CA 94612
Seaworthy Electrical Systems, 17 Battery Pl. N.Y. N.Y. 10004
George G. Sharp, Inc., 100 Church St., New York, NY 10007
R.A. Steam, 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

NAVIGATION & COMMUNICATIONS EQUIPMENT
Anschutz & Company, One Madison Street, East Rutherford, NJ 07073
A1&T, High Seas Dept., 412 Kemble Ave., Room C380, Morristown, NJ 07960
Comsat Maritime Services, 950 E. Eriant Plaza SW, Washington DC 20024
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080
Henschel, Inc., 9 Hoyt Drive, Newburyport MA 01950
Hose McCann, 9 Smith Street, Englewood, NJ 07631
IDB Aero-Nautical Communications, 15245 Shady Grove Road, Rockville, MD 20850
Kevin Hughes Ltd., New North Rd., Hainault, Ilford, Essex, U.K. IG2 9UR ENGLAND
Kenwood USA Corp., Marine Products Div., 2201 E. Dominquez St., Long Beach, CA 90810
Mackay Communications, 441 US Highway #1, P.O. Box 331, Elizabeth NJ 07207
Marine Electric RPD, Inc., 50 Carol St., P.O. Box 1135, Clifton, NJ 07014-1135
Mobile Telesystems, Inc., 300 Professional Drive, Gaithersburg, MD 20879
Naval Electronics, 5417 Jetview Circle, Tampa FL 33634
Newspan Telecom, P.O. Box 6701, Oslo 1, NORWAY
Novatech, 820 Cormorant St., Victoria, BC V8W1R1, CANADA
Robertson Marine Systems, 3000 Kingman Street, Suite, 207, Metairie, LA 70006
SPD Technologies, 13500 Roosevelt Blvd., Philadelphia, PA 19116
Simrad, 1921033rd Avenue West, Lynnwood, WA 98036
Singapore Telecom, Orchard Point Post Office, P.O. Box 38, SINGAPORE 9123
Sperry Marine Inc., 1070 Seminole Trail, Charlottesville VA 22901
Standard Communications, P.O. Box 92151, Los Angeles, CA 90009
Summer Equipment Ltd., 24 West 4th Ave., Vancouver V5Y1G3, CANADA
Trimble Navigation, 585 North Mary Avenue, P.O. Box 3642, Sunnyvale, CA 94086
Waterway Communications System, Inc. 453 E. Park Pl., Jeffersonville, IN 47130

NOZZLES
Nautican Enterprises Ltd., 407 Mountain Highway, North Vancouver, B.C. V7J 2L1

OIL—Marine—Additives
Exxon Company International, 200 Park Ave., Bldg 222, Room A279, Florham Park, NJ 07932, P.O. Box 4706, Houston, TX 77210-4706
Mobil Oil Corporation, 3225 Galloway Road, Fairfax, VA 22037-0001
Shell Oil, P.O. Box 2463, Houston, TX 77252
Texaco, International, 2000 Westchester Avenue, White Plains NY 10650

OILWATER SEPARATORS
Alfa-Laval Separation, Inc., 955 Meams Rd., Warminster, PA 18974-0556
Centrico, Inc. (Westfalia Separators), 100 Fairway Court, Northvale NJ 07647
FAST Systems, Inc., 3240N. Broadway, St. Louis, MO 63147
MHC International, 60 Inp Dr., Inwood NY 11696

PAINT—COATING—CORROSION CONTROL
Ameron, 201 N. Berry St., Brea, CA 92622
Enviro Coatings, Inc., 4560 Belt Line Rd., Suite 300, Dallas, TX 75244
Esgard, Inc., P.O. Drawer 2698, Lafayette, LA 70502
GlobalTech, 9801 Westheimer St., Ste. 202, Houston, TX 77042
Jamestown Distributors, 28 Narragansett Ave., P.O. Box 348, Jamestown, RI 02635
Hempel Coatings, Foot of Curie Avenue, Wallington, NJ 07057
Melvin Pierce Marine Coating, Inc., P.O. Box 93, Semmes, AL 36575
Microphor, Inc., Marine Division, 452 E. Hill Rd., P.O. Box 1460, Willits, CA 95490
Sigma Coatings, 8970 Market St., Houston, TX 77029, 330 Rover Road, Harvey, LA 70059, 1100 Adams St., Hoboken, NJ 07030
Untor Ships Service, Uniform Marine Chemicals Division, 3 High St., Rickmansworth, Herts, WD3 1SW UNITED KINGDOM

PIPE FITTINGS/CONNECTING SYSTEMS
Aerquip Corporation, 3000 Strayer, P.O. Box 631, Maumee, OH 43537-0631

Deutsch Metal Components, 14800 S. Figueroa, Gardena, CA 90248
Locking, 396 Harch Drive, Foster City, CA 94404
Stanley G. Flagg Co., 1020 W. High St., Stowe, PA 19464
Thaxton, Inc., 25 Leonburg Rd. Mars, PA 16406-8401

PORT SERVICES
Port of Iberia, P.O. Box 897, New Iberia LA 70561
Port of Portland, 5555N. Channel Ave., Portland, OR 97217

PROPULSION EQUIPMENT—Bowltrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines
Avondale Industries, Harvey Quick Repair, P.O. Box 116, Harvey, LA 70058
American Air Filter, P.O. Box 35690, Louisville, KY 40432
ASEA Brown Boveri, 1460 Livingston Ave., North Brunswick NJ 08902
ASEA Brown Boveri (Stromberg), P.O. Box 185, 00381 Helsinki, FINLAND
Argo International, 140 Franklin Street, New York, NY 10013
Aquamaster-Raum Ltd., Box 220, SF-26101, Rauma, FINLAND
Bergen Diesel A/S, P.O. Box 924, N-9002, Bergen, NORWAY
Bird Johnson Company, 110 Norfolk St., Watpole, MA 02281
CWF Hamilton & Co., Ltd., P.O. Box 709, Christchurch, NEW ZEALAND
Caterpillar, 100 NE Adams Street, Peoria, IL 61629-2320
Cincinnati Gear Co., 5657 Wooster Pike, Cincinnati, OH 45227
Coltec Industries (Fairbanks Morse Engine Div.), 701 Lawton Avenue, Beloit, WI 53511
Cummins Engine Company, Mail Code 60011, Box 3005, Columbus, IN 47202-3005
Electro-Motive Division of GM, 9301 W 58th St., LaGrange, IL 60525
Fincantieri, Diesel Engines Divisio—GMT, Bagnoli della Rosandra 334, Trieste, ITALY
GE Marines Industrial, 1 Neumann Way N-158, Cincinnati OH 45215
GE NavatiS Drive Turbine Systems, 166 Boulder Dr., Fitchburg MA 01420
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
Krupp MAK, 7555 Danbro Crescent, Mississauga, Ontario, CANADA L5N 6P9
Mapeco Products Inc., P.O. Box 6, 725 Glen Cove Ave., Glen Head NY 11545
Marine Gears, Inc., P.O. Box 689, Greenville MS 38707
Marine Systems Inc., 2032 Atlantic Ave., Chesapeake VA 23324
Markkusch Werk, P.O. Box 1442, D-5848 Halver GERMANY
MAN B&W Diesel, 17 State St., New York, NY 10004
MAN B&W Diesel A/S, Ostervej 2, DK-4960 Høleby, DENMARK
MAN B&W Diesel A/S, Alpha Diesel, Niels Juels Vej 15, DK-9900 Frederikshavn, DENMARK
MAN B&W Diesel GmbH, Stadtachtrasse 1, D-8900 Augsburg 1 GERMANY
MKW Power Systems, 301 S. Church St., Rocky Mount, NC 27801
MTK Magnetkinc., 11150 Santa Monica Blvd., Los Angeles CA 90025
New Sulzer Diesel Ltd., CH-8401, Winterthur, SWITZERLAND
Northwest Marine Services Corp., 6452 So. 144th St., Tukwila WA 98168
Nylands Manne Service A/S, P.O. Box 130, N-4818 Faerik, NORWAY
Ommhrustrer Inc., 9515 Sorensen Ave., P.O. Box 2144, Santa Fe Springs, CA 90670
Ovako Steel Couplings AB Sweden, S-8110 Hofors SWEDEN
Propulsion Systems, 1441 N Northlake Way, Seattle WA 98103
RollaSP Propellers SA, Via SiliVa5, P.O. Box 251, 6828 Baierna SWITZERLAND
Rolla SP Propellers USA, 4030 Mustang Road, Melbourne, FL 32934, USA
Karl Senner Inc., 25 W Third, Kenner LA 70062
Schottel-Werft D-5401 Spay, GERMANY
Stewart & Stevenson, 1400 Dietrich, P.O. Box 8, Harvey LA 70059-0008
Sulzer/EscherWys, Ravensburg GERMANY
Textron Lycoming, 550 Main St., Stratford, CT 06497
Ustain International, A/S, N-6065 Ustevik, NORWAY
J. M. Voith GmbH, Marine Division, Postfach 1940, D-7920, Heidenheim/Brenz, GERMANY U.S. Rep. Voith Schneider America Inc., 121 Susquehanna Ave., Great Neck, NY 11021
OyWartsila Ab, Vasaand Abo Divisions, P.O. Box 244, SF65100 Vasa, FINLAND
OyWartsila, Stork Division, P.O. Box 244, SF65100 Vasa, FINLAND
Westech Gear Corp., 2600 E. Imperial Highway, Lynnwood, CA 90262
ZF of North America, Marine Sales, 500 Barday Blvd., Lincolnshire IL 60069

PROTECTIVE WRAPS
FANA (Fam Applicators of North America), 1260 E Woodland Ave., Springfield PA 19064

PUMP—Repair—Drives
Coffin Turbo Pump, Inc., 326 S. Dean Street, Englewood, NJ 07631
Del Gavio, 619 Industrial Rd., Carlstadt, NJ 07072
Gotten Marine Company Inc., 180 Van Brunt Street, Brooklyn, NY 11231
House Marine, Lario Division, 1713 S. Market St., Foley AL 36535
Jim's Pump Repair, 48-55 36th St., Long Island City NY 11101
Leitritz Corporation, 165 Chestnut Street, Allendale, NJ 97401
Megator Corporation, 562 Alpha Drive, Pittsburgh, PA 15238
Vita Motivator, 99 W Hawthorne Ave., Suite 622, Valley Stream NY 11580
Wilden Pump & Engineering Co., 22069 Van Buren St., P.O. Box 845, Colton, CA 92324

REMOTE VALVE OPERATORS
Elliott Manufacturing, P.O. Box 773, Binghamton, NY 13902
S. S. White Technologies, Inc., 151 Old NewRusnick Road, Piscataway, NJ 08854
Telflex, Inc., 771 First Ave., King of Prussia, PA 19406

ROPE—Manila—Nylon—Hawser—Fibers
Allied Signal Inc., Fibers Division, 1411 Broadway, New York, NY 10018
Columbian Rope Corp., P.O. Box 270, Guntown, MS 38849
Dupont, Montgomery 403, 1011 Centre Road, Wilmington, DE 19805

SANITATION DEVICE—Pollution Control
Jared Brown Brothers, 56 South Squire Rd., Auburn Hills, MI 48326
Byrne, Rice & Turner, Inc., 1122 Camp Street, New Orleans, LA 70130
Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111
FAST Systems, Inc., 3240 N. Broadway, St. Louis MO 63147
Microphor, Inc., 452 E. Hill Rd., P.O. Box 1460, Willits, CA 95490
Novatech, 820 Cormorant St., Victoria BC V8W1R1, CANADA
Red Fox Environmental Services, Inc., P.O. Box 53809, Lafayette, LA 70505-3809
Research Products/Blankenship (Incojet), 2639 Androp, Dallas, TX 75220

SCALE MODELS
Sturgeon Bay Model Shop, 187 N Ninth Ave., Sturgeon Bay WI 54235

SCUTTLERS-MANHOLEES
L.S. Baier & Assoc., 7527 NE 33rd Dr., Portland OR 97211

SHIPBUILDING EQUIPMENT
MAN—GHH, Sterkrade Werferabe 112D-4100 Duisburg 18, GERMANY
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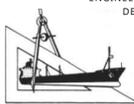
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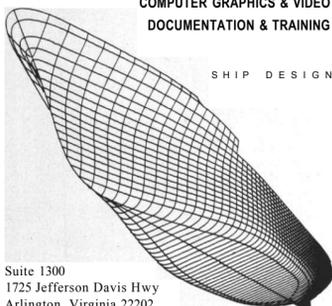


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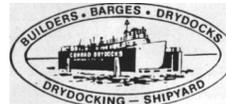
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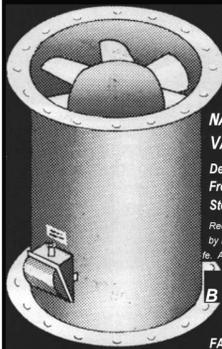


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Steiner Shipyard, Inc. has completed the conversion of a 180-foot oil field supply boat Veesea Typhoon into a standby/rescue vessel for use in the U.K. sector of the North Sea. She is one of four standby/rescue vessels that will be operated by a joint venture between Vector Offshore, an English firm, and Seacor Marine, Inc. of Morgan City, La.

Converting the Veesea Typhoon to its new role involved returning the ship's mechanical systems to good working order, the addition of a two-level 44-foot by 30-foot rescue module located aft of the main superstructure, updating crew quarters and the galley to accommodate 20 people, sandblasting and repainting the hull, and updating electronic navigation and communication equipment in the pilothouse. To allow the vessel to combat the higher sea states often encountered during the winter months and to provide a more comfortable environment for the survivors, the bow and the bulwarks were raised and strengthened on the vessel. The pilothouse was also lifted for better visibility and enhanced safety.

The conversion of the Veesea Typhoon was extensive. Mechanical systems work included rebuilding both of its Caterpillar D-399

engines to bring them in compliance with ABS specifications. The two Caterpillar 3406 gensets were also rebuilt. A bow thruster, powered by a Caterpillar 3406 diesel only needed repair to its air starting system.

The major addition to the vessel was the construction of the rescue module consisting of forward and aft treatment areas, a hospital ward with bunks for 18 persons, a survivor reception area fitted with seating for 13 persons, a mortuary, survivor berths for 36 persons in a two-tier arrangement and survivor seating for 96 persons, also located on both levels. Port and starboard rescue zones lead directly into the two level rescue module.

Aft of the main superstructure and the rescue module is the main cargo deck for transportation of offshore cargo and equipment. This area also holds two 15-man rescue craft that will be added to the boat when she reaches her port in Leith, Scotland.

Conversion of the Veesea Typhoon is the fourth vessel Steiner has built recently for Seacor Marine. Steiner just delivered the third of three new 225-foot supply boats to Seacor.



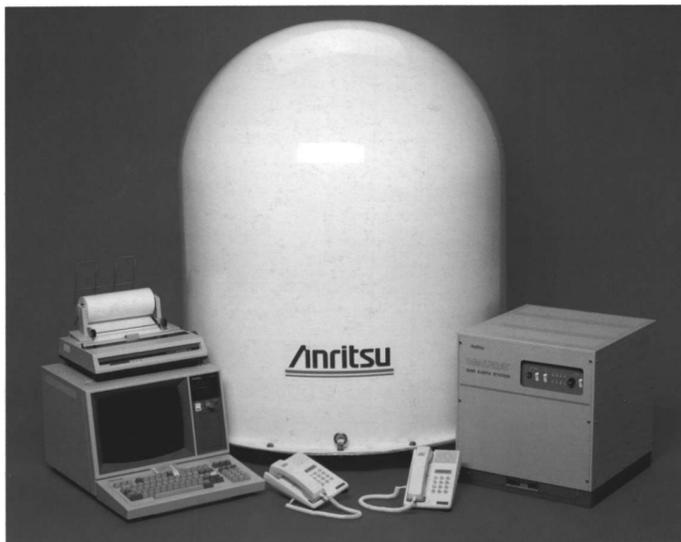
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