

MARITIME REPORTER

AND
ENGINEERING NEWS

Preview RO RO '81
PAGE 4



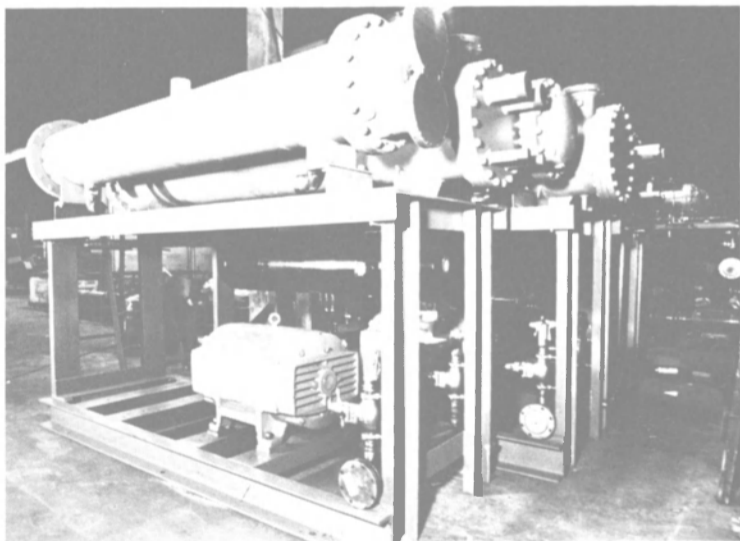
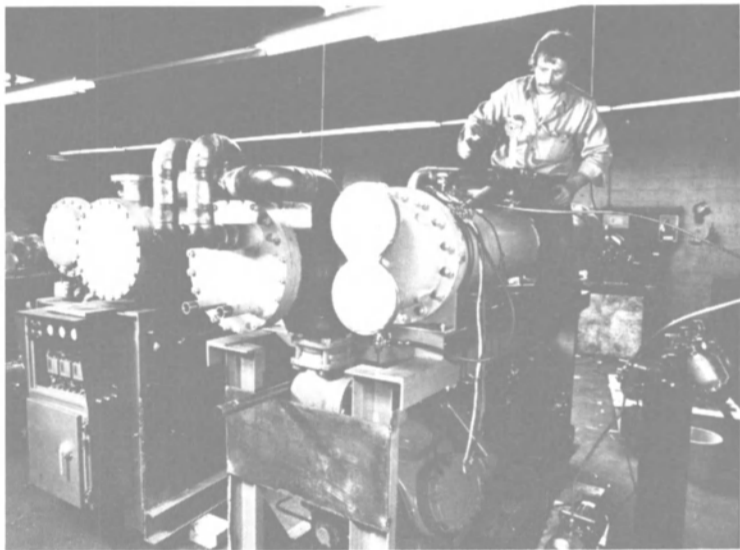
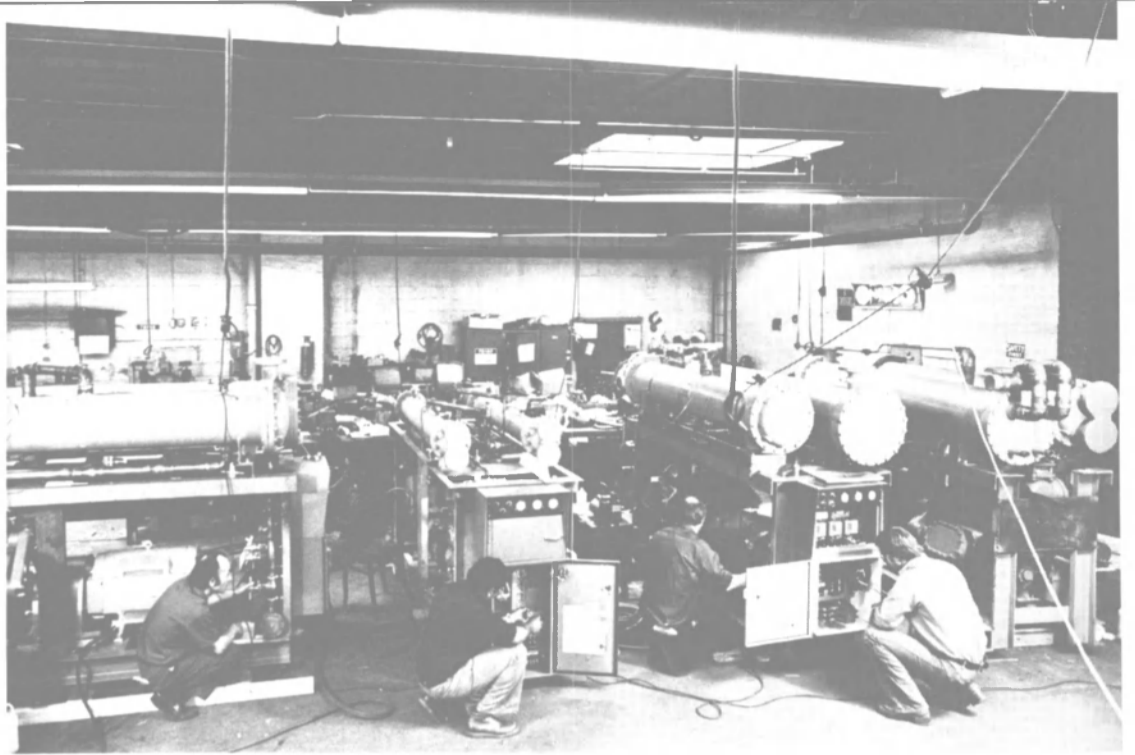
'William J. De Lancey'

**AmShip Division Christens
Longest Vessel On Great Lakes**
(SEE PAGE 12)

JUNE 15, 1981

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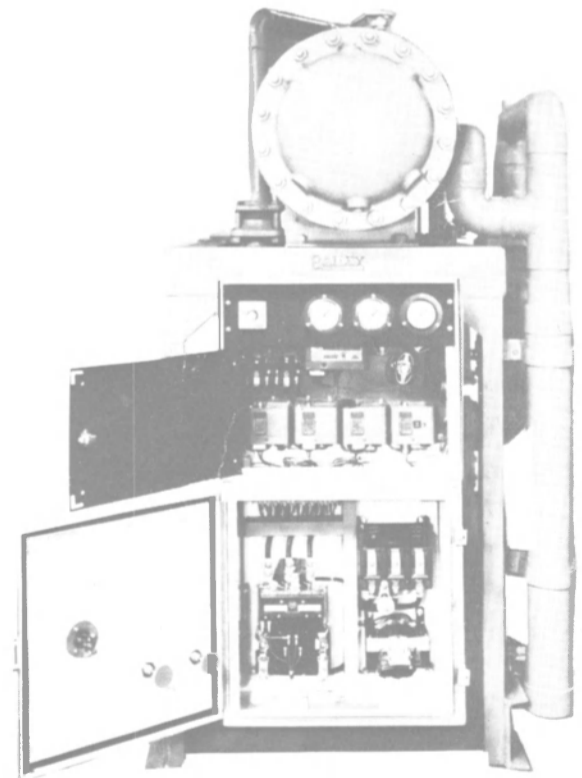
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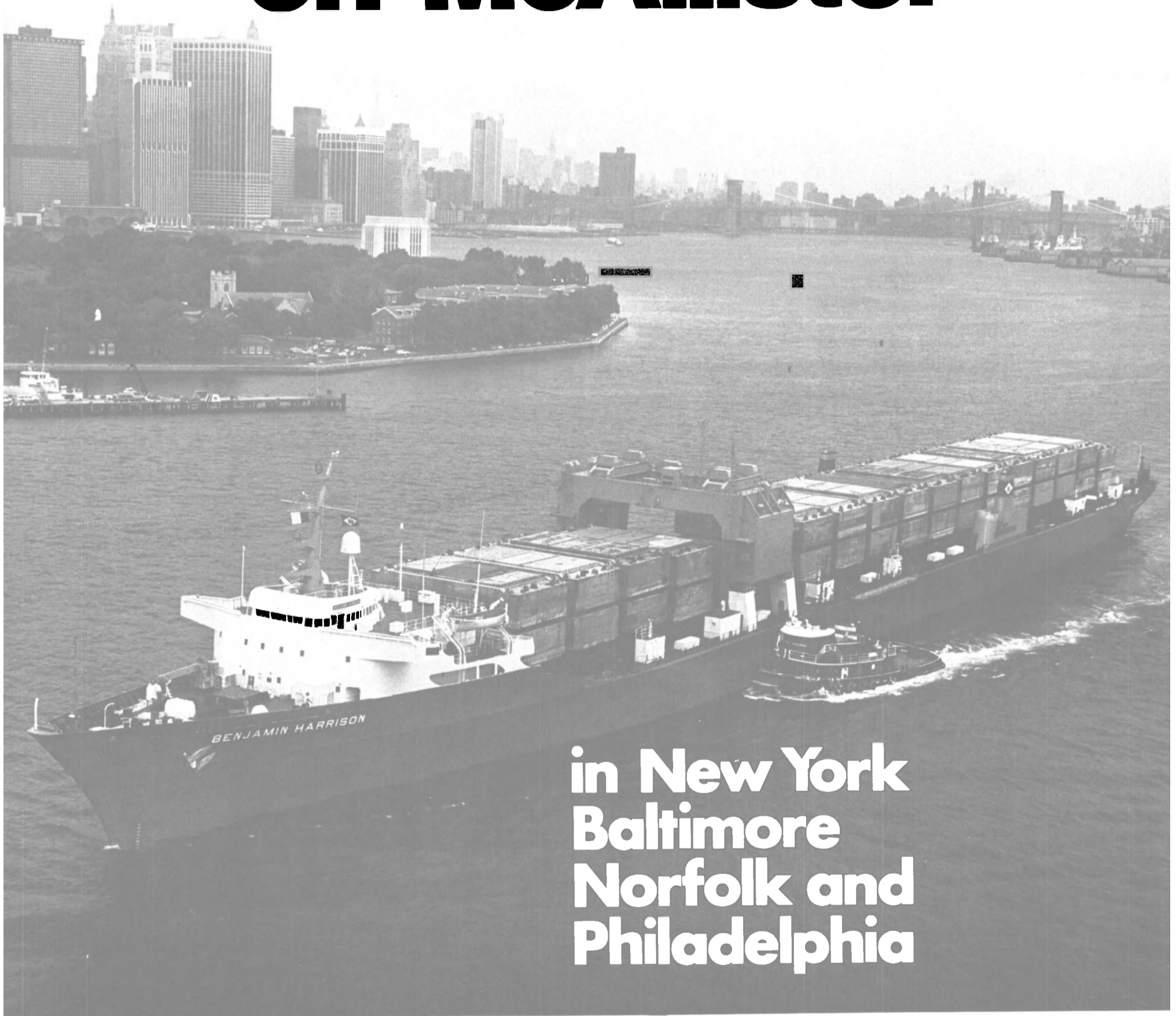
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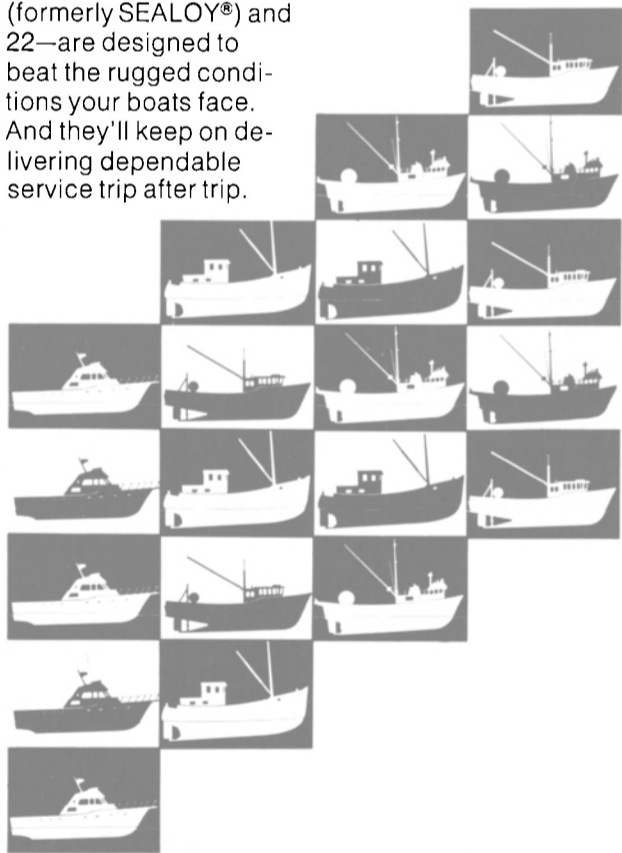
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ON THE COVER

Preview—RO/RO '81

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AmShip Division Christens Longest Vessel On Great Lakes

page 12

Pinnacle Asks Title XI On Three Deck Barges To Cost \$7.4 Million Total

Pinnacle Company, Houston, has applied to the Maritime Administration for a Title XI guarantee to aid in financing the construction of three 300-foot deck/specialty barges for use in the U.S. Gulf of Mexico. Misener Industries, Inc., Tampa, Fla., is the builder, with deliveries scheduled for this year.

The requested guarantee is for \$6,450,000, or up to 87½ percent of the total estimated actual cost of \$7,402,410 of the three barges.

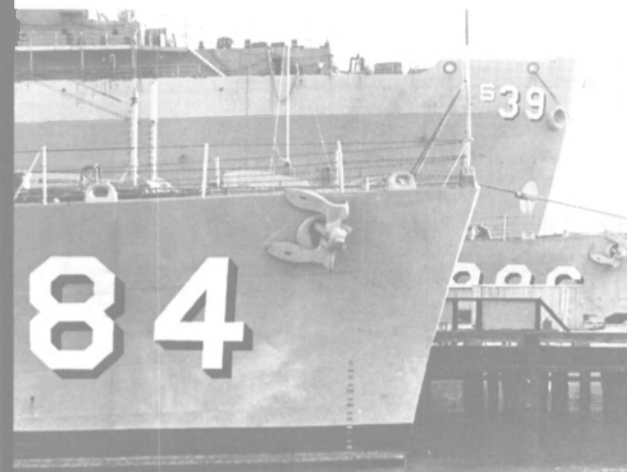
Manhattan Tanker Asks Title XI On \$6.8-Million Tanker Reconstruction

Manhattan Tanker Company, Inc., a subsidiary of Transeastern Associates, New York, has applied to the Maritime Administration for a Title XI guarantee to aid in financing the reconstruction of the 114,000-dwt tanker Manhattan in compliance with new U.S. Coast Guard requirements.

The 43,000-shp vessel was built and delivered by General Dynamics' Shipbuilding Division, Quincy, Mass., in 1962, and lengthened in 1969. New inert gas and crude oil washing systems are to be installed in the vessel, which operates worldwide.

If approved, the Title XI guarantee would cover \$6,000,000, or approximately 87½ percent of the estimated cost of \$6,858,142.

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MARITIME REPORTER AND ENGINEERING NEWS

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No. 12

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ALL MATERIAL FOR EDITORIAL CONSIDERATION SHOULD BE ADDRESSED TO ROBERT WARE, EDITOR.

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Gilbert Snyders Named VP-Manufacturing At Marinette Marine



Gilbert J. Snyders

Gilbert J. Snyders was recently appointed to the position of vice president, manufacturing at Marinette Marine Corporation, Marinette, Wis. Prior to joining Marinette, he had been with Newport News Shipbuilding and Drydock Company since 1956. At Newport News he held positions in design; supervisor, machinery; general superintendent; construction manager; manager, production control; and director of international development.

SPC Coatings Combat Rising Fuel Costs— Literature Available

Following the Arab oil embargo in late 1973, International Paint Company rose to the challenge of combating rising fuel costs with the introduction of the Intersmooth SPC (self-polishing copolymer) antifouling coating system.

The newest member of this family of coatings is Intersmooth SPC-20. It polishes more slowly than the other products and, in combination with an Intersmooth SPC-4 or SPC-9 system, allows extended in-service periods beyond 30 months.

Other members of the Intersmooth SPC family include SPC-4, which has the most extensive in-service record, and SPC-9, specially designed for more severe fouling environments and low-activity vessels. The latter has been used widely for ships operating from Japan, where fouling is severe, and for ships that operate with repeated idle periods.

For further information and free literature on International's SPC family of coatings,

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Ryan-Walsh Bulk Terminal In New Orleans Resumes Coal-Handling Operations

New Orleans' ability to garner an increasing share of coal exports received a major boost recently with the resumption of full operation of the New Orleans Bulk Terminal. The Ryan-Walsh New Orleans Bulk Terminal, as it is now known, opened about six months ahead of schedule after extensive renovation and

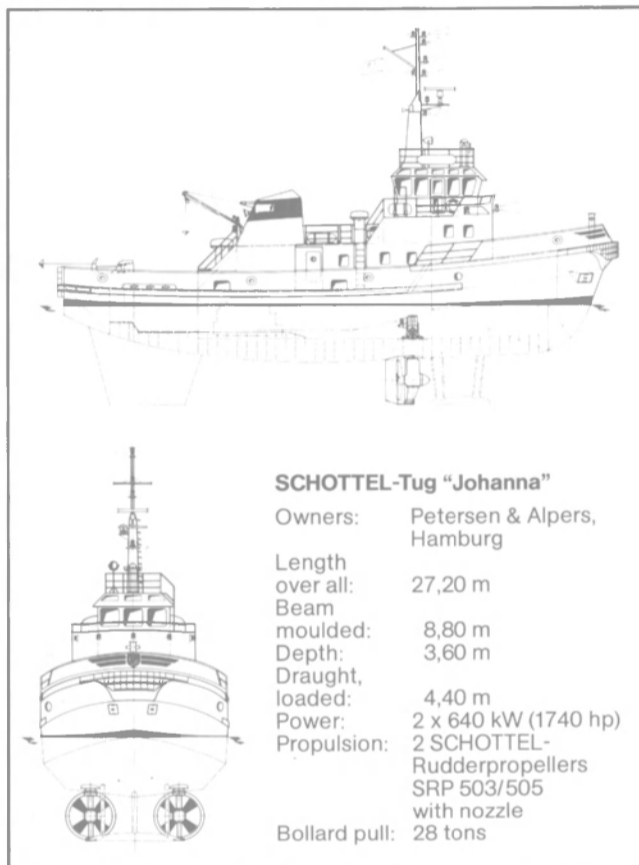
expansion by Ryan-Walsh Stevedoring Company. Ryan-Walsh recently signed a five-year lease with the New Orleans Port Authority to operate the facility as a private terminal.

Spokesman for Ryan-Walsh say they expect to handle some 1.75 million tons of coal at the facility during the first year of the contract, with tonnages rising to the 3.5-million level by the fifth year. Their contract contains renewal options for additional years.

At present coal is moving through New Orleans by mid-stream transfer, a technique practiced by Ryan-Walsh and other stevedoring firms in which floating derricks are used to transfer coal from barge to vessels anchored in the Mississippi River. Under this system, ships do not have to experience weeks of waiting to get to congested berths, saving shippers demurrage that is adding millions of dollars a year to the cost of coal shipments.

Coal is the fastest-growing cargo on the Gulf, say industry spokesmen, turning south because of Atlantic Coast congestion, and will be a major cargo in New Orleans, Mobile, Alabama, and possibly a few other Gulf ports for many years. Inquiries about the bulk terminal may be made to Ryan-Walsh through its New Orleans office at (504) 586-0400, or its corporate headquarters in Mobile at (205) 438-4771 or (800) 633-6758.

SCHOTTEL-Tugs dominating in the Port of Hamburg



SCHOTTEL-Tug "Johanna"

Owners: Petersen & Alpers, Hamburg
Length over all: 27,20 m
Beam moulded: 8,80 m
Depth: 3,60 m
Draught, loaded: 4,40 m
Power: 2 x 640 kW (1740 hp)
Propulsion: 2 SCHOTTEL-Rudderpropellers SRP 503/505 with nozzle
Bollard pull: 28 tons



The launching of another SCHOTTEL-Tug owned by Petersen & Alpers Towing Company, Hamburg means that by 1980 a total of 14 tugs of the successful series of modern twin-screw SCHOTTEL-Tugs will be in service in the Port of Hamburg. The new vessel, which was built at the Mutzfeld-Shipyard in Cuxhaven, is fitted out with two steerable SCHOTTEL-Rudderpropellers type SRP 503/505 and powered by two KHD diesel engines type SBA 6M 528, each having a capacity of 640 kW (870 hp) at 900 r.p.m. The two completely independent propulsion units are steered by the electro-hydraulic SCHOTTEL-Steering System S 600.

Like all the other tugs equipped with SCHOTTEL-propulsion in the Port of Hamburg, the rudderpropellers are mounted under the forward end of the hull in nozzles. Their combined thrust together with propulsion steering through 360 degrees enables the tug not only to move sideways in any desired direction but makes her equally manoeuvrable and efficient going ahead or astern. She stops or turns full circle in about her own length. Because the rudderpropellers are installed at the forward end and because of the stabilising effect of the protection plate located underneath them, the tugs ride smoothly and are easy to manoeuvre even in bad weather at sea.

The combination of the propellers fitted forward and the tow hook installed near the stern, produces very positive stability which eliminates the danger of capsizing due to "girting".

Wherever they are in operation, the excellent manoeuvring features and the outstanding safety potential of this new generation of tugs have led to decisive improvements in tug technology and in providing assistance to sea-going vessels, not only in Hamburg, but in many other harbours all over the world.

For almost 30 years the SCHOTTEL-System has proved itself throughout the world and has made possible the development of robust, dependable, very economical tugs, with a high degree of safety in operation. They are suitable for a variety of jobs including the most difficult operations in harbour and at sea. Up to the present over 15,000 SCHOTTEL-units producing more than 4 million hp of propulsive capacity have been delivered for ships of all types.

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General Ship Expands Its Facilities In South Boston

The General Ship Corporation of East Boston is expanding to a second major facility at EDIC/Boston's Boston Marine Industrial Park in South Boston, Mayor **Kevin H. White** announced recently. The corporation is making this significant new commitment to Boston's industry by taking a 10-year lease, with a three-year option to extend, on a 21-acre site that includes administrative and industrial buildings and the park's 675-foot drydock.

"The General Ship lease represents an expansion of industry in Boston Harbor and an investment that will be turned into good paying jobs for skilled labor," Mayor **White** said. The Boston Marine Industrial Park is one of three industrial parks in the city

owned and operated by the Economic Development and Industrial Corporation of Boston (EDIC/Boston), the city's lead agency for industrial development.

Brian F. Dacey, director of EDIC/Boston, noted that General Ship's lease has an unusual feature — a local employment incentive. Under this incentive, General Ship's rent will decrease by one percentage point, to a maximum of a 15 percent reduction, for each percentage of local employment above 50 percent. This is in addition to an agreement to eventually employ Boston residents in 50 percent of the jobs at the facilities.

General Ship will initially spend \$150,000 to install many improvements to maintain it as a first class ship repair facility. Mr. **Dacey** noted that this investment is a further indication of General Ship's commitment to the Port of Boston, and its appre-



Discussing the final lease arrangements between the Economic Development and Industrial Corporation of Boston (EDIC/Boston) and the General Ship Corporation are (L to R): **Keith A. Brown**, executive vice president and treasurer of General Ship Corporation; **Brian F. Dacey**, director of EDIC/Boston; and **James Harvie**, president and chief executive officer of General Ship. In background is the U.S.N.S. Observation Island, which is being serviced at the corporation's newly leased facilities.

ciation of the unique Boston Marine Industrial Park facilities, which include berthing facilities for ship crews.

The General Ship Corporation has been building and repairing ships since 1932. Over the past four years, the firm's major activity has been the overhaul and repair of complex U.S. Navy vessels. During this period, the company has employed an average of more than 200 persons, and has had annual sales averaging in excess of \$11 million.

Ownership of the company has recently passed from the decendants of the founder to a group of private investors headed by **Arnold L. Mende**, president of the Genesis Group of Waltham. Mr. **Mende** is chairman of the board. Operating principals include **James Harvie**, president and chief executive officer, and **Keith A. Brown**, executive vice president and treasurer. Both were formerly with Bath Iron Works Corporation.

National Marine Service Adds Sixth Drydock At Its Harvey Shipyard

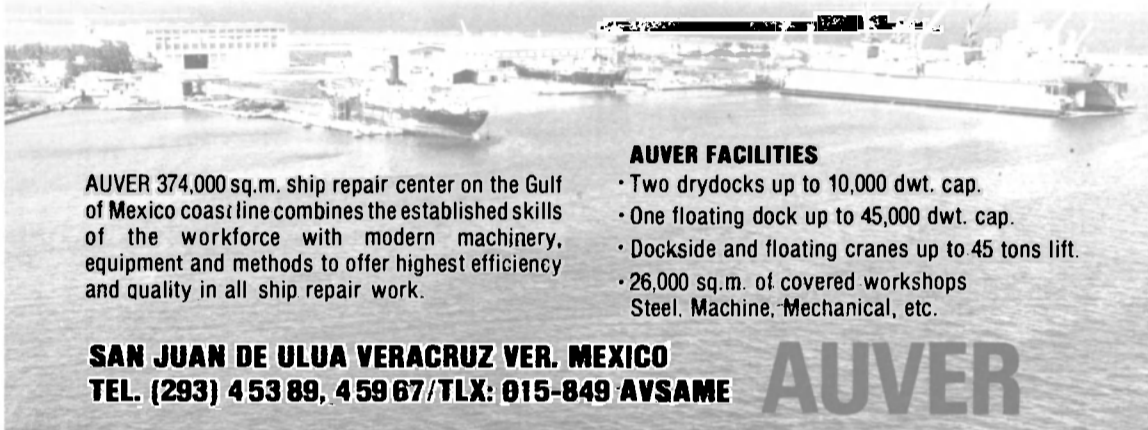


As the first in a series of planned improvements, a new 160-foot drydock (shown above) has been launched at the National Marine Service shipyard in Harvey, La. Located at the junction of the Harvey and Algiers Canals, the yard, formerly known as the Wall Shipyard, was acquired by National Marine earlier this year. The new drydock is the sixth at the shipyard. It will be used for boat and barge repairs.

According to **Glen Fornell**, general manager of NMS shipyard operations in New Orleans, the planned improvements for the months ahead include the dredging of the bayou channel, permitting deeper draft workboats and towboats to come to the yard for repairs; the rehabilitation of the yard's bulkheads on the bayou channel; the modification of two existing drydocks to handle larger barges and boats; and the improvement of the gas-freeing facilities located at the junction of the Harvey and Algiers Canals.

National Marine Service Incorporated is headquartered in St. Louis.

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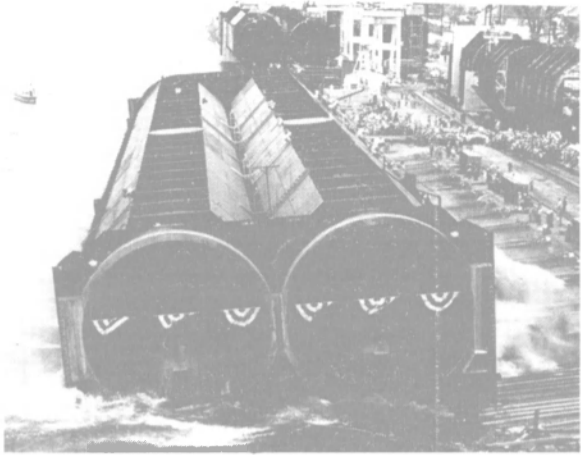
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TUNNEL TUBE TIDAL WAVE — Mammoth fabricated steel, double-tube section for the Interstate-95 Fort McHenry vehicular tunnel under the harbor at Baltimore was side-launched recently into the Susquehanna River following ceremonies at Wiley Manufacturing in Port Deposit, Md. The double-tube sections — each 42 feet high, 85 feet wide and about 320 feet long — represent the core of the tunnel. Wiley, a unit of AMCA International, will launch the fabricated steel sections on a one-tube-every-three-weeks schedule until delivery of the final sections early in 1983. This is the first of a total of 32 double-tube sections that will be fabricated at the Wiley yard to complete the project. Once launched, the tubes are taken by tugboat to an outfitting site in the Baltimore Harbor where they will be prepared for placement to form the tunnel under the harbor.

Floating Doughnut Crane Shown At Shugart Crane Conference



The introduction and demonstration of the revolutionary new Floating Doughnut Crane (shown above) was held recently as part of a day-long floating crane symposium hosted by Shugart Manufacturing, Inc., with the cooperation of American Hoist and Derrick Company, at Shugart's facility in Chester, S.C.

"The Floating Doughnut Crane is a new concept which, in the foreseeable future, will dramatically affect the design, construction, and operation of the entire marine construction industry," said Tom Triplett, the crane's inventor and president of Shugart. "The purpose of this symposium is to give port operators, design engineers, contractors, and dealers an opportunity to thoroughly evaluate this new tool and the prospects it offers for increasing productivity in the coming years," Mr. Triplett said.

Symposium speakers included Thomas A. Fridy Jr., vice president and project director of Lockwood Greene Engineers, Inc., who spoke on "Prospects for Marine Construction"; "Prospects for Port Expansion" was presented by D. Claude Baker, general manager for operations, South Carolina Port Au-

thority; "Overall Characteristics of Doughnut Cranes," by Bernard L. Jones, chief engineer for Shugart; "Flotation Characteristics of Doughnut Cranes," by Norman N. DeJong, president of Norman N. DeJong & Associates; and "Structural Characteristics of Doughnut Cranes," by Richard Juelich, chief engineer-product development for the Marine/Energy Division of American Hoist and Derrick Company.

For further information and free color brochure on the Doughnut Crane,

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New WABCO Bulletin Describes Control Systems For Diesel-Powered Vessels

A new full-color bulletin from WABCO Fluid Power Division, American-Standard de-

scribes and illustrates the new Logicmaster® propulsion control systems for use in diesel-powered vessels with air clutch type reverse gears. Logicmaster systems include interlocks and protective circuits to automatically provide proper engine and reverse gear operation without the need to rely on the operator to time the sequence of control lever operation. They prevent wear or damage from high-speed clutch engagement and engine stalling during reversal.

Standard Logicmaster systems include features such as governor power boost, cross-engagement interlocks, timed reversing interlocks, clutch pressure/engine speed interlock and soft-clutch engagement feature. Options include the addition of shaft brake control and proportional timed reversing interlocks.

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RCA Opens Marine Services Office In Morgan City, La.

RCA Service Company has announced the opening of a marine services office at 102 Freret Street, Morgan City, La. The office, which will cover the port city of Houma as well as Morgan City, will serve as a sales, installation, and service center for the leading brands of navigation and communications equipment. Equipment lease plans and fixed-price maintenance contracts will also be offered.

Weldon M. Vogt, manager of industrial electronic services sales, said that the new office is intended to serve both the offshore oil industry and Intracoastal Waterway traffic. It will complement RCA's five other port facilities on the Gulf, at Corpus Christi, Houston, Mobile, Port Arthur, and the New Orleans office in Gretna. Mr. Vogt added that much of the traffic out of Morgan City is headed up the Mississippi past Memphis, the location of another RCA marine services office.

Hans Schaefer Succeeds Arthur Stout As President Of Todd Shipyards



Hans K. Schaefer

Following a recent board of directors meeting, J.T. Gilbride, chairman and chief executive officer of Todd Shipyards Corporation, announced that on July 15, 1981, Hans K. Schaefer will assume the presidency of the corporation, succeeding Arthur W. Stout Jr., who is taking early retirement. Mr. Schaefer is presently vice president of the subsidiary, Todd Pacific Shipyards Corporation, and general manager of the Los Angeles Division. He joined Todd in 1968 and has served in increasingly important positions in ship construction in New York, Seattle, and Los Angeles.

Mr. Gilbride stated that while it was Mr. Stout's desire to spend more time attending to personal matters, he would remain a member of the board of directors, and his experience and expertise would be available for valuable assistance on many corporate matters.

Mr. Schaefer has had a distinguished career in shipbuilding. Born in Hamburg, Germany, he served his apprenticeship at the Howaldtswerke-Deutsche Werft

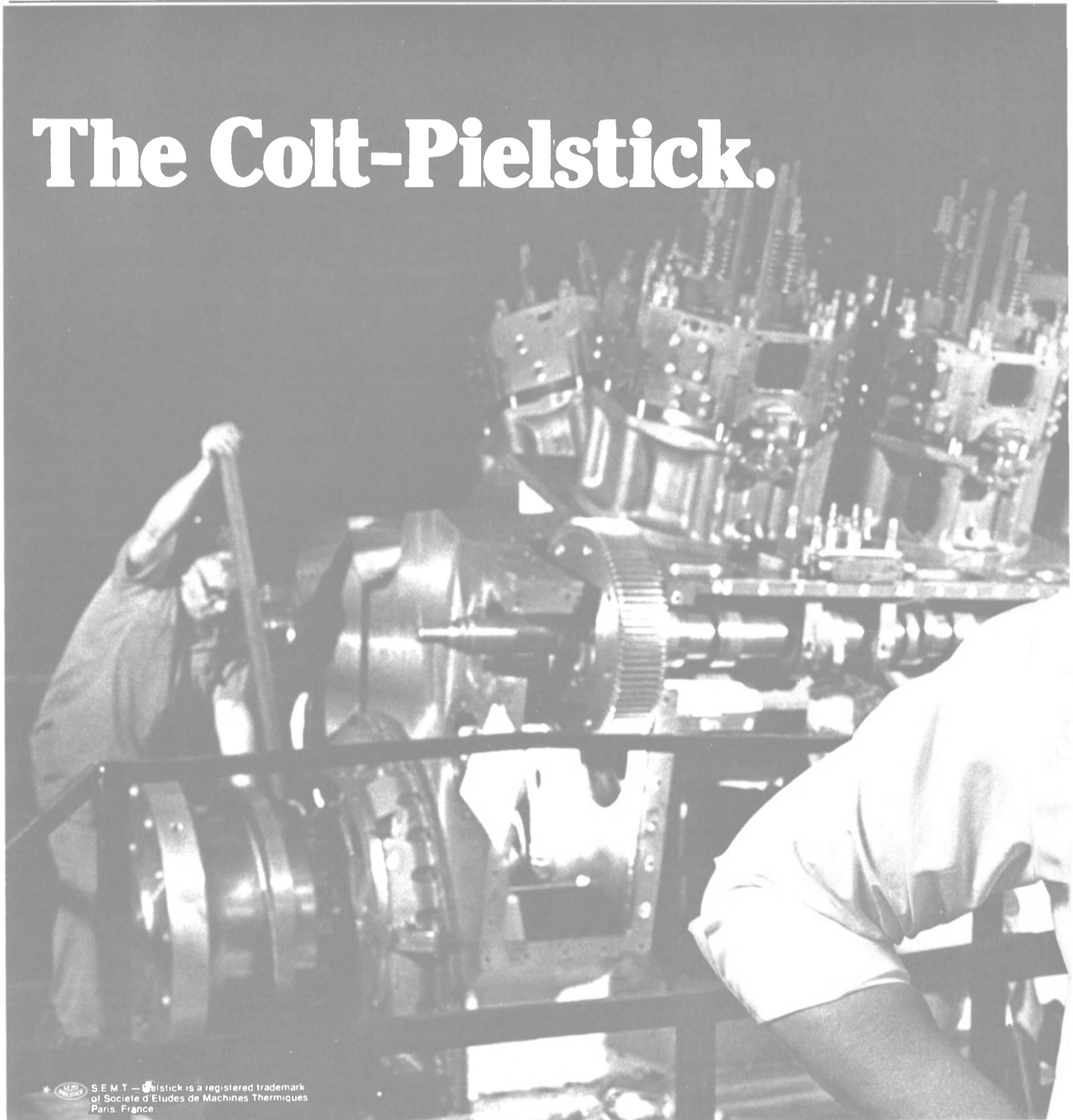
Shipyards in Hamburg, attending the Marine Engineering College concurrently, and in 1955 was awarded a degree in marine engineering. Emigrating to Canada in 1956, he worked successively at the Davie Shipbuilding Company, Quebec, Saint John Shipbuilding and Dry Dock Company, New Brunswick, and Canadian Vickers Ltd. in Montreal. In each he progressed to more responsible positions and at the same time continued his studies in na-

val architecture, applied electronics, and business management.

Mr. Gilbride stated that Mr. Schaefer's promotion is consistent with the corporation's plans to advance proven young managers to senior positions to provide long-term stable executive continuity. He, along with four incumbents, will be offered as management candidates for the board of directors at the annual meeting of shareholders to be held July 15.

Lennart M. Thorell, presently assistant general manager, will succeed Mr. Schaefer as general manager of the Los Angeles Division on July 15.

Todd Shipyards Corporation, the nation's largest independent shipbuilding company, operates shipyards in or near Seattle, San Francisco, Los Angeles, Houston, Galveston, New Orleans, and Brooklyn. The company is listed on the New York Stock Exchange.



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No one offers more flexibility in horsepower ratings. Fairbanks Morse offers you heavy duty Pielstick 4-cycle marine diesels with a 6,000 to 27,000 bhp rating range. Our

\$19-Million Overhaul Of Navy Ammo Ship Awarded To Braswell Shipyards

Braswell Shipyards, Incorporated, Mt. Pleasant, S.C., is being awarded a \$19,100,000 fixed price contract for extensive modifications and overhaul work on USNS Kilauea, a Navy ammunition ship. The U.S. Navy's Military Sealift Command is the contracting activity. (N00033-73-C-0007)

David Parrot To Head New Aldenships Division Of John G. Alden Firm

For the past several years, John G. Alden of Florida has been increasing its sales activity in the offshore tug and barge market. The increases have been primarily due to the knowledge and efforts of David Parrot, a 14-year veteran of the Alden organization. Alden was founded in

1909 by John G. Alden, Boston naval architect and builder.

To handle the increased volume, Alden of Florida president Frank Atlass has formed a separate Aldenships division, with Mr. Parrot as vice president and general manager. Joining Mr. Parrot will be Henry Reynolds Jr., most recently with Eller & Co. Mr. Reynold's experience fits well with the primary thrust of Aldenships business, which is foreign

and U.S. tugs, barges, and specialty vessels.

Aldenships headquarters is at 2182 S.E. 17th Street, Fort Lauderdale, Fla. 33316; (305) 525-0582, telex 510 955 9788.

Fabrikant Seeks Title XI On Towboats And Barges To Cost \$18.67 Million

Fabrikant/Conway Applicants, New York, has applied to the Maritime Administration for a Title XI guarantee to aid in financing the construction of two towboats and 35 jumbo hopper barges.

Jeffboat, Inc., Jeffersonville, Ind., was listed as the proposed builder of the twin-screw towboats, one 145 feet long and the other 160 feet. They are to be delivered in January and June 1982. The barges, all 200 feet long, have been delivered by Equitable Shipyards, New Orleans. All are intended for use on U.S. inland waters.

The requested guarantee is for \$15,192,000 of the total estimated cost of \$18,674,846 for all vessels. Up to 87½ percent of the cost of the barges and 75 percent of the cost of the towboats are eligible for Title XI guarantees.

Edward Walsh Named Asst VP And Controller At J.J. Henry Company



Edward B. Walsh

Edward B. Walsh has been elected assistant vice president and controller of the J.J. Henry Co., Inc., New York, N.Y., one of the nation's principal naval architectural and marine engineering firms. In his newly expanded role, Mr. Walsh will report to Robert Axelrod, vice president of finance, and will be responsible for companywide accounting, budgeting, reporting, taxes, insurance, benefits accounting, and data processing.

Mr. Walsh joined the J.J. Henry Co. in 1962 as manager of accounting in the New York Office. Moving with the Accounting Department when it was relocated to the Production Division Headquarters in Moorestown, N.J., in 1971, he advanced steadily through a number of increasingly responsible positions, becoming controller and manager of accounting and data processing in 1975, the office he held prior to his recent promotion.



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38D8-1/8 series opposed piston engines can deliver 700 to 4,200 horsepower. No one else comes even close.

So the next time you see a marine diesel manufacturer waving flags and shouting about superiority, don't be fooled.

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Engine Division

Second Occidental Tug/Barge Unit Christened At Avondale Yard

Christening ceremonies were held recently at Avondale Shipyards, Inc. for the integrated tug/barge unit Oxy Producer (shown at right), a 41,500-dwt liquid chemical and petroleum tanker, which was built for a subsidiary of Occidental Petroleum Corporation.

Mrs. Tazewell Shepard Jr., wife of Adm. Tazewell Shepard Jr., executive vice president of Occidental International Corporation, served as sponsor. Mrs. Shepard is the former Julia Ann Sparkman, daughter of Senator and Mrs. John Sparkman of Alabama.

Other principals involved in the christening ceremony included: Albert L. Bossier Jr., president of Avondale, who presided at the ceremony; Samuel Nemirow, assistant secretary of commerce for maritime affairs, who delivered the principal address; and Mrs. Cynthia Shepard, matron of honor.

With its tug locked into the

stern notch, the integrated unit has an overall length of 677 feet 4 inches, beam of 99 feet, and depth of 50 feet. Molded design draft is 36 feet, giving a displacement of 52,650 tons. Main propulsion is by two Colt/Pielstick 14PC2-5V400 diesels manufactured by the Fairbanks Morse Engine Division of Colt Industries. Each engine has a maximum continuous rating of 9,100 bhp at 520 rpm. These diesels are capable of operating on heavy fuel oil for maximum economy. On sea trials at 85 percent mcr, the vessel achieved a speed of 15½ knots.

The Oxy Producer is designed to carry superphosphoric acid (SPA) and other liquid chemicals in five stainless steel tanks, and petroleum products in 10 wing tanks. She will embark on her maiden voyage in the latter part of June, joining her sister ship, the Oxy Trader, in their first shipment of SPA to Russia. These



shipments will be made under one of several contracts between Occidental and the Soviet Union.

Occidental, a natural resources company under the leadership of Dr. Armand Hammer, chairman of the board and chief executive officer, is a major producer and distributor of agricultural chemicals. The corporation and its subsidiaries are engaged in a diversified range of activities that support the world's effort to meet the increasing demand for food and fiber. Its chemical division is one of the largest, diversified

chemical producers, providing industry with raw materials, intermediate and finished chemical products, technology, and engineering.

Avondale Shipyards is a subsidiary of Ogden Corporation. Although principally a shipbuilder, Avondale is a diversified company with facilities that include repair yards, a foundry, a special products division, steel sales, and a facility at Bayou Black near the Gulf that builds offshore drilling rigs.

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Principal participants at the Oxy Producer christening were (L to R): The Most Reverend James C. Carter, S.J., president, Loyola University; Albert L. Bossier Jr., president of Avondale Shipyards; Mrs. Tazewell Shepard Jr., sponsor; Adm. Tazewell Shepard Jr., executive vice president of Occidental International Corporation; Mrs. Cynthia Shepard, matron of honor; and Samuel Nemirow, assistant secretary of commerce for maritime affairs.

Megasystems To Provide Automation Package For Southern-Built Dredge

Megasystems, Inc. of Cleveland and Boca Raton, Fla., will design and manufacture the complete automation of an oceangoing, split-hull, suction trailing hopper dredge to be built by Southern Shipbuilding Corporation in Slidell, La. The instrumentation and control package will feature a distributed microprocessor architecture, which will greatly reduce shipyard cabling requirements.

Each of the eight stipulated intercommunicating local units will feature LED displays and solid-state electronics. As a result, the crew will have local readouts in the pump rooms and engine rooms in addition to those in the central control room and pilothouse.

This is the second total automation system built by Megasystems for Southern Shipbuilding. The first was installed aboard the dredge Dodge Island, a similar vessel, launched last year. It featured 10 intercommunicating units and a unique microprocessor-based drag-tending console.



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Haven Automation (HK) Ltd.
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ON THE COVER



Interlake's 'De Lancey' Christened— Longest Vessel On The Great Lakes

The motor vessel William J. De Lancey (shown above), at 1,013.5 feet the longest vessel on the Great Lakes, was christened recently. The vessel was built for The Interlake Steamship Company, which is operated by Pickands Mather & Company, Cleveland. Pickands Mather is a subsidiary of Moore McCormack Resources, Inc., Stamford, Conn.

Named in honor of William J. De Lancey, chairman and chief executive officer of Republic Steel Corporation, Cleveland, and christened by his wife, Sally Roe De Lancey, the vessel was designed and built by the AmShip Division of The American Ship Building Company at its Lorain, Ohio, shipyard.

"This new vessel will serve as a major element in fulfilling the 25-year haulage contract that we have signed with Republic," said Elton Hoyt III, president and chief executive officer of Pickands Mather. "The De Lancey represents one of the final links in the overall material-handling system Republic Steel will utilize to move iron ore from its source to the company's steelmaking complexes. The PM/Republic haulage contract calls for PM to carry up to seven million tons in 1981 and subsequent years."

The De Lancey joins PM's two other 1,000-foot supercarriers, the flagship James R. Barker and the Mesabi Miner. The De Lancey, as well as other vessels in the Interlake Steamship fleet, will carry Republic ore from Silver Bay and other Lake Superior ports to Re-

public's newly constructed Lorain Pellet Terminal at Lorain on Lake Erie.

The De Lancey's size is dictated by America's requirement to move raw materials as quickly and economically as possible. Her unparalleled capacity (60,500 long tons of iron ore and in excess of 65,000 short tons of coal per trip), coupled with her fast turnaround time (six hours) and operating efficiency, will play a major role in meeting that need. The De Lancey's beam of 105 feet leaves only 5 feet of clearance at the Poe Lock of the Sault Ste. Marie Canal, widest lock on the Upper Lakes.

The De Lancey has been designed to maximize cargo-carrying capacity while ensuring optimum operating efficiency and reliability. With all controls and crew quarters aft, maximum space has been devoted to cargo capacity. In effect, the ship is a gigantic powered box. Engine controls and communications are simpler and more direct compared with conventional forward-wheelhouse design.

The vessel is double-hulled below the loadline, and all fuels, lubricants and sewage systems are located within the inner hull as an added safeguard against spills in case of outer hull rupture. Nine ballast tanks are located along the sides of the ship between the inner and outer hull sections. Each vertical tank has its own pumping system with no interconnected piping between tanks, simplifying maintenance

and providing a high degree of reliability.

The ballast tanks are flooded with water when the vessel is under way without cargo, lowering it in the water for increased maneuverability. The tanks are also kept flooded during loading operations to keep the deck hatches at a required level for dock-side loading.

The huge cargo area is divided into five holds. A series of power-actuated gates in each hold feeds pellets or coal onto a conveyor belt that lies beneath the entire length of the cargo hold area. The De Lancey's unloading system is capable of discharging pellets at the rate of 10,000 tons per hour. The 260-foot boom can swing to either side for piling cargo ashore under high-speed unloading conditions.

Main propulsion power for the De Lancey is provided by two 8,560-bhp Colt-Pielstick diesel engines. Each engine is directly connected to a four-blade, 17½-foot-diameter controllable-pitch Bird-Johnson propeller through a specially designed reduction gear and shafting system.

Designers of the De Lancey were most concerned with two aspects of the main drive system—reliability and low maintenance. The result is a simple, unencumbered drive system capable of delivering power to the propellers efficiently and in a minimum of space.

The arrangement of completely independent drive systems for each engine optimizes overall reliability; if for some reason one engine is nonoperational, the other can still power the ship. To keep the drive systems simple but highly reliable, the four 800-kw, 480-volt main electrical generators are driven by separate Caterpillar diesel engines rather than off the main propulsion drive unit as is the case in many other vessels.

The De Lancey has a maximum capacity of 152,000 gallons of heavy fuel oil for main propulsion, and carries 31,000 gallons

of light diesel oil fuel for generator, heater, and boiler service.

Each controllable-pitch propeller assembly is fitted with four stainless-steel movable blades. An automatic pitch-control system hydraulically changes propeller pitch according to engine speed to provide for optimum running economy and to prevent overloading and stalling the engines when the vessel is heavily loaded at low speeds. For example, when the engines are at maximum throttle, the propellers are at maximum pitch. Conversely, at idle speed, the propellers are at zero pitch.

Single-lever control handles in both the pilothouse and engine room provide for combined control of engine speed and propeller pitch. Provision is also made for a split control of speed and (continued on page 14)

'WILLIAM J. DE LANCEY' MAJOR SUPPLIERS AND EQUIPMENT

Main propulsion engines, **Colt-Pielstick** model 16 PC2.3V marine diesel 2 x 8,560 bhp @ 520 rpm.
Main reduction gears, **Falk** (4.33:1). Flexible drive couplings, **Geislinger**. Main propulsion shafting system, **Bird-Johnson**.
Controllable-pitch propellers/hubs, **Bird-Johnson**.
Stern tube and strut bearings, **Ryertex**. Bow thruster, **Bird-Johnson**, Controllable-Pitch, Electric-Drive 1,500-hp. Ships' service diesel generator sets, Four 800-kw. Diesels-**Caterpillar** model D399-TA. Generators-**Columbia Electric**.
Emergency diesel generator set, 200-kw. Diesel-**General Motors Detroit Diesel** model 8V-71T. Generator-**Delco**.
Main switchboards, **General Electric**. Heating steam boilers, **Johnston Boiler**.
Unloading system, **Stephens-Adamson**. Sewage treatment plant, **St. Louis Ship FAST** model 40 D4.
Steering gear, **Sperry Marine**. Mooring Winches, **Lake Shore, Inc.** Anchor windlass, **Broehl Deck Machinery**.
Oil/water separator, **Hyde**. Joiner and insulation package, **Jamestown Metal Marine Sales**. Elevator, **Unidynamics**. Lifeboat, **Watercraft America**.



Mrs. Sally Roe De Lancey (second from right), smiles as champagne begins to spray the hull of her husband's namesake. Looking on are (L-R): Ann L. De Lancey, William J. De Lancey, Elton Hoyt III, and George Steinbrenner III.

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Interlake's De Lancey Christened

(continued from page 12)

pitch from the pilothouse and engine room. Separate control units connected to the central pilothouse unit are located on both the port and starboard bridge wings.

Maneuvering the huge 1,000-footer is simplified by the twin screws and the arrangement of

a rudder behind each propeller. The ship also can be steered by varying the speed of each engine. In addition, a 1,500-hp Bird-Johnson electrically driven bow thruster facilities docking by moving the bow to the right or left in much the same fashion as a tugboat.

Reversing is accomplished through the controllable-pitch propellers; the engines do not reverse. This system greatly shortens the time to generate a re-

verse response as compared with turbine-powered systems.

Due to the De Lancey's all-aft design and overall height of 118 feet, a personnel elevator whisks crew members from the engine control room level up the five decks to the level below the pilothouse.

The 31-man crew is housed aft in modern, comfortably furnished quarters. Officers have single rooms, with only some of the crew sharing a room. Living quar-

ters, the galley, and engineer's control compartment are all air-conditioned.

The onboard St. Louis ship FAST sewage treatment plant, which meets stringent Federal standards, produces completely clean effluent for discharge, or for temporary holding while the vessel is in waters where discharge is prohibited by local regulations.

Dravo Negotiating To Buy Operating Assets Of Nilo Barge Line From Olin

Dravo Corporation, Pittsburgh, announced recently that it is negotiating a definitive agreement to purchase substantially all of the operating assets of Nilo Barge Line, Inc., a subsidiary of Olin Corporation. Directors of Dravo and Olin have approved a letter agreement outlining terms of the cash transaction, the amount of which was not disclosed. Assets covered would include 180 dry cargo barges, five towboats, a trans-Gulf operation, and related supporting assets.

Robert Dickey III, Dravo chairman and president, said that the proposed acquisition would significantly increase the Pittsburgh-based firm's overall involvement in water transportation. The diversified organization already owns one of the larger barge lines on the Mississippi-Ohio River system, Dravo Mechling Corporation, which operates a fleet of 18 towboats and 575 barges.

Brochure Available On Foster Wheeler Boilers And Auxiliary Equipment

Foster Wheeler Energy Corporation, Livingston, N.J., has just published a 16-page, full-color brochure describing and illustrating its full range of marine boilers and auxiliary equipment including condensers, steam jet air ejectors, inert gas generators, and flue gas scrubbers. The booklet contains specifications, diagrams and many full-color, cut-away illustrations.

Foster Wheeler offers a complete range of boiler designs. Each unit is individually engineered to achieve the operating requirements of the specific vessel it will be powering.

Starting with the basic "D" type boiler, each derivative design was developed to make the greatest contribution to vessel operating profit, considering cargo capacity, manning, financing, and life cycle. Foster Wheeler designs and manufactures other major marine power plant components and can integrate the boiler and these components into a power system that will generate the required shaft horsepower in a most cost- and fuel-efficient way.

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SF Welding & Fabricating Gets \$20.5-Million Navy Oiler Overhaul Contract

San Francisco Welding and Fabricating, Incorporated, San Francisco, Calif., is being awarded a \$20,482,252 fixed-price contract for extensive modifications and overhaul work on USNS Ponchatoula, a Navy oiler. The U.S. Navy's Military Sealift Command is the contracting activity. (N00033-77-C-0015)

Vincent Ferraro Named Estimating VP For Savannah Shipyard

David H. Green, president and chief executive officer of Savannah Shipyard Company, has announced that Vincent J. Ferraro Jr. has been elected vice president-estimating for the Savannah, Ga., company and continues with his present duties and responsibilities as chief estimator. He is responsible for the Estimating Department, which encompasses ship repair, conversion, and industrial repairs.



Vincent J. Ferraro Jr.

Mr. Ferraro joined Savannah Shipyard as a full-time employee in 1956 when he was assigned to the Engineering Department. Prior to that he had worked in the Machinist Department during the summers while attending college. In 1958, he was transferred to the Production Department where he was assigned as a ship supervisor. Following that assignment, Mr. Ferraro began training in the Estimating Department in 1961. He was later promoted to estimator in 1966 and became chief estimator for the shipyard in July 1979.

Paceco Container Crane Arrives At Massport's Castle Island Terminal

Massport executive director David W. Davis has announced the arrival of a special cargo for the Port of Boston. The first of two low-profile container cranes that will service Massport's Castle Island Marine Terminal is now in port.

The crane was built by Paceco, Inc. at their Gulfport, Miss., factory and shipped by barge to Boston. The trip up the Eastern seacoast took nearly two weeks.

According to Massport's port director Martin C. Pilsch Jr., the crane's arrival is an important milestone in the expansion of the

Castle Island Marine Terminal. "This equipment — the 40-long-ton cranes — helps make Massport's development plans a working reality."

The new Castle Island container facility is due to open this fall and is part of Massport's \$100-million seaport expansion program. Massport is making a substantial investment in new and existing maritime facilities to insure that the Port of Boston remains a thriving seaport.

Biehl Opens New Office In Corpus Christi—John Durrenberger Is Manager

Biehl & Company, a major independent steamship agency, has opened an office in Corpus Christi, Texas, it was announced by Don Waheed, vice president/West Gulf general manager. John Durrenberger has been named manager of the new office. He joined Biehl in 1958 in the Beaumont office and continued there for five

years. Since that time he has held other management positions in the steamship industry, with a total of 22 years' experience.

According to Mr. Waheed, the new Corpus Christi office is the 14th office in the Biehl network, and will provide a full range of services to shippers using the port. The office is located at 3833 South Staples, Suite 41. The mailing address is P.O. Box 6774, Corpus Christi, Texas 78411; (512) 855-5621, telex: 767-708.

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CW Cost (\$)	9.00	44.00	134.00	224.00	358.00	(1) Containership using CW for Traffic Transmission
Telex Cost (\$)	9.00	9.00	15.00	24.00	39.00	(2) Tanker on Persian Gulf/Bahamas run
Savings Per Day (\$)	—	35.00	119.00	200.00	319.00	(3) Containership on the U.S. Coast/Europe run
Savings Per 350 Day Year (\$)	—	\$12,250	41,650	70,000	111,650	

Above data abstracted from MARAD Office of Advanced Ship Operations study prepared for the Council of American-Flag Ship Operators, 1980

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For a tanker on the Persian Gulf run, transmission of ETA, weather data, arrival/departure reports, and requisitions average more than 300 words per day. CW transmission costs: \$134. Telex: \$15. For a saving of \$119 per day. Or \$41,650 per 350 day year.

A containership on the Europe run — making 2 to 3 times as many trips in a year, and hitting more ports per trip — averages more than 800 words per day. CW cost: \$358. Telex cost: \$39. For a saving of \$319 per day. Or \$111,650 per year.



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To sum up. Philips telex, with its cost of only 4½ cents per word, and speed of 66 words per minute will make it convenient and easily affordable to send and receive a broad range of pertinent shipboard information — stowage plans, cargo manifests, loading and discharging reports, equipment control data — rapidly, accurately, and inexpensively. And give you the data you need to administer and control your entire fleet. From your office.

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Bay Shipbuilding Completes EMD-Powered Columbia Star

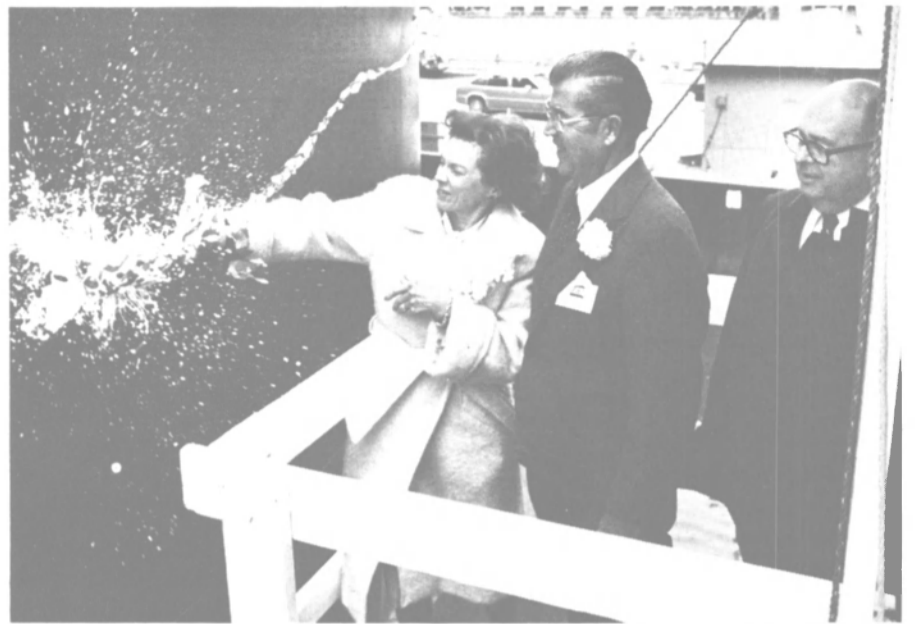
Oglebay Norton Company's giant new Great Lakes vessel, the 1,000-foot Columbia Star, was christened recently at Sturgeon Bay, Wisc. The vessel's sponsor was Mrs. John J. Dwyer, wife of the president of Oglebay Norton. The ceremonies officially named the former Hull No. 726 to honor the owner's Columbia Transportation Division and the brig Columbia, which carried the first cargo of iron ore through the Soo Canal in 1855. The vessels of the Columbia fleet, one of the largest on the Great Lakes, bear a bright red star on their stacks.

The new supercarrier was built by Bay Shipbuilding Corporation, a subsidiary of The Manitowoc Company, Inc., at Sturgeon Bay. Construction began in the fall of 1979, the keel was laid on March 3, 1980, and the hull was floated out of the construction dock on November 8, 1980.

The main propulsion plant was

supplied by the Electro-Motive Division of General Motors. Four 20-645-E7B diesel engines, developing a total of 14,000 bhp at 900 rpm, will move the vessel at a service speed of 15 mph. The two KaMeWa controllable-pitch propellers were supplied by Bird-Johnson. Ship's service electrical power is supplied by Caterpillar-diesel-powered generators.

A self-unloading vessel, the Columbia Star is equipped with a 265-foot conveyor boom that swings over the side to discharge up to 10,000 tons of cargo per hour. The new vessel will carry 61,000 tons of cargo at maximum draft, exceeding the combined trip capacity of the four smallest vessels in the company's present fleet. With a beam of 105 feet, the big ore carrier will maneuver with the assistance of bow and stern thrusters utilizing stainless steel, controllable-pitch propellers



Mrs. John J. Dwyer christens Oglebay Norton's new ore carrier Columbia Star. Looking on are Oglebay Norton president John J. Dwyer (center) and Arthur Zuehlke, president of Bay Shipbuilding Corporation.

driven by 1,500-hp electric motors.

Master of the Columbia Star is Capt. Joseph J. Toreki of Perry, Ohio, who has sailed with the Columbia fleet since 1948. Chief engineer is Norman E. Jensen of Clearwater, Fla., who joined the company in 1954.

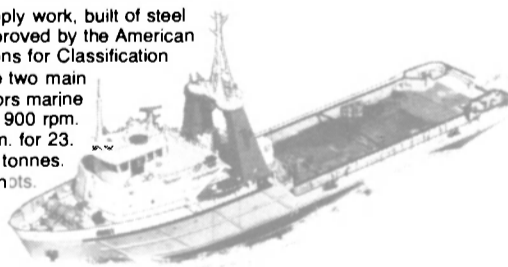
Oglebay Norton has been operating Great Lakes vessels since the establishment of its Columbia Steamship Company in 1920. The first self-unloaders joined the Columbia fleet in the mid-1930s. Addition of the Columbia Star brings the Oglebay Norton fleet strength to 17 vessels.

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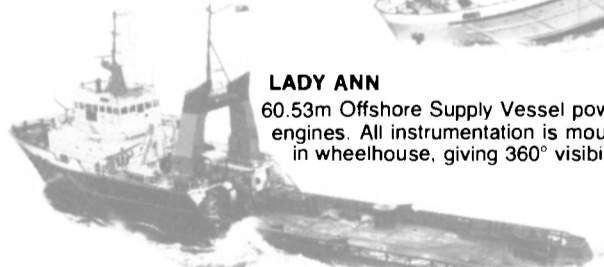
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NASSCO Lays Keel Of First In Series Of Product Carriers For American Tankships

A recent keel-laying ceremony at National Steel and Shipbuilding Company (NASSCO) in San Diego initiated construction of the first in a series of 37,500-dwt diesel-powered product carriers being built by NASSCO for American Tankships, Inc., a subsidiary of Ingram Corporation, New Orleans. Cyrus Webb, president of American Tankships, struck the initial arc signaling the beginning of construction. C. Larry French, president and chief oper-

ating officer, represented NASSCO in the ceremony.

The product carrier is a new NASSCO design designated the Ingram Class. It will be 658 feet in length, 90 feet in beam, have a 36-foot draft, and will carry 300,000 barrels of refined petroleum and petrochemical products from refineries to distribution centers. It will be powered by a Sulzer type slow-speed diesel.

In December 1979, NASSCO signed a contract with American



At recent NASSCO keel-laying ceremony (L to R): Russell Ramsey, operations manager, American Tankships, Inc.; Trevor Lucey, chief inspector, American Tankships; Phil Thorpe, American Bureau of Shipping; Capt. C.S. Wetherell, U.S. Coast Guard; C. Larry French, president and chief operating officer, NASSCO; A. Montes, welding foreman, NASSCO; Cyrus Webb, keel-layer and president, American Tankships; Robert Carson, vice president, American Tankships; Jeremy White, engineering manager, American Tankships; and A.W. Lutter, vice president, marketing, NASSCO.

Tankships for construction of up to five Ingram Class product carriers. NASSCO has received firm commitments for two of these vessels. American Tankships still has the right under the contract to cancel any of the remaining three vessels up to stated dates between now and June 1982.

The vessels will incorporate the most modern equipment available and will meet the latest safety and environmental protection standards, including double bottoms, a clean segregated ballast system, an inert gas system, a sewage treatment plant, collision-avoidance radar, and a backup steering system.

Bryant Named Manager Of McGraw-Edison's New Marine Marketing Dept.



Fred G. Bryant

The Service Group of McGraw-Edison Company recently announced the establishment of its Marine Marketing Department with headquarters in Fairfield, N.J. McGraw-Edison Service is a new force in the marine equipment repair field, combining the mechanical repair capabilities of Worthington Service with the electric repair capabilities of National Electric Coil.

The Service Group maintains service shops in many major cities with particular marine locations in Seattle, Portland, San Francisco, La Mirada, Calif., Baton Rouge, Fort Lauderdale, Charlotte, N.C., Philadelphia, Baltimore, Fairfield, N.J., and Boston. The service centers specialize in the repair of marine mechanical equipment such as pumps, compressors, turbines, heat exchangers, and valves, and electrical equipment such as motors, generators, and controllers.

Fred G. Bryant has been appointed manager of marine marketing with offices in Fairfield. He started his career with Worthington Corporation in 1951 as a design engineer. Prior to his recent appointment with McGraw-Edison Service, he had been a sales engineer and manager of Navy prime contract sales with Worthington Pump Corporation.

Three New Technical Reports Available From Ship Structure Committee

The Ship Structure Committee, an Interagency Advisory Committee dedicated to improving the structure of ships, has recently

published three new technical reports that are available free of charge.

SSC-297, "Evaluation of Liquid Dynamic Loads in Slack LNG Cargo Tanks," presents a review of worldwide scale model sloshing data and reduces the data to a common format for the purpose of design load coefficients. Additional scale model laboratory experiments have been conducted to supplement the available model sloshing data.

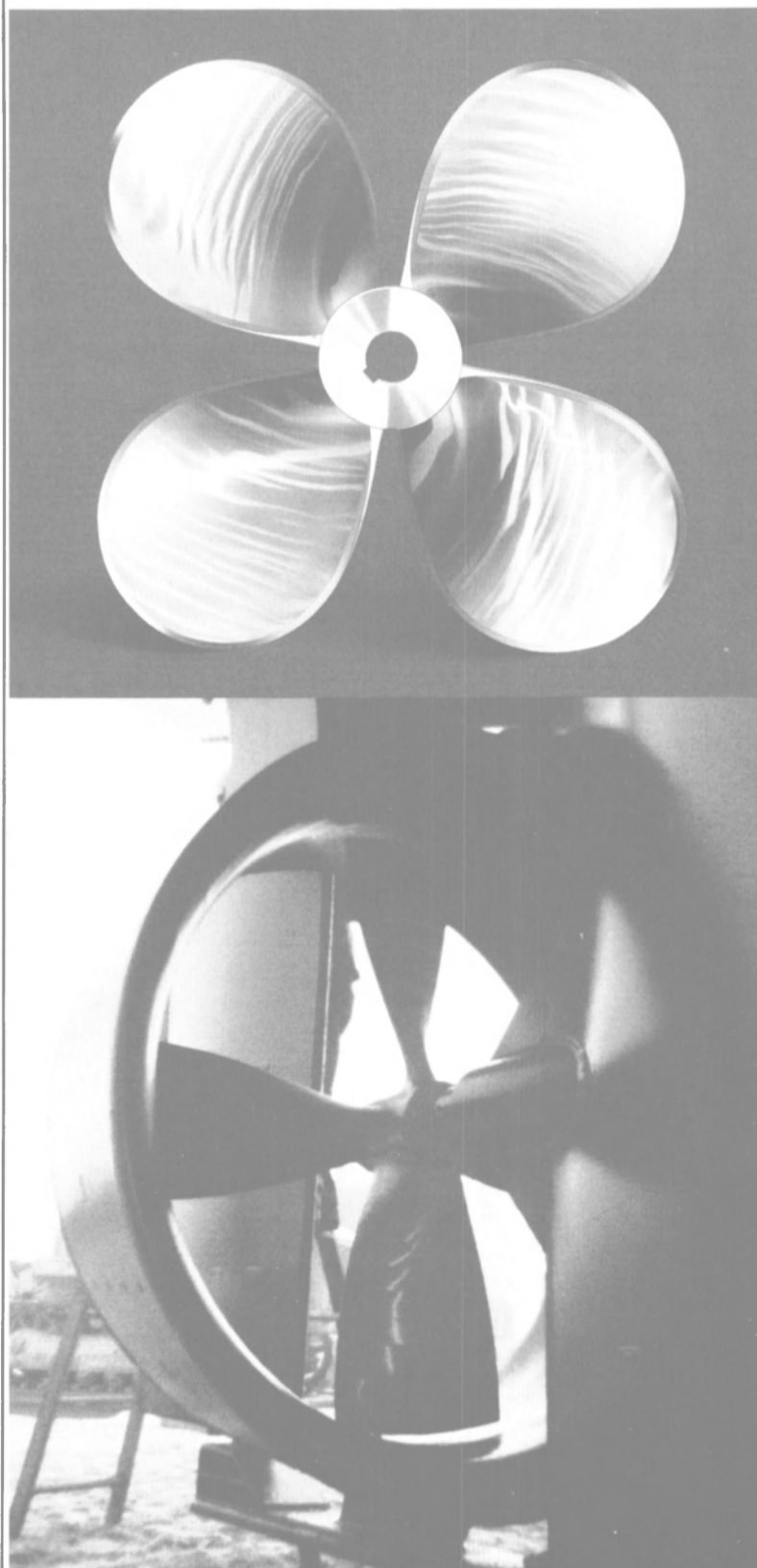
SSC-298, "Investigation of Steels for Improved Weldability in Ship Construction—Phase 1," is the initial effort of an ongoing project to minimize heat affected zone and weld-metal property degradation for high deposition rate welding. Two production steels and 20 laboratory heats of steels of various chemical compositions have been recommended for further examination.

SSC-299, "Ultimate Strength of a Ship's Hull Girder in Plastic

and Buckling Modes," analyzes limiting conditions beyond which a ship's hull girder will fail to perform its function. Vertical and lateral bending moments and torsional moments are used to develop a procedure for estimating the ultimate capacity of the hull.

For copies of these reports, an index of past reports, or further information, contact: Secretary, Ship Structure Committee, U.S. Coast Guard Headquarters, G-MMT/13, Washington, D.C. 20593.

GET FEDERAL HELP TO SAVE ENERGY!



With fuel supplies costly and uncertain, you have to do everything you can to save energy, because your efforts can mean the difference between profit and loss. That's why, to get maximum propeller efficiency, you should get with Federal.

Federal propellers are designed and carefully manufactured to the most exacting standards. We offer a FREE engineering service that assures the exact prop installation to best suit your engine, hull and use requirement. As a result, you get the most from every drop of fuel and prolong the life of a properly maintained power plant, as well.

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**Penske Offers Brochure
On Diesels/Gas Turbines
For Marine/Offshore Power**

Penske Energy and Engines Group of New York, Philadelphia, Houston, and Cincinnati offers a 12-page, full-color brochure describing and illustrating the line of General Motors and General Electric marine propulsion engines and generator sets that the group engineers, packages, and

distributes. The companies comprising the Penske Group are Penske GM Power, Inc.; Penske Detroit Diesel Allison, Inc.; and Penske Power System, Inc.

As an authorized distributor and packager of GM Detroit Diesel engines, Penske offers a complete line of diesel generator sets for standby and prime power systems. Each unit is custom-engineered and thoroughly tested, utilizing the latest and most advanced technology. Penske elec-

trical engineers design and build switchgear and controls to match each generating system.

A Detroit Diesel Allison manufactured and Penske engineered engine is available for all workboat applications. They span a range from 73 bhp maximum continuous rating at 2,400 rpm for the 3-53 engine to the 16V-149 with mcr of 900 bhp at 1,800 rpm.

For a free copy of the Penske brochure,

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**Subsidy Approved On
USL Conversion Job
To Cost \$5.3 Million**

The Maritime Subsidy Board has approved the award of a \$2,569,934 subsidy to Maryland Shipbuilding and Drydock Company for reconstruction work on the United States Lines, Inc., containership American Merchant. The Baltimore shipyard is increasing the ship's container capacity from the equivalent of 1,028 twenty-foot units to 1,340 TEUs. The ship also is being modified to carry 40-foot containers in its holds.

The grant, under the construction-differential subsidy program, amounts to 48.56 percent of the shipyard's contract price of \$5,291,934 for the work. In addition, the Federal Government will pay \$244,187 for the installation of certain military features requested by the Department of the Navy. As a condition of the subsidy, United States Lines will offer to enroll the vessel in a sealift readiness program approved by the Secretary of Defense.

**Consolidated Inland Opens
East Division Office—**

R.R. Simms Named Manager

Phillip Stringer, president of Consolidated Inland Marine, Inc., Beaumont, Texas, has announced the opening of an East Division office in the Mobile area. Located at 5950 Granada, Satsuma, Ala., the office will handle transportation of petroleum cargoes between New Orleans and all points east, including Tombigbee and Black Warrior River systems. Crewing of boats also will be managed by this office.

Mr. Stringer also announced the appointment of **Richard Ray Simms** as manager of the East Division office. Mr. Simms has worked in the marine transportation business as an operating and administrative officer for 17 years.

Consolidated Inland Marine is a petroleum barge company operating on the Intracoastal Canal and inland river systems of Texas, Louisiana, Mississippi, Alabama, Arkansas, and Oklahoma.

**El Paso Promotes Three—
Harry Ray Named VP
Of El Paso Marine**

The El Paso Company, Houston, has announced the election of **David F. Mackie** as a senior vice president of the company, **Martin R. Engler Jr.** as an executive vice president of El Paso Natural Gas Company, and **Harry W. Ray** as a vice president of El Paso Marine Company. The latter two companies are subsidiaries of The El Paso Company.

Mr. Engler, formerly an executive vice president of El Paso LNG Company, will be responsible for operations, engineering,

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and gas supply functions for El Paso Natural, the company's natural gas transmission unit.

Mr. Mackie, who will remain a senior vice president of El Paso Marine, will be responsible for the disposition of the company's LNG facilities, while Mr. Ray, formerly an assistant vice president of El Paso Marine, will be responsible for the remaining operations and engineering functions of that company. In February this year the company announced the discontinuance of its LNG project, and the assets are pending disposition.

Port Of Oakland Awards \$2.3-Million Contract For Terminal Expansion

The Port of Oakland has awarded a contract to the firm of Gallagher and Burk, Inc. of Oakland, Calif., to carry out one phase of terminal yard construction for the new 42-acre Charles P. Howard Container Terminal now taking shape in the Port's Inner Harbor. The \$2.3-million contract calls for the construction of about 21 acres of rocked terminal yard adjacent to the 1,700-foot-long wharf. Other contracts will be awarded to pave the 21 acres and the remainder of the 42 acres.

The Howard Container Terminal, which embraces both the former Howard Terminal and the former Grove/Market Street Terminal, will have two 850-foot-long container berths. A third berth, which is being retained with a cargo shed from the Grove/Market Street Terminal, will serve breakbulk vessels. The terminal will be served by two container cranes being manufactured in Japan by Hitachi America Limited.

Serrie Joins Levingston As VP Of Operations

Joe Barrios, president of Levingston Shipbuilding Company, announced recently that John Serrie has joined Levingston as vice president of operations of the Levingston Shipbuilding Company.



John Serrie

Mr. Serrie brings a wide range of experience to Levingston from his many previous management positions at major shipyards in the U.S.

Born in New Jersey, he attended college at both Georgia Tech and Massachusetts Institute

of Technology under the Navy's V-12 Program, where he earned his degree in naval architecture and marine engineering.

Shortly after his graduation, Mr. Serrie entered active duty in the Navy and served as a naval officer both in World War II and in the Korean Conflict.

Mr. Serrie joined the Electric Boat Division of General Dynamics in 1953, where he advanced to the position of director of design engineering with responsibility

for an organization of 3,500 engineers and designers.

In 1968, he joined Ingalls Shipbuilding as vice president of engineering. From 1971 to 1974 he was vice president of operations for the company, managed a workforce of 15,000 people and delivered one-third of the commercial vessels produced in the United States in that period.

Mr. Serrie became president of Seatrain Shipbuilding in 1974. During his tenure at Seatrain,

the company built and delivered three very large crude carriers (VLCC) each of 225,000 deadweight tons. These ships, at that time, were the largest vessels ever built in the United States.

He left Seatrain in 1978 to do consulting work on commercial shipbuilding programs in Japan, Norway and Sweden, and subsequently became an associate professor in the Department of Marine Technology at Mississippi State University.

MVI OILS

MVI oil has been the oil for medium-speed diesels for nearly 50 years



MVI Caprinus® R Oil is Shell's best for tow boats powered by the newest (or oldest) medium-speed diesels.

For almost a half-century, engine builders and operators alike have preferred MVI (medium viscosity index) oils for medium-speed diesels. Carbon deposits formed when using MVI oils tend to be soft and to slough off with normal engine operation. Deposits formed using HVI (high viscosity index) oils tend to be hard and continue to build up in the engines. In two-stroke units, hard deposits can block ports to the point that engine output suffers. Excessive ring groove fill can lead to bore polishing, broken rings and increased oil consumption.

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Shell has just completed a new plant doubling its MVI base stock capacity. Although engine manufacturers have broadened VI limits in their engine oil recommenda-

tions in recognition of a general MVI shortage - you do not have to accept an HVI oil.

Shell's new plant, combined with the increased use of oil analysis by operators to help conserve oil, means there will be enough MVI Caprinus® R Oil for the foreseeable future.

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- Shell lubricants for motor vessels (SOC: 122-79)
- Shell Marine Jobber Directory (SOC: 127-79)
- MVI marine mailer (SOC: 201-80)
- Maritime Reporter reprint (SOC: 211-80)
- MVI Questions & Answers (SOC: 204-81)

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Among the hosts and visitors at recent Iotron demonstration in New York were (L to R): Edward Perkins, technical sales, Iotron; Warren Signell, Roland Marine Inc.; William McLean, M. Rosenblatt & Son, Inc.; Juan De Mena and Capt. Alfred E. Fiore, Republic of Panama; and John C. Herther, Iotron vice president-international sales.



Iotron Conducts ARPA Demonstration In New York City

Interest in Automatic Radar Plotting Aids (ARPA) is growing rapidly. This was proven recently at Seamen's Church Institute in New York City where Iotron Corporation of Bedford, Mass., manufacturer of the DIGILOT, demonstrated its 40-target model. This is the same deluxe model chosen by Shell for its multi-million-dollar order to outfit 80 ships.

Among other requirements, the U.S. Port and Tanker Safety Act requires that ARPAs be installed on all tankers over 10,000 gross tons entering U.S. waters, by July 1, 1982. Iotron, which began producing the first DIGILOTS

more than 10 years ago, has introduced a lower-priced, 20-target model that is said to be built to the same high quality equipment standards as the deluxe model. DIGILOT is known for high reliability, availability, and low cost of service.

All ARPA manufacturers have increased their production capacity significantly, but the order books are filling rapidly now that the U.S. deadline is approaching. If one message came through during the Iotron demonstration, it was "order early."

For further information, Write 49 on Reader Service Card

First Of Five Hydrofoil Combatants Launched By Boeing Marine Systems

The patrol hydrofoil missile ship USS Taurus (shown above), first of five PHMs under construction for the U.S. Navy, was launched recently at the Seattle facility of Boeing Marine Systems. The vessel was christened by Mrs. John D.H. Kane Jr., wife of Rear Adm. John D.H. Kane Jr., USN (Ret.), director of Navy history and curator of the Navy Department, who was principal speaker at the event.

Taurus (PHM-3) and four sister ships will join the USS Pegasus (PHM-1) to complete a six-ship squadron of hydrofoils to be homeported in Key West, Fla. She

has an overall length of 131 feet, a beam of 28 feet, and will displace 230 tons.

In her hullborne mode, Taurus will be powered by two diesel engines through waterjets. When foilborne, she will be powered by a gas turbine engine through a single waterjet, and will be capable of speeds in excess of 40 knots.

The high speed of the PHM, extraordinary maneuverability, and small radar cross section give it unique advantages with respect to survivability and attack capability. With a crew of only 21 on a PHM and total six-ship squadron personnel fewer than that of one destroyer, the risk to men and material is at a minimum, while high speed and increased numbers of ships can greatly expand surface patrol effectiveness.

Pegasus, in service with the Navy since June 1977, has clearly demonstrated that the PHM can play a cost-effective role in achieving an increased, balanced naval force. As a surface warfare ship, the high fire rates of the PHM's eight Harpoon missiles and 76-mm gun provide it with the same mission kill capability as much larger surface combatants.

Houtech Seeks Title XI On Jackup Workover Rig To Cost \$16.6 Million

Houtech Limited IV, a subsidiary of Houtech Well Service, Inc., both of Houston, has applied to the Maritime Administration for a Title XI guarantee to aid in financing the construction of a 120-foot, jackup workover/drilling rig intended for operation in the Gulf of Mexico. Bethlehem Steel, Beaumont, Texas, is the proposed builder, with delivery scheduled for September 1982.

The requested guarantee is for \$12 million, or up to 75 percent of the \$16,632,000 estimated cost of the rig.

NEW DURAPOX[®] MARINE WATERBASE NON-SKID



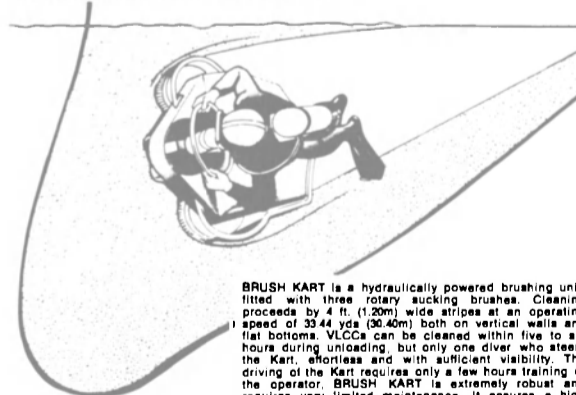
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Brownsville, Pennsylvania 15417

Phone: (412) 785-6100

EDO Awarded \$4-Million Navy Contract For SILANT Improvement Program

EDO Corporation, College Point, N.Y., is being awarded a \$3,985,824 cost-plus-fixed-fee contract for the AN/SQR-18A(V) Ships Interference Limiter and New Tail (SILANT) Improvement Program. The Naval Sea Systems Command is the contracting activity. (N00024-81-C-6040)

Levingston Reorganized—Barrios, Covington And Wise To Head Three Units

Levingston Shipbuilding Company officials have announced that a new corporate organization, Levingston Industries, Inc., has been formed and will be headquartered in Orange, Texas. The formation of three wholly owned subsidiaries of Levingston Industries was also announced. They

are: Levingston Shipbuilding Company, headquartered in Orange; Texas Gulfport Shipbuilding Company, headquartered in Port Arthur; and Levingston Marine Corporation, headquartered in Annapolis, Md.

Joe Barrios was named president of Levingston Shipbuilding, **Don Covington** president of Texas Gulfport Shipbuilding, and **Joe Wise** president of Levingston Marine. Each has made a major con-

tribution to Levingston's continued successful growth.

Ed Paden, president and chief executive officer of the parent company, announced the change as part of an overall restructuring designed to keep the operating units small enough so that the individual worker can retain his sense of identity and personal value in the company.



Joe Barrios

Mr. **Barrios**, appointed president of Levingston Shipbuilding, is a 32-year veteran of Levingston. He joined Levingston in 1948 and over the years worked in virtually all of the departments of the yard as timekeeper, estimator, buyer, cost accountant, controller, manager of planning and estimating, vice president-contract administration, vice president of Commercial Ships Division, and currently as vice president of shipyard operations.



Joe Wise

Levingston Marine, headed by Mr. **Wise**, will be dedicated to the provision of all types of engineering services to both commercial, offshore, and naval shipbuilding activities.



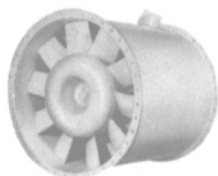
Don Covington

Mr. **Covington** has been vice president of the Marine Products Division of Levingston for the past year and a half. The Texas Gulfport Shipbuilding Company that he now heads consists of three entities including Texas Gulfport located in Port Arthur, the Industrial Products Division at Woodville, Texas, and the Levingston Armadillo Plant at Tyler, Texas.

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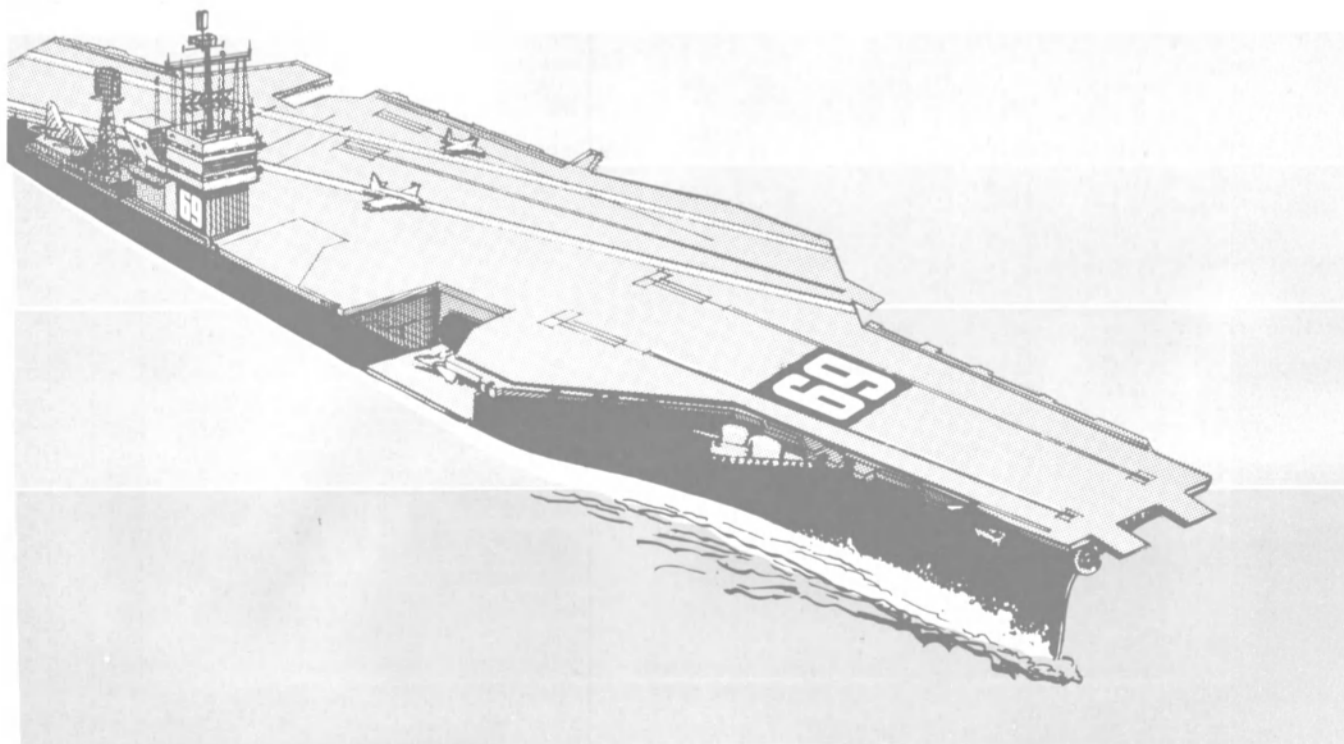


Rugged, top-performing JOY axial, centrifugal and propeller fans are specially built for shipboard ventilation applications.

JOY fans are built with aluminum rotors cast in our own

quality controlled foundry, heavy gauge casing and flanges. Rigid quality control standards and stringent testing procedures consistently assure top-quality fans.

Standard JOY fans have full approval of the U.S. Navy and U.S. Maritime Administration. Whether you need a standard or custom designed fan for navy or maritime applications contact Joy Manufacturing Company, Air Moving Products, New Philadelphia, Ohio 44663.



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Here's how it works. Before we ship your inert gas generator, it is operated and tested under precise in-service conditions. The quantity and quality of the gas produced is analyzed. So you will know, even before installation, that your unit will reliably meet Coast Guard and IMCO standards.

Or if your flue gas is of sufficient quantity and proper quality, you may be able to utilize the Foster

Wheeler flue gas scrubber. This system employs a highly efficient triplex scrubber that washes, cools and desulfurizes boiler stack gases. The clean, processed gas provides an inert gas blanket that prevents ignition for combustible cargoes.

To bring you the best of both systems, Foster Wheeler has paired its fifty years of marine boiler experience with that of Moss Rosenberg Verft. This Norwegian company has already installed more than 150 generators and scrubbers on ships the world over.

Together, we offer you the most efficient designs available anywhere. With proven safeguards that

assure only non-combustible gas is distributed.

Since Foster Wheeler offers both inert gas generators and flue gas scrubbers, you can rely on us for an objective evaluation to assist you in the selection of the equipment best suited to your operation.

And no matter which system you specify, you know you're getting a proven performer.

For more information, write Foster Wheeler Boiler Corporation, Livingston, New Jersey 07039.

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**This is no place
to test an inert gas system.**



Ronald Bublick Named Vice President Of Bultema Marine Transportation



Ronald G. Bublick

Stanley J. Andrie, president of Bultema Marine Transportation Inc., has announced that Ronald G. Bublick was named vice president. Mr. Bublick reports directly to Mr. Andrie and in this position, is responsible for the day-to-day direction of the company. Bultema Marine, a subsidiary of The Canonic Companies, Inc., specializes in marine transportation systems and also provides towing, salvage, and icebreaking services.

Mr. Bublick joined the company in 1979 as manager of marketing services. In 1980, he was promoted to director of marketing and sales. Prior to this, he was a principal in the consulting firm of Bublick & Bublick, Benton Harbor, Mich.

N.W. Dangerfield Joins Eller & Company As Corporate Traffic Manager

Eller & Company, Inc., Fort Lauderdale, Fla., has announced the appointment of Norris W. Dangerfield as corporate manager-traffic. Mr. Dangerfield was employed by Carolina Shipping Company from 1956 to 1957. Following a tour of duty with the United States Army, he returned to Carolina Shipping in 1961, where he was promoted to assistant treasurer in 1967 after holding various traffic management positions with the company.

In 1970, Mr. Dangerfield joined Street Brothers in Charleston, S.C., in the capacity of secretary-treasurer and held that position until March 1981. He will be domiciled in Eller's Charleston office, and will coordinate the company's South Atlantic traffic activities.

BIW Awarded \$247-Million Navy Contract To Build Three Missile Frigates

A \$247-million contract for three FFG-7 class guided-missile frigates (FFG-50, 53, 55) has been awarded by the U.S. Navy to Bath Iron Works, raising the shipyard's business backlog to the highest level in its 97-year history. The Navy also awarded the company a \$326,573 study contract for its next generation destroyer, still in the conceptual phase under the designation DDG-X, to recommend ways to

improve the producibility of the ship when it enters construction.

The Bath, Maine, shipyard, which is a Congoleum company, now has a record backlog of \$909,615,000, including 14 guided-missile frigates, two commercial tankers, a dredge ship, and a sugar barge, plus overhaul projects.

"The fact that we achieved such a backlog when the ship-

building industry in this country and abroad is severely depressed is a tribute to our excellent managers and workers," said John F. Sullivan Jr., chairman and chief executive officer of the shipyard. "By consistently delivering ships ahead of schedule and below contract cost, they've proved themselves as the premier shipbuilders of the United States," he added.

The shipyard has won international renown for early, below-budget deliveries of quality naval and merchant ships. On the guided-missile frigate program alone, since delivering the prototype of the class in 1977, it has produced six more of the ships cumulatively 80 weeks ahead of schedule—more than 1½ years—and approximately \$37 million under budget.

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On the oceans of the world, we are most noted for our heavy-duty 3 and 10-cm radar systems. More than 50,000 vessels have been fitted. While less visible, other Raytheon products are even more numerous. These include:

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- VHF-FM and SSB Radiotelephones.
- Fathometer® Echosounders.
- Doppler Speed Logs.
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Doppler logs give accurate speeds and simultaneous bottom soundings. Single or dual-axis.

There are three models of the famous Raytheon Doppler Log: DSN-250 for continuous fore/aft speeds;

DSN-350 which can be switched to show either fore/aft or port/starboard speeds; and DSN-450 which shows speeds in both axes simultaneously.

All three are proven performers with these unique features:

- "Normal" mode readings up to 40 knots within 1/10 knot.
- "Mooring" mode readings accurate within 1/100 knot.
- True speeds shown over bottoms as deep as 1000 feet.
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 - Automatic water temperature and salinity compensation.
- Self-testing. No calibration.
- Large, easy-to-read LED display with mechanical "distance-run" counter.
- Optional digital and analog "dial" remote displays.
- Single transducer.

Satellite Navigator gives worldwide fixes accurate within 100 yards every 30 to 90 minutes.

The "complete navigator", Raytheon JLE-3400 acquires and displays very accurate Lat/Long fixes derived from navy navigation satellites in polar orbit. Between satellite fixes, computer-generated dead-reckoning fixes are shown. Dead-reckoning data is keyboard entered or automatically supplied by a gyro compass and dual-axis doppler log.

Featuring a large 9-inch CRT, the JLE-3400 will also display such important data as:

- Date and GMT.
- Time since last satellite fix.
- Time and angle of next satellite fix.
- Ship's speed and course.
- Data from up to ten way-points including: course-to-steer for Rhumb or Great Circle tracks, distance run, ETA's etc.

A printer for displayed data and a remote CRT display are available as options.



SATELLITE NAVIGATOR

North Florida Shipyards Appoints Three—White Named Production Manager

Joseph B. Shiffert, president of North Florida Shipyards at Commodore Point in Jacksonville, Fla., has announced recent appointments to expand and strengthen the yard's extensive services to ship operators. Albert

A. White has joined North Florida Shipyards as production manager and assistant to the president. Mr. White has recently been manager of ABS Technical Services, with many prior years in the American Bureau of Shipping, including assignments as surveyor in Greece and Germany and area principal surveyor in the Middle East.

John McKelvey has been ap-

pointed superintendent, Diesel Department. He has wide-ranging experience with various sizes and types of diesel engines up to 14,000 bhp. Most recently, Mr. McKelvey was field service engineer for Colt Industries; he has also worked with gas turbines up to 25,000 hp.

Jim Becker, with 22 years' service in the U.S. Coast Guard, has joined the North Florida

team as ship supervisor coordinator. Most recently, he worked with the USCG office of Marine Inspection in Jacksonville.

North Florida Shipyards maintains a staff of 300 people skilled in all phases of topside ship repairs, conversions, and modifications. New York representative for North Florida Shipyards is Richard F. O'Boyle; (201) 566-4477.

Captain Barry Roberts Named CO Of USCG's Curtis Bay Shipyard

Capt. Barry C. Roberts, USCG, recently assumed command of the U.S. Coast Guard Yard in Curtis Bay, Md. He becomes the 29th commanding officer in the 82-year history of the yard, the only shipbuilding and repair facility of the U.S. Coast Guard.

During a recent ceremony, Rear Adm. Robert S. Lucas turned the command of the yard over to Captain Roberts. Admiral Lucas had served as commanding officer since June 1980. He is being transferred to Coast Guard Headquarters in Washington, D.C., where he will be assigned as chief, office of engineering.

Captain Roberts's sea duty assignments include service aboard the Coast Guard Cutters Minnetonka and Northwind. He served as commanding officer of the Coast Guard Loran Station in Pusan, Korea; chief of Naval engineering, 17th Coast Guard District in Juneau, Alaska; and commanding officer of Group/Base Ketchikan, Alaska. He was stationed at Coast Guard Headquarters on two occasions, and held the positions of assistant chief Design Branch, and chief, Cutter Maintenance Branch.

Bolton To Head Matson's \$15-Million Terminal Consolidation In Honolulu

Matson Navigation Company has appointed Alexander Bolton, vice president and area manager-Hawaii, to direct and supervise the company's \$15-million project to consolidate its Honolulu terminal facilities at Sand Island, M.S. Wasacz, executive vice president, announced.

Mr. Bolton will devote full time to the tasks of completing the new 85-acre terminal, moving the four huge shoreside cranes and other equipment from Diamond Head Terminal and installing them at the new site, and coordinating operations throughout the transition period.

Relieving him as area manager-Hawaii will be Barrick L. Prince, vice president, who has been Matson's area manager in northern California. Richard S. Bliss, formerly executive vice president of the subsidiary Matson Terminals, Inc., will succeed Mr. Prince as vice president and area manager-northern California.

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- Advanced solid-state circuitry.
- Simple operation.

The RAYFAX 300 Recorder is available separately for vessels equipped with a suitable wide-band receiver.



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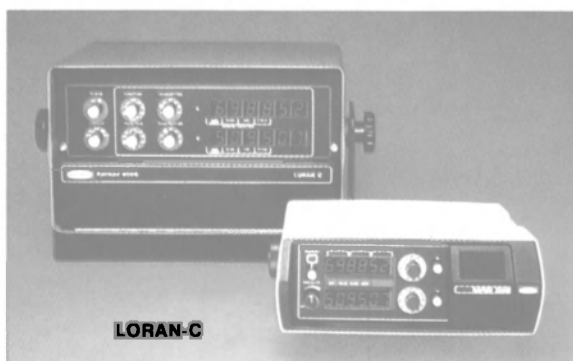
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James Retert Joins Waukesha Engine As Director Of Marketing

James M. Retert has joined Waukesha Engine Division, Dresser Industries, Inc., as director of marketing. In this position, he is responsible for product management and application engineering of all the division's marine, petroleum, construction and industrial, power generation, and service parts activities.



James M. Retert

Mr. Retert comes to Waukesha Engine Division from AMF Harley Davidson Motor Company, where he was director of marketing, planning, and research. His background also includes supervisory, managerial, and analyst positions with Allis-Chalmers in its economics and business forecasting, product research, marketing research, and merchandising departments.

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

New U.S. Built Coal-Fired Ship To Be Powered By G.E. Steam Turbine

The first coal-fired ship to be built in the United States in modern maritime history will be powered by a General Electric Company 12,000-shp geared marine steam turbine.

It is the second order for coal-fired propulsion equipment received recently by General Electric (Lynn, Mass.).

The ship, which will haul 30,000 short tons of coal between Hampton Roads, Va., and New England Power Company electric generating plants at Brayton Place, R.I., and Salem, Mass., has been ordered by a company owned jointly by New England Power and Keystone Shipping Company. The vessel will be built by General Dynamics at its Quincy, Mass., shipyard. The ship is expected to go into service in 1983.

Raymond J. Walsh, manager of marine sales at General Electric's Industrial and Marine Steam Turbine Division, said the orders reflect a renewed interest in coal-fired ships for hauling not only coal but all bulk materials.

General Electric recently announced an order for two 19,000-shaft-horsepower geared marine steam turbines to power ships that will serve the Australian bauxite trade. Those propulsion systems will be built jointly by General Electric in Lynn and Cantieri Navali Reuniti, General Electric's manufacturing associate in Genoa, Italy. The two ships will be built in Trieste, Italy.

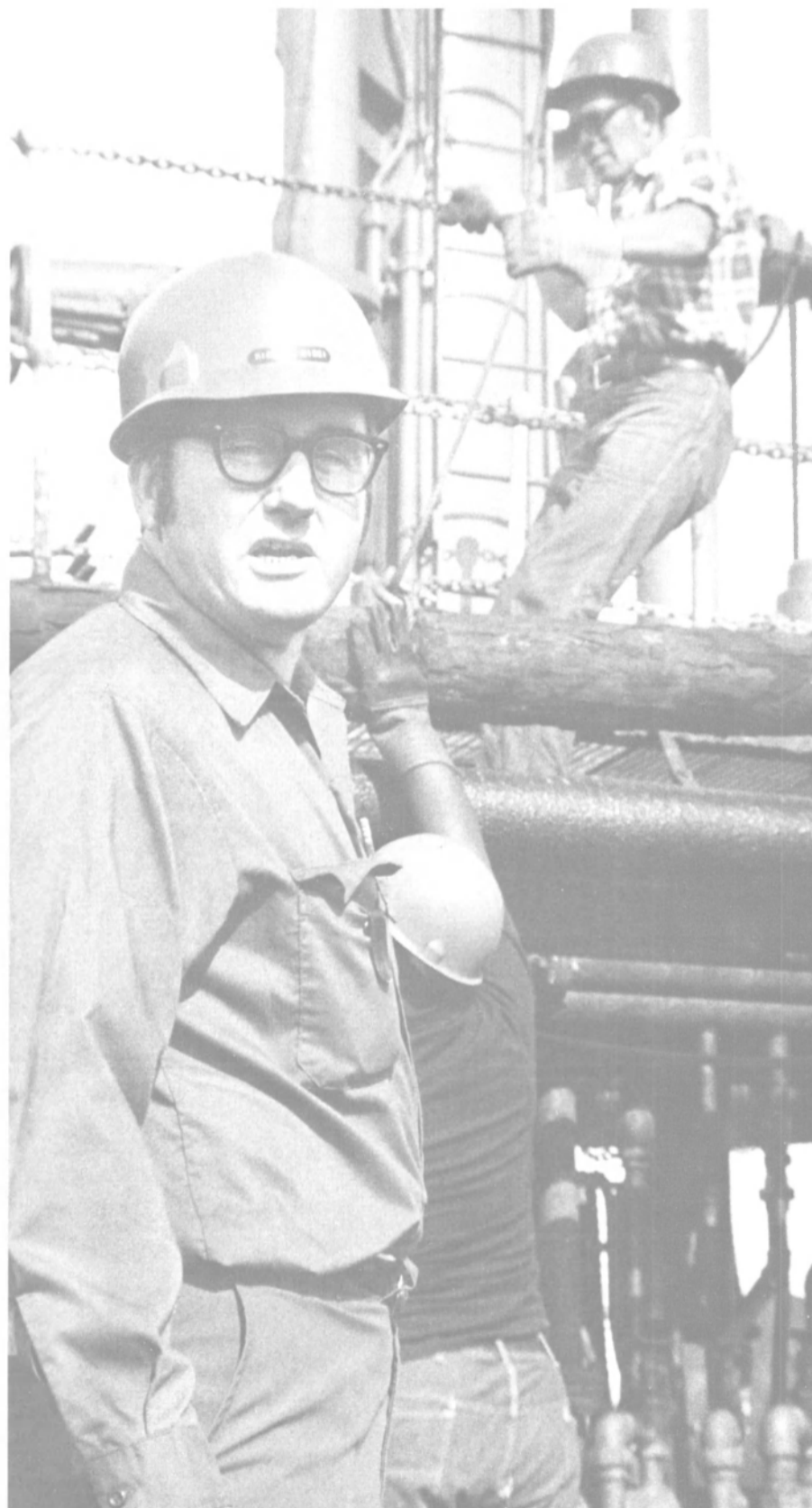
Ted DeBoer To Manage Terminal Operations For TOTE In Anchorage

Totem Ocean Trailer Express (TOTE) of Seattle has announced the promotion of Ted DeBoer to the position of Anchorage terminal operations manager. Formerly responsible for the TOTE Chicago sales office, Mr. DeBoer has been

with the company since 1979. He has worked for the Alaska Division of North American Van Lines, and was also president of Wisconsin Van Lines.

Mr. DeBoer's new responsibilities include terminal operations and maintenance for Anchorage and the remote terminals in Kenai and Fairbanks. His office is located at 2333 Tidewater, Anchorage, Alaska 99501; (907) 265-7211.

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Wasacz Succeeds Gray As President Of Matson Navigation

Michael S. Wasacz has been named president and chief operating officer of Matson Navigation Company and senior vice president-ocean transportation of Alexander & Baldwin, Inc., Matson's parent company. This was announced by R.J. Pfeiffer, chair-

man and president of A&B and Matson's chairman and chief executive officer.

Mr. Wasacz succeeds the retiring James P. Gray as Matson president and as board chairman of Matson's subsidiaries, Matson Agencies, Inc., and Matson Services Company. Mr. Wasacz also continues as chairman of the subsidiary Matson Terminals, Inc. A 22-year Matson employee, he is the 12th president of the 99-year-

old West Coast-Hawaii shipping line, which is headquartered in San Francisco.

Mr. Gray retired June 1 after a 45-year maritime career, which he began as a dock clerk in Los Angeles. He became president in October 1979, after serving as executive vice president-operations, senior vice president in charge of the freight division, and president and chairman of Matson Terminals, Inc.

Mr. Wasacz was appointed executive vice president last November. Before that he was president of Matson Terminals, Inc., and a Matson Navigation Company senior vice president following area manager assignments in Hawaii, southern California, and northern California. He joined Matson in 1959 as a freight clerk in the New York office.

Panamax Bulk Carrier For Klaveness Chartering Launched At B&W Yard

Burmeister & Wain Shipyard, Copenhagen, recently launched Yard No. 883, a 64,000-dwt Panamax bulk carrier of the yard's fuel-saving type. The vessel is being built for A/S Klaveness Chartering of Oslo, and is the third of a series of 17 vessels representing Burmeister & Wain Shipyard's current orderbook.

Due to the hull design with bulbous bow, an extremely flat-sectioned aftbody, and the installation of a two-stroke, long-stroke diesel engine having a performance of 12,600 bhp at 90 rpm, the vessels of this new type have a fuel oil consumption of only about 37 tons daily and an average speed of 15 knots. This represents an improvement in the fuel oil consumption of approximately 20 percent compared with many conventional bulk carriers of the same size.

MarAd Approves Title XI On Four Marsea Vessels To Cost \$15 Million Total

The Maritime Administration has approved in principle an application by Marsea Marine Seventen, Inc., New Orleans, to aid in financing the construction of four 3,900-bhp tug/supply vessels.

The vessels are expected to work in the coastwise or foreign trade of the United States to aid in offshore exploration for oil and gas. Quality Shipyards, Inc., Moss Point, Miss., is the proposed builder of the vessels, all scheduled to be delivered this year.

The Title XI guarantee covers \$13,440,000 or 87½ percent of the estimated cost of \$15,364,392.

R.D. Church Appointed VP And Assistant Secretary At Avondale Shipyards

R. Dean Church has been promoted to vice president-contracts, credit, and insurance, and assistant secretary of Avondale Shipyards, Inc., it was announced by Joseph W. Oberfell, vice president and chief financial officer. Mr. Church, formerly manager of insurance and assistant manager of credit and contracts for the past nine years, has been with Avondale 15 years.

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Bel-Aire Yard To Build Two Tuna Seiners At Total Cost Of \$20 Million

Bel-Aire Shipyard Ltd. of North Vancouver, British Columbia, Canada, has received a \$20-million contract from Atunera Coinseco S.P.A. de C.V. of Mexico City, Mexico, to build two tuna seiners. The vessels are Canadian-designed by naval architects Cleaver & Walkingshaw Ltd. of Vancouver.

Designed for commercial deep-sea tuna fishing, each 1,300-ton vessel is large enough to accommodate a helicopter landing pad on her bridge deck. These seiners will be 225 feet long with 43-foot beam, and powered by a 3,600-bhp diesel engine. Refrigerated fish wells are designed to hold a total of 52,000 cubic feet of tuna. Accommodations for a crew of 20 persons will be provided.

According to **George Forbes**, president and general manager of Bel-Aire, "Production will begin immediately on this contract, which will employ approximately 150 people over its 15-month duration."

Joseph Derra Promoted To Program Manager At Waukesha Engine Division



Joseph Derra

Waukesha Engine Division, Dresser Industries, Inc., announced the promotion of **Joseph Derra** to the position of program manager. His major responsibility will be the technical coordination of the new Sulzer diesel engine product line, which was recently announced by Waukesha. Prior to joining Waukesha in 1975, he had design engine experience in diesel engines, gas turbines, and compressors at Rexnord and Allis-Chalmers.

Waukesha Engine Division is a manufacturer of heavy-duty diesel and gas engines for the petroleum, marine, off-highway vehicles, and power generation markets.

Del Crook Joins Beker Industries As Manager At Louisiana Plant

Louis J. Kupfer Jr., vice president of the Louisiana Region and the Marseilles, Ill., plant, and **B.H. Farrow**, Taft, La., plant manager, both of Beker Industries Corporation, announced that **D.L. (Del) Crook** has recently accepted the position of manager, material

control and marine operations at Beker's Taft plant.

Mr. Crook brings more than 20 years' senior management and supervisory experience to this position. He has held positions with the Marine Engineering Division of Amoco Marine Transportation Company, Kure Shipyard Division of National Bulk Carriers, Commercial Development Office of the Maritime Administration, and SUPSHIPS Design Division of the U.S. Navy Department.

Robert Wilson Elected To Board Of Directors At Anixter Bros.

Anixter Bros., Inc.'s board of directors has elected **Robert J. Wilson** a director of the company. Mr. Wilson, group vice president for wire and cable, joined the specialized international distribution and manufacturing firm in 1964 as a sales representative. He was promoted to industrial sales

manager in 1966 and became general manager in 1968.

In 1972 he was named group vice president for the domestic wire and cable division. Three other divisions were added to his responsibilities during 1980 and 1981, including Europe and United Kingdom; Anixter-Ohm International, the overseas distribution arm for Cable TV, telephone and power products; and the mine and industrial division.

GASTECH 81

The 8th International LNG/LPG Conference and Exhibition
Congress Centrum Hamburg, 20-23 October 1981

CONFERENCE PROGRAMME

Session 1 WORLD GAS SUPPLIES

Chairman: Aman R. Khan, President, GDC Inc., Chicago

Natural Gas for Europe — a personal viewpoint
Dr. Christoph Brecht, Director, Ruhrgas AG and Deutscher Verein des Gas-und Wasserfachs

The USSR Gas Industry development and Soviet Natural Gas exports to Western Europe
Sojuzgazexport, Moscow (speaker to be announced)

Algeria's natural gas export policy
Dr. M. Belguedj, Director for Gas Exports, Sonatrach, Algiers

International trade in LNG: Present projects and future outlook
Edward K. Faridany, Edward K. Faridany Associates, London

Natural gas policies for the developing countries
George D. Carameros Jr., Chairman, International Gas Development Corp., Houston

Session 2 LPG PRODUCTION AND TRADE
As at previous Gastech meetings, the LPG Session will bring together the world's leading LPG producers, marketers and traders. Fuller details will be published nearer the date of the meeting. The session will occupy the whole of the day: International LPG affairs will be discussed in the morning and North Sea LPG matters in the afternoon

Session 3 OFFSHORE GAS AND GAS PRODUCTION — Technical Workshop Session

Utilisation of a marginal gas field with major NGL content by natural gas liquefaction and offshore loading

D. Meyer-Detring, Preussag AG and authors from Billfinger + Berger, Blohm + Voss, Dyckerhoff & Widmann and Linde.

Control of dynamic bodies moored in an open seaway

T. Hillberg, Delta Marine, Calif.

Barge-mounted gas processing plants for onshore application

J. Bakke and P. G. Andersen, Moss Rosenberg Verft a.s., Moss, Norway

Cryogenic flexible pipes for offshore LNG production

R. Reynard, Colflexip, Paris

Session 4 TRANSPORTATION TECHNOLOGY & OPERATIONS

Chairmen: R. C. Ffooks, Consultant, London and R. J. Lakey, Vice President, Helge Ringdal Inc., Houston

A submarine LNG tanker concept for the Arctic
P. Takis Veliotis, Executive Vice President — Marine General Manager, Electric Boat General Dynamics Corporation

Energy-saving LNG carriers

R. Kvamsdal and S. Koren, Moss Rosenberg Verft a.s., Moss, Norway

On the study of the tank system of 125000 cu m. MRV type LNG carrier

Dr. R. Nagamoto and others, Mitsubishi Heavy Industries Ltd., Nagasaki

Response of spherical cargo tanks for liquefied gas to large support deformation
Dr. J. L. Armand, Department of Naval Architecture, University of California, Berkeley

A comparison of the collision resistance of membrane tank-type and spherical tank-type LNG tankers

P. R. Van Mater, D. L. Edinberg, Giannotti & Associates and P. Orsero, Institut de Recherches de la Construction Naval, Paris

Some notes on the practical application of the IMCO Gas Carrier Code to pressure vessel type cargo tanks

M. Bockenbauer, Germanischer Lloyd, Hamburg

Prediction of sloshing loads in LNG ships

Dr. J. C. Peck, McDonnell Douglas Astronautics Company, Calif. and P. Jean, Gaz-Transport, Paris

LNG transfer ship-to-ship following "LNG Libra" tailshaft failure

G. J. Masaitis and E. G. Tornay, Energy Transportation Corp., New York

The control of the movements of gas carriers in ports

Dr. S. Mankabady, University of Liverpool, UK

Port planning and management aspects of the safe shipment of LNG and LPG

Capt. P. R. Lyon, Eagle Lyon Pope Associates, Dr. D. H. Slater and Dr. M. A. F. Pyman, Technica Ltd., London

Session 5 SAFETY AND TRAINING

Chairman: R. C. Gray, British Shipbuilders, Newcastle upon-Tyne, U.K.

A team approach to systems integrity on LPG carriers

D. W. F. Gosden, M. Smith and P. Elkington, Bibby Bros & Co., Liverpool, U.K.

Assessment of consequences from accidental release of liquefied gases

D. M. Solberg, Det norske Veritas, Oslo

Training of LNG carrier personnel

C. D. Kuehl, Marine Liquidgas Service Company, Scituate, MA, USA

LNG safety research overview

S. Atallah, Gas Research Institute, Chicago

Simulation and its role in liquefied gas carrier personnel training

G. Angas, College of Nautical Studies, Warsash, Southampton, and Redifon Simulation Ltd., Crawley, U.K.

Alternative fire protection systems for LPG vessels

J. M. Wright, Blevex Ltd., Borehamwood, Herts, U.K.

Poison-resistant flammable gas sensors for LNG/offshore installations

J. M. Sonley, International Gas Detectors Ltd., Wetherby, W. Yorks., U.K.

Safety of liquefied gases containment systems on land and at sea

M. Kotcharian and J. M. Simon, Technigaz, Maurepas, France

Session 6 LIQUEFIED GAS STORAGE

Chairman: Robert E. Petsinger, LNG Services Inc., Pittsburgh, USA

State-of-the-art assessment of refrigerated liquefied gas storage systems

L. P. Zick and L. V. La Fave, Chicago Bridge & Iron Company, Oak Brook, Ill., USA

Test tank programme for liquefied gas storage using the GT/MDC containment system

T. M. Yamakawa, Toyo Kanetsu K. K., Tokyo and co-author from McDonnell Douglas Astronautics, Calif

Unloading of large LPG carriers into salt and rock caverns

W. Brumshagen, LGA Gastechnik GmbH, Remagen-Rolandseck, Germany

Commissioning of the 120000 cu m and 95000 cu m storage tanks of the Gaz de France and Tokyo Gas LNG terminals

C. Riou and C. Zermanti, Technigaz, Maurepas, France

Foundation failure and its remedy for a liquefied gas storage tank

W. C. van Hoof, Raychem Corp., Menlo Park, Calif, USA and J. P. Ofrenchuck, Cvanamid of Canada Ltd., Niagara Falls, Ontario

Operation of the world's largest LPG plant

S. Shtavieh, Kuwait Oil Co., C. A. Durr and J. C. McMillan, M. W. Kellogg, Houston and C. Collins, M. W. Kellogg, London

Session 7 DEVELOPMENT OF THE WORLD GAS CARRIER FLEET — Technical Workshop Session

Chairman: Dr. Ing. H. Backhaus, LGA Gastechnik GmbH, Remagen-Rolandseck, Germany

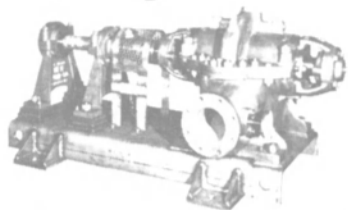
This will be a small workshop with a panel of experts from Classification Societies, IMCO, shipyards, shipowners, etc. Fuller details will be published nearer the date of the meeting.

CONFERENCE REGISTRATION DOCUMENTS ARE AVAILABLE FROM

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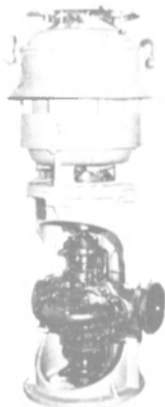
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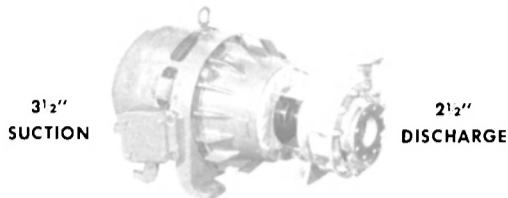
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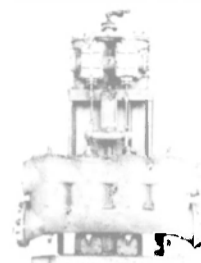
125 PSI (281 Ft.) total head. Suction lift none (flooded) 1750 RPM. With Falk #8F coupling—flexible, all metal, enclosed. MOTOR: Reliance type T—100 HP—1750 RPM—343 amps—230 volts DC—Frame 503AS. Pump has 5" suction—4" discharge. Pump & Motor mounted on base 37¾" wide X 6' 2¾" long X 3' 0½" high. Total weight 3348 lbs.

**NEW 5" ALL BRONZE BALDWIN-LIMA
1000 GPM 150 PSI TOTAL HEAD
CENTRIFUGAL FIRE PUMP**



Single stage double suction type with 6" side suction & 5" side discharge. 3600 RPM—test pressure 250 PSIG. MOTOR: Reliance 125 HP 440/3/60—totally enclosed—fan cooled—Frame D-5003-S—50°C.

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



1400 GPM @ 110 PSI — suction lift 11.5 ft. — steam back pressure 15 lbs. 14" Suction — 10" discharge — 2½" steam — 4" exhaust. Overall width 6'8" — overall height 9'1½" — depth 3'9½". Wt. approx. 10,000 lbs.

**RECONDITIONED 1980
ABS — READY TO GO**

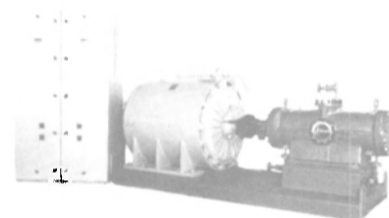
**STEAM DRIVEN VERTICAL DUPLEX
FIRE & GENERAL SERVICE PUMPS**



10 X 11 X 12 — Worthington — 560 GPM @ 125# G. 8" Suction — 6" discharge pumps bronze fitted.

**700 G.P.M. @ 150 P.S.I.
NEW — UNUSED**

**MOTOR DRIVEN ROTARY
HORIZONTAL PUMPS
WITH 4-SPEED 440/3/60 MOTOR**

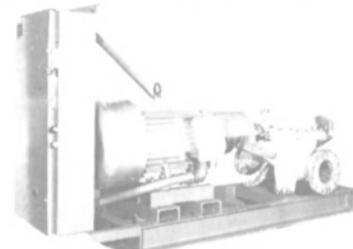


Inlet 8" — outlet 6". Powered by 4-Speed 440/3/60 motor. Motor is 100/75/50/37.5 HP — 1200/900/600/450 R.P.M. Motor has Cutler-Hammer control. Weight 10,000. Inquire for complete details.

FIRE PROTECTION FOR SHIPYARDS!

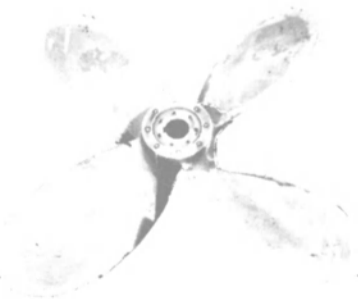
(Several installed in yards doing Navy work)

**BRONZE FIRE PUMPS
1000 GPM @ 150' HEAD**



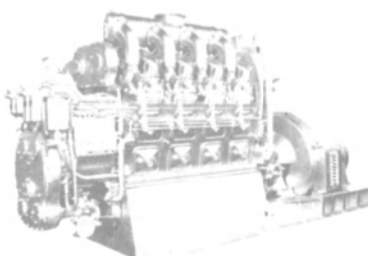
6" Suction—5" Discharge. 1750 RPM—motor driven—150 HP—440/3/60/1750. Motor control & pump on pre-fab base for portability. New motor, base and coupling. Gardner-Denver reconditioned pump.

4-BLADE LST BRONZE PROPELLERS



Starboard — 7' diameter — pitch constant 4.699; Bore tapers from 6½" to 4¾". 14½" taper equal to 1"/foot on diameter. U.S. Navy reconditioned. Average weight 1760 lbs.

**GM 8-278A 350KW 440/3/60
DIESEL GENERATOR SET**



GM 8-cyl. engine—8½ X 10—2-cycle—Vee type driving 350 KW G.E. generator—440/3/60—600 RPM—430 KW 2 hours. 3 Units available. Your inspection invited.

PLEASE NOTE:

Our Marine Dept. & Warehouse is now
250 Scott St. at McHenry — Baltimore

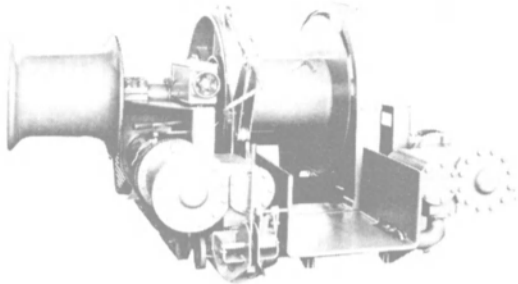


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STEAM MOORING WINCHES
 12" x 14" — STEAM OR AIR DRIVEN
 with foot brake & declutchable gypsy head
 20,000 LBS @ 100 FPM—FIRST LAYER



**ALSO HANDLES 16,000 LBS @ 150 FPM
 OR 50,000 LBS @ 8 FPM**

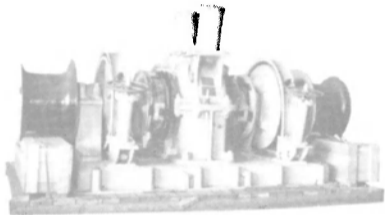
Drum will show 1500 ft of 1½" wire in 9 layers. Steam inlet 3½" — 4" exhaust — 171 PSI working pressure. BASE DIMENSIONS: 6' x 6' 3½" — overall 8' 4½" wide x 9' long. Mfg by Friedrich Kocks — Bremen, Germany. Recently removed from ARCO "Challenger".

ALSO IN STOCK

12" x 14" Double Gypsy Unit

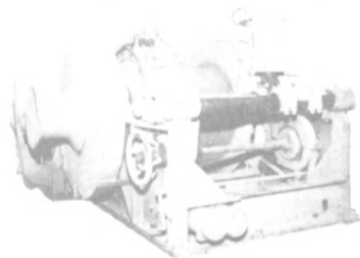
ALL UNITS CAN BE DEMONSTRATED RUNNING

**NEW — UNUSED
 LINK BELT WINDLASS**



Handles 7000 lb anchors — 1½" windlass — 56" centers — 50 HP — 230 VDC — with controls and spares.

**100,000 LB. ALMON JOHNSON
 Constant Tension Mooring Winches**



In very good condition. Series 232 mooring & anchoring winches. Automatic self-tensioning. Wide range from 100,000 lb. line pull @ 10 FPM to 26,000 lbs. @ 400 FPM. Gypsy line pull @ 12,000 lbs. @ 25 FPM. Drum declutchable through spiral jaw clutch for free spooling. Driven by 50 HP 230 VDC motors — Westinghouse CK — 575 RPM — ½ hour — 75°C rise — stab shunt — 181 amps. Max. RPM 1900 — Cutler-Hammer brake — 18" — type NM. Complete with magnetic control panel, resistor banks & remote control pedestal and mounted master switch.

**NEW PHONE
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 752-1077**

located at
 Ad. 21230

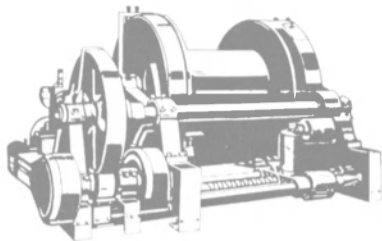
n METALS CO.

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19-1900 Marine Dept.: (301) 752-1077
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**LARGE STEAM
 TOWING ENGINE**

**9 X 10 TWIN ENGINE DRIVE
 Air or Steam — 125/250 PSI**

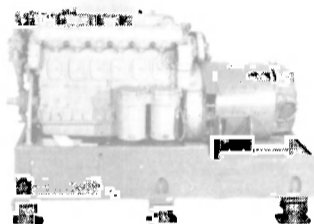


Heavy-duty Clyde with 36" diameter X 51" Face single drum. Flanges 68". CAPACITY: Up to 2800' of 2" wire rope. Normal line pull 40,000 lbs@ 50 FPM. Steam or air pressure required 125 to 250 PSI. Can be adapted to electric drive or increased steam or air pressure to a capacity of 82,000 lbs @ 20 FPM. Pawl holds 270,000 lb. pull from any layer. Equipped with level wind device. Approximate weight 30,000. DIMENSIONS: 12'6" wide—6'6" high. Write for details.

ALSO AVAILABLE

Large towing ring — 36" I.D.

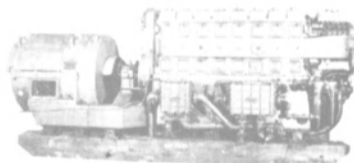
**60KW DIESEL GEN. SET
 DELCO GEN. — GM 6-71 DIESEL**



Delco 120 volt DC 500 amp stab. shunt 1200 RPM generator. Engine is GM 6-71 — heat exchanger cooled. Radiator shown is not included.

Reconditioned — Ready To Go.

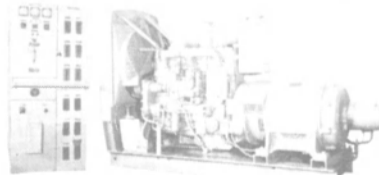
**300KW GM 8-268A 120/240 DC
 DIESEL GEN. SET**



ENGINE: GM 8-268A — 6½ X 7 — 1200 RPM. Heat exchanger cooled. GENERATOR: Westinghouse 300 KW — 120/240 DC — shunt wound.

PRICED RIGHT

**STANDBY GENERATOR
 CUMMINS 75KW 93.8 KVA
 DIESEL GENERATOR SET**



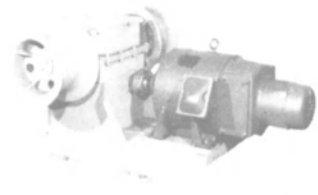
440/3/60 Generator—1200 RPM—driven by 6-cylinder Cummins diesel with electric starting. Free standing switchgear.

\$9750

40KW EMERGENCY GEN. PANEL

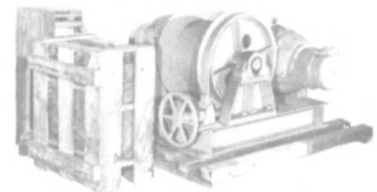
Provides necessary device for automatic startup, control & protection of emergency generator. Provides power for essential circuits in case of failure of primary source. Also automatic shutdown of generator on restoration of primary source of power.

**UNUSED — IN ORIGINAL CRATE
 BOAT HANDLING AND
 GENERAL PURPOSE WINCH**



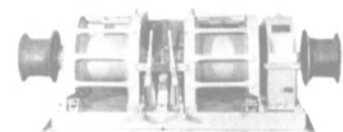
2500 Lbs @ 125 FPM on one gypsy head or 1250 lbs @ 125 FPM simultaneously on each gypsy. MOTOR: 15 HP—230 volts DC—55 amps—GE. AVAILABLE: 1 Set mfg by Lakeshore with Reliance motor—1 set mfg by Ideal with GE motor. Complete with controls and disc brake.

**GENERAL PURPOSE WINCH
 3500 LBS AT 200 FPM**



A.C. Motor drive—25/12.5 HP—GE 440/3/60—40°C AB —1750 RPM—type KR—full load amps 32. Motor drives winch through Falk reduction gear. Has compressor hand brake.

**CARGO WINCH — UNUSED
 2-DRUM 2-GYPSY DECLUTCHABLE**



DUTY: 7400 LBS @ 220 FPM. Mfg by Western Gear Works. With repair parts. Model CW50. Capacity of each drum 600 ft. of ¾" wire rope. MOTOR: 50 HP—230 VDC with control. 14" Cutler-Hammer brake control — 1 master switch — enclosed contactor panel & resistors.

NAVY AXIAL FLOW FANS

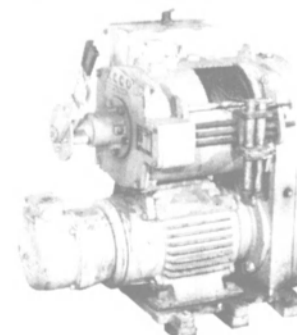


10,000 CFM—A10A4-W5. 20" ID. MOTOR: 7.5/3.3 HP—440/3/60 — 10.5/5.2 amps — 1750/1150 RPM. Reconditioned — 9 available.

ALSO 1 20,000 CFM FAN AVAILABLE

BATHYTHERMOGRAPH WINCH

**TYPE
 C.T.B.
 10318**





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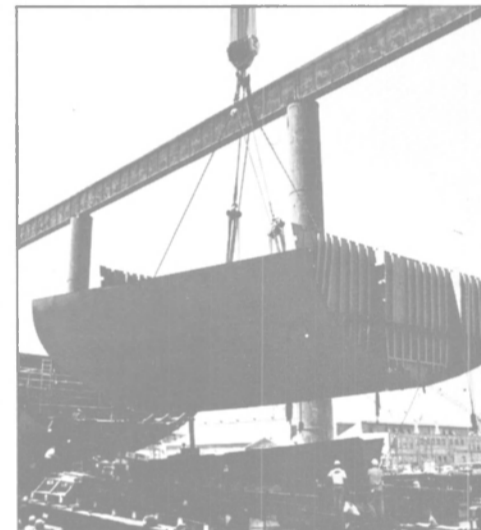
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gives your advertising to increase your marine sales

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Other marine publications are now missing thousands of marine buyers who are regular readers of MARITIME REPORTER (Titles opposite). Your marine advertising can reach its full potential only in MARITIME REPORTER...where it has thousands more chances to be seen and read by marine buyers...thousands more opportunities to help you increase your marine sales in 1981.

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**MARITIME
REPORTER**
AND
ENGINEERING NEWS



Washburn & Doughty Delivers Combination Scalloper-Dragger

The Washburn & Doughty shipyard recently delivered the 105-foot Bountiful II (shown above) to Capt. Edison Love of Portland, Maine. The combination scalloper-dragger is the eighth vessel to be delivered by the Bath, Maine, shipyard in the past 2½ years. The new fishing boat has successfully completed its first two trips, landing 6,000 bushels of scallops in seven days.

The Bountiful II is a deep-draft sea boat designed and built to handle rough North Atlantic seas. Specifications include an overall length of 105 feet, a beam of 26 feet, and a depth of 14 feet 6

inches. On his first trip out, Captain Love was able to ride out high seas while the rest of the Portland fleet had to return to port.

The new vessel is a design of John Gilbert Associates of Boston. The owner picked Washburn & Doughty as the shipbuilder because of the firm's growing reputation as a builder of rugged steel fishing boats.

The Bountiful II is powered by a Caterpillar D399 main engine driving a Columbian 72-inch wheel in a fixed Kort nozzle. During both builder's trials and delivery trip, the sleek vessel regularly

beat the design speed of 12 knots. The auxiliary engines include a Caterpillar 3304 generator set and a Caterpillar 3408-TA hydraulic pump engine. With a fuel capacity of 16,000 gallons, Captain Love's new boat will have a two to three-week range at sea.

On deck are two Hathaway #12-AITHS-24-inch drum winches, with two Hathaway 8-foot wide by 6-foot flange net reels mounted on a West Coast type galleys gantry. With three fixed booms, the Bountiful II easily converts from scalloping to mid-water trawling, making its 7,000-cubic-foot, divided fish hold a waiting recipient for any type of catch. Also, the forward fish hold

features a Thermo King refrigeration unit for better preservation of the catch on longer trips.

The owner-furnished electronics package includes two Northstar 6000 Loran C with an Epsco plotter. Two Furuno radar units give the new vessel a 24-mile and 48-mile view range. Also at the captain's control are two Simrad sounding machines, a Robertson autopilot, VHF, and SSB radios.

Captain Love's boat has comfortable semiprivate staterooms for a crew of 14, plus captain. It has a complete, commercially equipped galley to withstand years of use, and is modeled after those found on large oceangoing ships.

GE-Powered Product Carrier For Union Oil Christened At NASSCO



Looking on while Mrs. Eleanor McConnor, sponsor, smashes the traditional champagne bottle, are (from left): Mrs. Robert F. Nootbaar, matron of honor; William S. McConnor, president, "76" Division, and senior vice president, Union Oil Company; and C. Larry French, president, NASSCO.

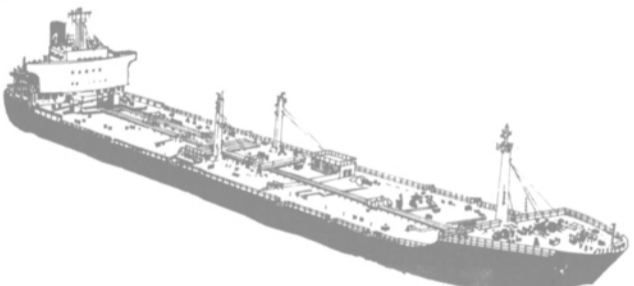
Christening ceremonies were performed recently for the Blue

Ridge, one of three 37,500-dwt product carriers being built by National Steel and Shipbuilding Company (NASSCO) for Union Oil Company of California. (See MR/EN, December 15, 1980, page 26.)


More than 400 invited guests gathered at the NASSCO San Diego yard to witness the ceremonies. Sponsor for the ship was Mrs. Eleanor McConnor, wife of William S. McConnor, president, "76" Division, Union Oil Company, and key speaker of the day. Mrs. Joan Nootbaar served as matron of honor. She is the wife of Robert F. Nootbaar, senior vice president, Eastern Region, "76" Division, Union Oil Company. Others participating in the program were C. Larry French, president of NASSCO, and John M. Murphy, NASSCO vice president of corporate relations.

The name Blue Ridge is in honor of the mountain range in the Appalachians extending from New England to Georgia. The new ship will carry products from Union Oil's Beaumont, Texas, refinery to points on the Gulf and Atlantic Coasts.

Launched in November 1980, the Blue Ridge will be the first of three sister vessels to be delivered. The vessels are a new class designed by NASSCO for



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Union Oil. Each product carrier has a capacity of 300,000 barrels. The Blue Ridge will be capable of carrying 20 different products simultaneously.

The 658-foot vessel has a cylindrical appendage-type bulbous bow to improve speed. It will have a General Electric steam turbine engine for maximum fuel efficiency and conservation. Each ship incorporates the most modern equipment available and will meet the latest safety and environmental protection standards including double bottoms, a clean segregated ballast system, an inert gas system, a sewage treatment plant, collision-avoidance radar, and a backup steering system.

The vessels were ordered by Union Oil in April 1979; they are being built entirely without Federal subsidy. The second vessel to be launched, the Coast Range, slid into the water on January 10, 1981. The third, the Sierra Madre, was launched on May 2. All three will be delivered before the end of 1981.

NASSCO currently has under contract a total of eight product carriers, three Navy destroyer tenders, and a Navy cable repair ship. The company's current backlog of repair and new construction work is approximately \$665 million. NASSCO is a wholly owned subsidiary of Morrison-Knudsen Co., Inc., Boise, Idaho.

Stroh Named VP-General Manager For Barber Lines On West Coast



Robert C. Stroh

Robert C. Stroh has been named vice president and general manager of Barber Steamship Lines' newly formed West Coast company, it was announced by Robert H. Pouch, president of the New York-based general shipping agent.

As head of Barber Steamship Lines of California Inc., Mr. Stroh will be in charge of the firm's West Coast operations with headquarters in Los Angeles. The San Francisco office will be managed by Herbert A. Magnuson, vice president, and Walter L. Rabenston, vice president, will be in charge of the Los Angeles office.

South Jersey Port Orders Heavy Duty Multi-Purpose Crane From Kocks

Kocks Crane and Marine Company in Pittsburgh, Pa., has been awarded a contract for the supply

and installation of a "Heavy Duty Multi-Purpose Bulk Cargo Crane with Container Handling Capabilities" by the South Jersey Port Corporation in cooperation with the EDA and the City of Camden, N.J.

The Kocks crane incorporates the latest in advanced technology, placing special emphasis on design, particularly in the area of structural fatigue.

The new crane will handle a variety of the port's loading and

unloading requirements. The versatility of this unit allows for efficiency, not only in container handling operations at a minimum rate of 30 boxes per hour, but also in magnet; hook beam; bucket and scrap pan operations; in addition to its heavy lift capabilities.

Some notable features of the crane which will provide for maximum flexibility and a high throughput handling rate include a slewing trolley capable of 180

degree rotation, and a patented spreader of unique design for pan loading operations. The loading rate for scrap, via pan operation, will be up to 900 tph. Handling rates of other bulk materials will be up to 500 thp. This specially designed Kocks crane will enable the port to handle any of a variety of bulk commodities that may cross their dock during import or export operations.

For further information, Write 50 on Reader Service Card



OCEAN 192 and TUG FREEDOM

We are CARGO UNIT SPECIALISTS

This TUG/BARGE rig is probably one of the most efficient and economical modes for the transportation of bulk commodities in existence today. TUG/BARGE economies are still calculated in *mils* per ton mile while competing modes are using *cents* in similar calculations.

Our deep notched cargo units (barges) are the containment vessels for tremen-

dous quantities of bulk liquid or dry products which are loaded and discharged rapidly at minimum costs.

Galveston Shipbuilding Company is the leading Gulf Coast builder of deep notched ocean going barges for push towed operations. While Galveston builds the cargo unit of the tug-barge combination, other Gulf yards specializing in boat construction, build the tug. Using different and highly specialized

yards to build the power (tug) and cargo (barge) units, usually results in obtaining superior quality construction at significantly lower prices than would normally be expected when building both units in the same shipyard.

Let's get together and talk about your marine transportation requirements.

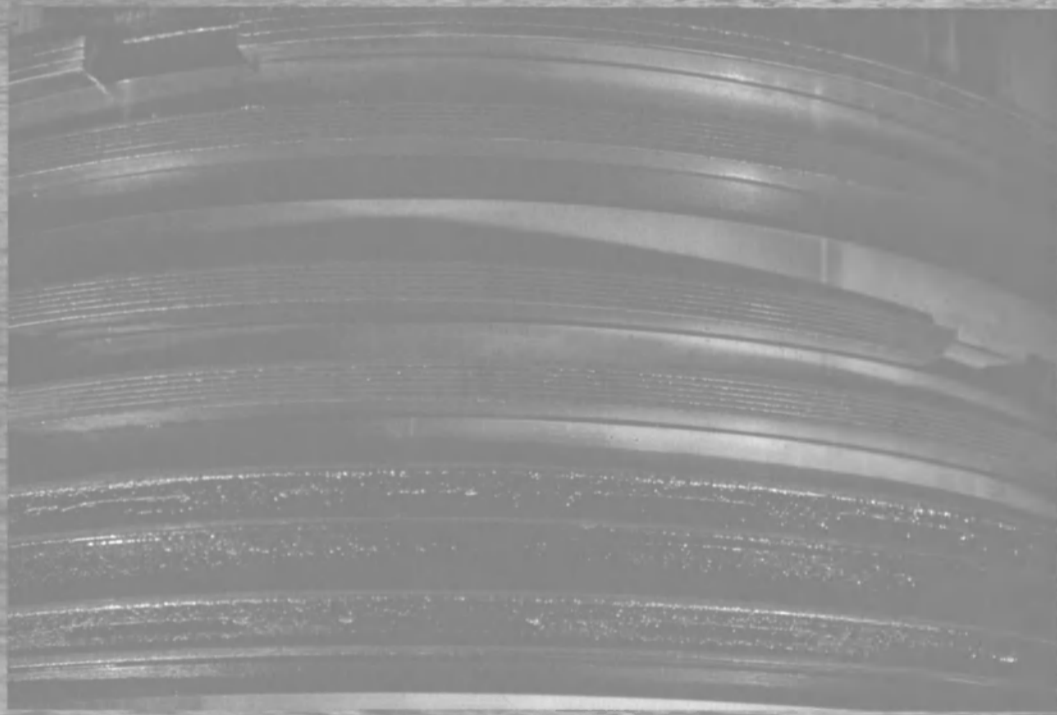
For the better barge at a competitive price, get a Galveston Shipbuilding bid. Contact Nat McClure at G.S.C. today.

Get a better barge.
Get a better price.
Get a GSC bid.



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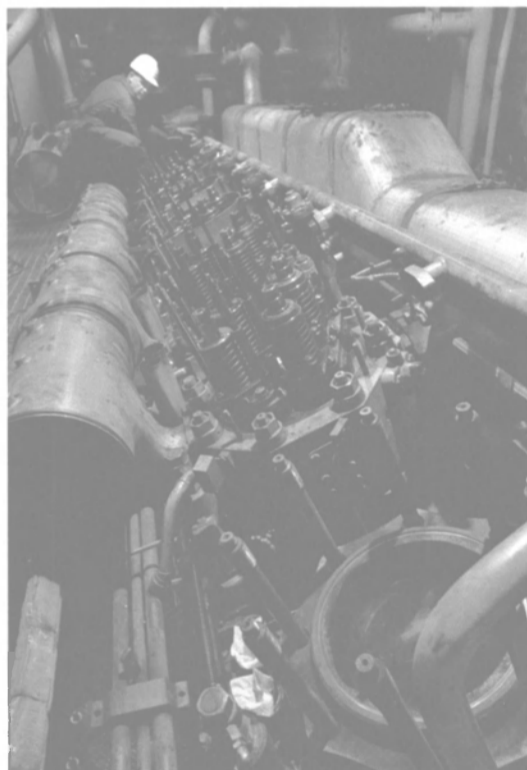
This catug's Colt-Pielstick Diesels ran over 17,400 hours on high sulfur fuel, and the pistons and rings look great.

Two Colt-Pielstick PC 2 V-14 engines are the main power units on the M/V SEABULK MAGNACHEM, an ultra modern 39,900 ton integrated tug/barge owned by Hvide Shipping Company of Port Everglades, Florida.

When the vessel was commissioned, Gulftow® Special 30 was chosen as the lubricating oil. Since the engines use fuel with a sulfur content as high as 1.9%, with a viscosity of 1121 SSU at 100° F and vanadium at 32 PPM, sodium at 38 PPM, that's tough duty for any oil. Gulftow Special 30 stood the test.

(Left) The M/V SEABULK MAGNACHEM in port at Mobile, Ala. for drydocking and overhaul of engines.

(Inset left) After 17,800 hours of operation, lubricated with Gulftow Special 30, this piston from the port engine shows no detectable wear. All rings were completely free.



The port engine during overhaul and inspection.

The MAGNACHEM was able to run 7,800 hours beyond the recommended 10,000 hour overhaul point on the port engine, and 7,400 hours beyond it on the



The M/V SEABULK MAGNACHEM, and her sister ship the M/V SEABULK CHALLENGER (above) are 39,000 ton integrated tug/barge combinations, transporting bulk liquids between U.S. Gulf and Atlantic Coast ports.

starboard. And when the engines were torn down and inspected, the piston skirts were clean and smooth, with no scoring, and all rings were completely free.

Hvide carefully considered the demands these conditions would place on an oil before choosing Gulftow Special 30. They chose it for stability, long life and superior protection in the tough marine environment.

Careful lubricant selection is only part of Hvide's meticulous maintenance program. They constantly monitor the performance of this vessel's engines on sophisticated monitoring consoles reading in both the engine room and on the bridge. And they use Gulf-Check tests on a regular basis to keep aware of oil and engine condition. It's this complete maintenance program that allows Hvide to get such long and economical service from its machinery.

In addition to using Gulftow Special 30 in the Pielstick Diesels, the M/V SEABULK MAGNACHEM

also uses Gulftow 193, Gulf Harmony® 68 AW, Gulf Harmony 46 AW, Gulf E.P. Lubricant HD 220, Gulfcrown® Grease E.P. No. 2 and Gulflube® Motor Oil XHD 10W/30 to meet other lubricant requirements.

Talk to your Gulf pro or Gulf Marine Distributor about Gulf lubricants for marine service. Or, for a brochure on "Gulf Inland and Coastal Marine Lubricants," write to Gulf Oil Corporation, P.O. Box 1563, Houston, Texas 77001.

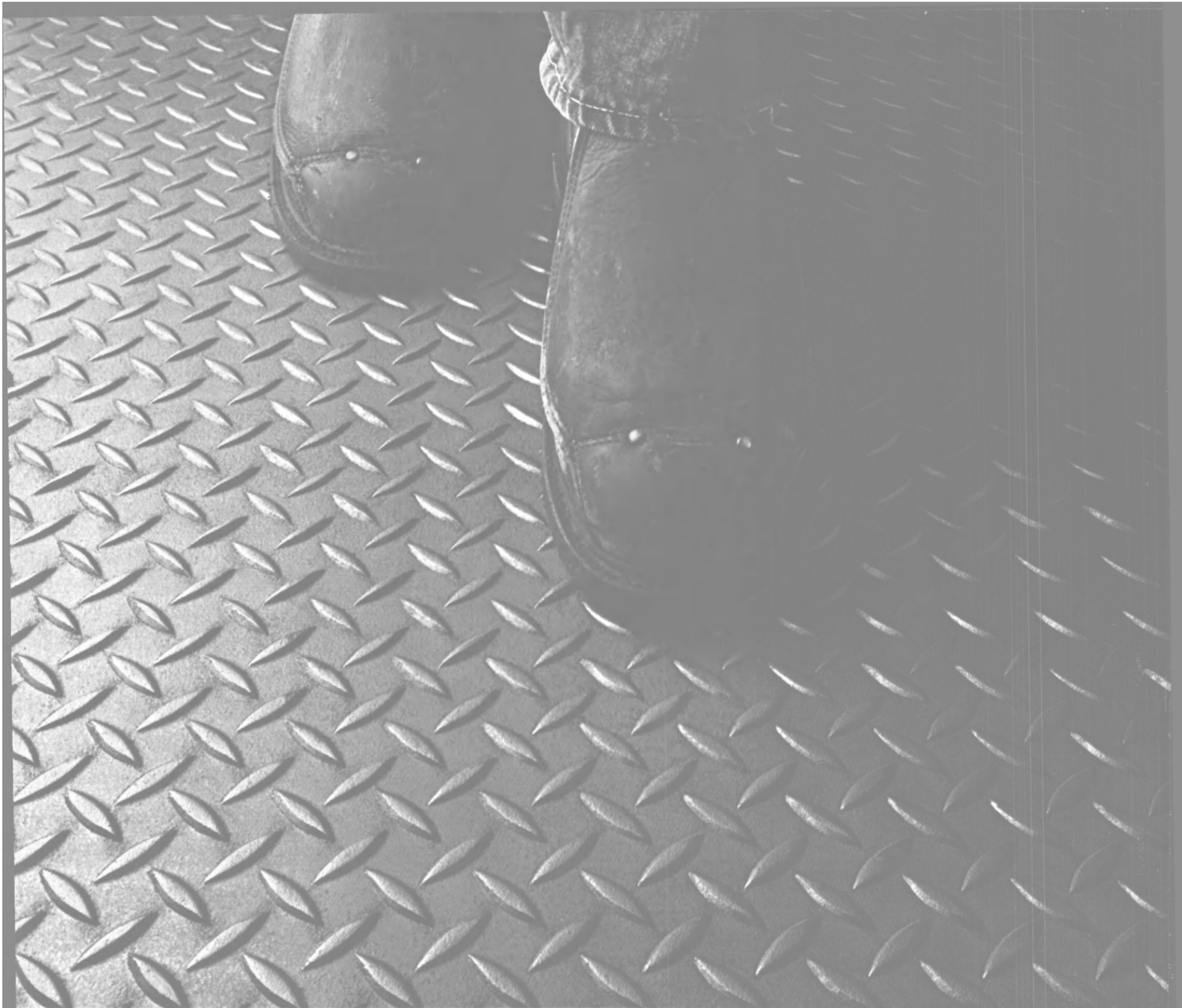


Close inspection of the piston skirts found them clean and smooth, with no scoring.



Ask the pro from Gulf.

Write 196 on Reader Service Card



People are stepping all over us.

Indoors or out, in fair weather or foul, they keep right on walking all over us. But we like it that way. And so do they. Because what they're walking on is our Sure-Foot™ safety plate.

Rolled from Lukens quality plate steel, Sure-Foot™ features an attractive pattern of sharp, clearly-defined projections that resist slippage. And it's easy to match and to keep clean.

The combination of this design and Lukens quality plate steel has never been available before. Put them together and you've got a winning combination that's great for heavy traffic walkways, stairs, docks, ramps, work tables, truck floors, tailgates and kickplates.

The Lukens quality plate steel gives you the strength and support you need, with a sharp, skid-resistant pattern that could be a real life-saver in a lot of applications.

If you haven't already done so, ask your local Service Center about the many sizes and thicknesses available in Sure-Foot™ safety plate.

Or contact your nearest Lukens sales office for further information.



Lukens Steel

Coatesville, PA 19320

Write 451 on Reader Service Card

RO-RO 81

PREVIEW

CONGRESS CENTRE - HAMBURG



The RO-RO 81 Conference in Hamburg that begins on June 30 will take place at a time when major new services are being implemented and planned on both deepsea and short-haul routes. With routes such as Europe-East Africa and Australia-Europe about to see the introduction of large RO/RO tonnage, four 35,000-dwt super RO/RO ships are being discussed for Saudi ownership on the U.S. Gulf-Middle East run. In the areas of short-haul services, conventional ferry operation is changing, with many owners now taking delivery of their first jumbo ferries. Outside the European arena, other new projects on short routes are being developed, notably the recent announcement to create a major RO/RO trailer link across the Great Lakes.

Against this background of activity and commitment to the RO/RO mode, the 5th International Conference & Exhibition on Marine Transport using Roll-on/Roll-off Methods will be devoted to commercial and technical issues that will have significant effects in the near- and long-term futures. Conference discussions will be divided into six sessions spread over three days from June 30 to July 2.

Following the pattern established at the previous meetings in the RO-RO series, the opening session will look at the operational problems of the RO-RO lines—not the least being their relation with the membership of freight agreements. A keynote speaker in the first session will be **Robert McMillen**, president of Totem Ocean Trailer Express (TOTE) of Seattle, which operates a RO/RO service between Tacoma, Wash. and Anchorage, Alaska.

The second session, on RO/RO

ship types and designs, will feature a combined owner/builder contribution from Leif Hoegh & Company A/S of Oslo and the Gdynia Shipyard in Poland. This paper will look at the owner's experience with the third generation of RO/RO carriers, which led to the new concept of the large combination currently being built at the Gdynia yard.

The design session will also examine one of the growth areas for deepsea RO/RO carriage, that of timber products. Here a paper from the Finnish Rauma Repola Shipyard will study the handling of this commodity by RO/RO, and the most economical type of RO/RO tonnage for future trading.

A subject not previously examined by the RO-RO Conferences is the passenger/vehicle ferry. A full session will be devoted to this type of RO/RO operation and ship, including the emergence of the jumbo RO/RO ferry and the implications of their economics and their effects on existing routes. A panel of leading ferry operators, including Sealink UK, Anders Jahre, and two other major Scandinavian companies, together with Compagnie Nationale Algerienne de Navigation (CNAN), will discuss some of the concepts and operational experiences of their fleets. This panel will be chaired by **R.H. Jacquinet** of the MacGregor International Organisation.

The ferry panel discussion will be logically followed by a subject that today demands inclusion in the scope of the Conference, that is propulsion economics. The continuing increase in bunker prices and operating costs has put new emphasis on machinery selection, arrangement, and maintenance,

and developments in these areas related to ferries and RO/RO ships will be discussed by a panel of four major engine designers—B&W Diesels A/S, M.A.N., S.E.-M.T. Pielstick, and Stork-Werkspoor Diesel BV.

Since the previous RO-RO Conference in 1980, when shipowners and naval architects gave their views on the stability of RO/RO ships, much apprehension has been expressed on aspects of their design in the wake of recent accidents. For this reason the 1981 Conference will look further into the issues raised and what remedies might be affected.

Recent criticism has perhaps been leveled unfairly at RO/RO

types of tonnage, which has tended to be singled out of the usual average of marine accidents and casualties. It is most timely that the Norwegian classification society Det norske Veritas will present a major study of RO/RO accidents from 1965 to 1981 at the Conference and discuss the findings. The study is part of a joint research project on the safety of RO/RO vessels being undertaken in Norway with the participation of industry and government.

The final session will look at RO/RO from the port's view, and here the attitude and experience of both developed and a developing port will be presented. Speak-

(continued on page 40)

RO-RO 81 EXHIBITOR LIST

- | | |
|---|--|
| Adamson Butterly Ltd., U.K. | Mattsson Group, Sweden |
| Autoliv Band AB, Sweden | Middle East Cargo Services GmbH, W. Germany |
| Cargospeed Equipment Ltd., U.K. | Moore's of Carnforth, U.K. |
| Consafe Group (JCE Container Safe AB), Sweden | Navire Cargo Gear (SF), Finland |
| Conver Ingenieur-Technik GmbH, W. Germany | Nelson Bolzenschweiss-Technik GmbH, W. Germany |
| Fairplay International Shipping Weekly, U.K. | Niedersächsisches Hafenamts Cuxhaven, W. Germany |
| Frederikshaven Vaerft AS, Denmark | Werft Nobiskrug GmbH, W. Germany |
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| Intering GmbH, W. Germany | Swedish Shipping Gazette, Sweden |
| International Lashing Systems, U.K. | Swedish Trade Council, Sweden |
| Johansson Group, Sweden | Taglicher Hafenbericht, W. Germany |
| Journal of Commerce, U.K. | Transport Dienst, W. Germany |
| Kalmar LMV, Sweden | Triport Ferries (Management) Ltd., U.K. |
| LancerBoss Ltd., U.K. | gte Gesellschaft fur Transport-und Erdbewegungsmaschinen mbH, W. Germany |
| Lansing Ltd., U.K. | TSS Sea Service AB, Sweden |
| Lloyd's List, U.K. | Valmet Oy, Finland |
| MacGregor International, U.K. | Van Leer AB, Belgium |
| Marine Development (Glasgow), U.K. | KG Velle Systems GmbH, W. Germany |
| Marine Engineering/Log, U.S. | AB Volvo Penta, Sweden |
| MariTerm AB, Sweden | Wartsila Turku Shipyards |

RO-RO '81 A Preview

(continued from page 39)

ers from the Port of Gothenburg and from the first fully equipped RO/RO terminal in West Africa, at Apapa, will contribute their experiences for discussion.

An international gathering of some 600-700 participants from all sectors of shipping, shipbuilding, and port industries is expected to attend RO-RO 81. Delegates will also have the opportunity to view some of the RO/RO technologies firsthand in the associated RO-RO Exhibition that will take place adjacent to the conference hall.

CONFERENCE PROGRAM TUESDAY, JUNE 30

2:00 pm Opening address: Dr. Karl Ludwig Monkemeier, director general of the Port of Hamburg Authority (representing the Free and Hanseatic City of Hamburg).

2:15 pm Session 1: The Operational Dilemma—Competition or Closed Conference?: session chairman Sidney Gilman, director, Marine Transport Centre, University of Liverpool.

2:30 pm The Saudi National Shipping Company's View of Deepsea RO/RO: Dr. Abdulaziz M. Al-Turki, managing director, Saudi National Shipping Company, Riyadh.

3:00 pm Operating a High-speed RO/RO Service and Port Handling between Seattle/Tacoma and Alaska: Robert B. McMillen, president, Totem Ocean Trailer Express (TOTE), Seattle.

4:10 pm Flats and Platforms—Their Increasing Importance Not Only in Container but also in RO/RO Services: Wolfgang Graaff, managing director, Graaff KG, West Germany.

4:50 pm A Lessor's Views of the Use of Flatracks and Platforms for Through Transport: Peter S. Glass, manager-specialized equipment, Sea Containers, London.

5:30 pm RO/RO or LO/LO for Mediterranean Traffic?: Roger Caillol, head of commercial service studies and traffic, Port of Marseilles. (This paper will open the debate for comment by leading Mediterranean ship operators.)

WEDNESDAY, JULY 1

9:00 am Session 2: RO/RO Ship and Trailer Design.

9:15 am Forest Products RO/RO in the 1980s: Timo K. Siirila, head of development, Rauma-Repola Shipyard, Finland.

9:55 am Special Design Features for RO/RO Trailers: James L. Davies, vice president-technical services, Transamerica Interway Inc., New York.

10:30 am Recent Third Generation RO/ROs from Polish Builders for Norwegian Owners: Wojciech Zychski, chief designer, Gdynia Shipyard, Poland, and Erik Andersen, chief superintendent, Leif Hoegh and Company A/S, Oslo.

11:40 am Combined Stabilization/Anti-heeling Systems and their Influence on RO/RO Vessels and Ferry Design: Horst A. Halden, director, Interling GmbH, Hamburg.

12:10 pm Session 3: RO/RO Ferries and Short-Sea Routes. Advanced Ice-breaking Design Canadian Ferries: Kenneth E. Wood, assistant general manager (technical), CN Marine, New Brunswick, Canada.

2:30 pm The Super-Jumbo Ferries: A MacGregor-invited panel of operators will discuss the concepts, utilization, and service experiences of some of the latest jumbo ferries. Panelists: A.J. Rogan, principal naval architect, Sealink UK Ltd.; Cdte. A. Ouassel, chief captain, Compagnie Nationale Algerienne de Navigation (CNAN); and speakers from Gotland Rederi A/S and Anders Jahre Line.

4:30 pm The Behavior and Prospects of NW European RO/RO Ferry and Short-Sea Operators: Michael G. Garratt, Marine Transport Centre, University of Liverpool.

5:10 pm Session 4: Diesel Propulsion for Ferries and RO/RO Cargoships. Panelists: H. Klinton, manager, Installation Department, B & W Diesels A/S; U. Viets, head of sales-marine diesels, M.A.N.; J. Gallois, technical director, S.E.M.T.-Pielstick; and J.H. Wesselo, director of research and development, Stork-Werkspoor BV.

THURSDAY, JULY 2

10:00 am Session 5: RO/RO Safety and Securing. Chairman: S.E. Felding, IMCO secretary of the Sub-committee on Containers and Cargoes.

10:10 am Det norske Veritas—Prepared Casualty Statistics of RO/RO Vessel Accidents 1965-1981 and Discussion of the Findings: B.O. Jansson, research engineer, Det norske Veritas, Oslo.

10:50 am RO/ROs—the Problem Areas: Alex Galloway, deputy chief surveyor, The Salvage Association, London.

11:25 am Tank Containers and Unaccompanied Road Tankers: H. Engels, prokurist, combined traffic, road, rail, sea, Hoyer KG, Hamburg.

12:05 pm Lashing of Freight on Trailers—Experiences and Recommendations: Nils-Yngve Danielsson, managing director, Atlantica Insurance Company Ltd., Gothenburg, and Sten-Ake Ulin, chief surveyor, Swedish Association of Marine Underwriters, Gothenburg.

2:10 pm Cargo Securing on Board RO/RO Ships: Jan V. Stenberg, Trans-Consultants, Gothenburg.

2:50 pm The AFNOR Proposals for Minimum Requirements for the Stowage of Combination Vehicles and the Lashing Points Thereon: Loic Henry, head of Transports Division, Association Francaise de Normalisation (AFNOR), Courbevoie, France.

3:20 pm Safety Aspects in Transport-

ing Dangerous Goods by RO/RO: O. Busch, Ministry of Transport, Bonn.

3:45 pm Session 6: RO/RO Port Operations. West Africa—RO/RO Came To Stay: Capt. K. Lundberg, general manager, The Ro-Ro Terminal Company (Nigeria) Ltd., Apapa.

4:20 pm Productivity in a RO/RO Port: Per Bjurstrom, managing director, Gothenburg Stevedoring Company.

5:00 pm Conference closes.



First Of Three Waterman Combination Carriers Features Largest MacGregor Stern Ramp

The 23,500-dwt combination container-roll-on/roll-off ship John B. Waterman (shown above) was christened recently at the Sun Ship yard in Chester, Pa. Sponsor of the vessel was Mrs. George B. Moran, wife of a director of Waterman Industries, during a brief ceremony.

The 692-foot Waterman is being constructed for Waterman Steamship Corporation of New York. She has a beam of 105 feet 6 inches and draft of 33 feet. A 32,000-shp General Electric steam

turbine will propel the ship at a cruising speed of 20.9 knots.

With a capacity of 762 forty-foot containers, the ship will also be capable of carrying trailers and other wheeled vehicles, and unitized or palletized cargo. The forward section is for containerized cargo, but the main deck and hatch covers are capable of RO/RO operations. Aft the ship is 100 percent RO/RO.

For ease in loading and unloading, the ship will have a full slewing ramp at the stern, a self-sus-

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Mrs. George B. Moran and Joseph J. Kleschick, special assistant to the president, prepare to christen the John B. Waterman. Mrs. Moran is the wife of a director of Waterman Industries, the company that contracted the building of vessel with Sun.

taining container crane, side cargo ports, and a cargo elevator in the RO/RO holds. The stern ramp, said to be the largest of its type in the world, was supplied by MacGregor-Comarain, who also furnished the cargo ports, cargo elevator system, and hatch covers.

Upon completion later this year, the John B. Waterman is scheduled to operate on the North Europe trade route from U.S. Gulf and East Coast ports. A sister ship, the Thomas Heyward, is scheduled to be completed by Sun Ship in 1982. The third ship in the series, the Charles Carroll, has been subcontracted by Sun to the Quincy division of General Dynamics and is scheduled for delivery in 1983.

Heisler Named Comptroller For Hoffert Marine

Billy G. Heisler has been named comptroller of Hoffert Marine Inc., according to Paul E. Hoffert, president of the Jacksonville, Fla., company, a leading supplier of deck and engine equipment and services for Naval and commercial vessels. Hoffert Marine also has offices in Nutley, N.J., serving the Port of New York/New Jersey, Norfolk, Va., and Houston.

Prior to joining Hoffert Marine, Mr. Heisler served in the financial structures of such Jacksonville firms as Farmbest Foods, Inc., Florida Rock Industries, and Progressive Driver Services, Inc.

Canadian Yards And Government Speed Up Shipbuilding Training

Canada's major shipyards and the federal government recently signed an agreement to accelerate training programs for skilled tradesmen to meet an expected critical shortage. The agreement was signed by employment and immigration minister Lloyd Axworthy and Ted Jones and Henry Walsh of the Canadian Shipbuilding and Ship Repairing Association.

The agreement is said to be unique in the Canadian shipyard industry by providing for coordinated and cooperative planning among companies—with government assistance—in assessing and forecasting both current and future manpower needs of the industry as a whole. It also places stress on providing more work at all levels in shipyards for women and minorities.

Mr. Jones, senior vice president of Burrard Yarrows Corporation and chairman of the association, said: "Canadian industry must do something now to train more young Canadians in trade skills. If we don't treat this problem seriously, we're going to find in the next five to 10 years there just won't be enough skilled tradesmen available and our industries could be in deep trouble." The

shipyard industry in Canada employs about 14,000, and the majority are skilled trades.

The agreement provides for stepped-up programs to upgrade skills of persons now working in the shipyard industry, and to provide employment and career opportunities for other Canadians—including plans to achieve equal opportunity for women and minorities.

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EDO Gets \$3.9-Million Navy Award To Improve Existing ASW System

EDO Corporation, College Point, N.Y., designer and manufacturer of advanced electronic and electro-mechanical equipment, has announced that its government products division has received a contract from the U.S. Navy for \$3.9-million to produce additional

equipment under an existing order for a specialized antisubmarine warfare (ASW) system.

In commenting on the new order, **Frank Fariello**, president of the EDO division, stated, "This is not a follow-on order but rather an order for improvements to the existing system—the AN/SQR-18A—which we have been supplying to the Navy for several years." EDO supplies a similar system to allied foreign navies.

Work on the new order will be performed at the company's Queens, N.Y., plant.

EDO Corporation, through its divisions and subsidiaries in Connecticut, New Jersey, New York, Kansas, Texas, and Utah, produces a broad array of sophisticated systems, devices and materials that play a significant role in ocean navigation, underwater detection/surveillance, and mineral exploration.

John Duffy To Head Field Services Activities For Metritape, Inc.



John M. Duffy

John M. Duffy has been chosen head of field service for Metritape, Inc., manufacturer of advanced tank gauging equipment in Concord, Mass. He will direct all activities involving Metritape field engineers, and also manage quality control operations based on field service findings.

Previously employed by BLH Electronics, Mr. Duffy brings to Metritape more than 20 years of field service training, applications engineering, and production experience with process control instrumentation. Prior to BLH, he served aboard a U.S. Navy aircraft carrier as electronics technician working on navigational aids and approach control radar systems.

Hrapoff Joins Epsco As General Manager Of Its Northeast Region



Con Hrapoff

Con Hrapoff has joined the Marine Division of Epsco, Incorporated, Westwood, Mass., as general manager of its Northeast Region. His responsibilities will include management of all sales, service, and distribution of Epsco's full line of marine electronics from Maine to the Great Lakes to North Carolina.

Mr. Hrapoff comes to the position with a 20-year background in industrial sales and marketing. Formerly, he was vice president of marketing at J.H. Westerbeke Corporation, and field sales manager for Chrysler Corporation's Marine & Industrial Division. He is a member of The Society of Marine Port Engineers and the Government Relations Committee of the National Marine Manufacturers Association.

*Trinity Industries Inc.
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*announces the formation of
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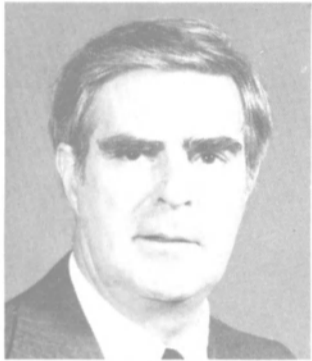
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Horne Brothers Awarded \$6-Million Navy Contract For Overhaul Of LST-1190

Horne Brothers, Newport News, Va., is being awarded a \$5,949,265 firm fixed-price contract for the regularly scheduled overhaul of the tank landing ship USS Boulder (LST-1190). The Supervisor of Shipbuilding Conversion and Repair, USN, Portsmouth, Va., is the contracting activity. (N62678-72-C-0030)

Vincent Lane Named Marine Sales Manager For Fairbanks Morse



Vincent J. Lane

Vincent J. Lane has been appointed general marine sales manager for Colt Industries' Fairbanks Morse Engine Division of Beloit, Wis. He will headquarter at the division's regional sales office, Suite 1007, One World Trade Center in New York City. Announcement of the appointment was made by W.T. Hailey, vice president-sales, for the division.

Mr. Lane had served in marketing management positions with Sulzer Brothers, and most recently has been with Lips Propeller Works.

Barber Steamship Lines Names Steven Roberts Assistant Vice President

Steven A. Roberts has been named assistant vice president in charge of personnel for Barber Steamship Lines, it was announced by Robert H. Pouch, president of the general shipping agent. Mr. Roberts will be responsible for all employment activities and services in the company's network of 20 offices nationwide.

Noting that the number of Barber Steamship Lines employees has grown 20 percent over the past two years, Mr. Pouch says "The need for highly skilled personnel management is more evident than ever. Mr. Roberts has an impressive background in this area that will be of great service in meeting this demand."

Mr. Roberts joined Barber Steamship in 1980 as director of personnel, having spent three years as assistant director of personnel for Albert Einstein College of Medicine. He also obtained experience in the maritime industry from 1968 to 1977, when he worked for Grace/Prudential as personnel director.

Navy Awards \$276-Million Contract To Todd For Three Additional FFGs

Todd Shipyards Corporation has been awarded a \$276-million contract to build three more FFG-7 class guided-missile frigates (FFG-51, 52, and 54) for the U.S. Navy. Two will be constructed by the Los Angeles Division in San

Pedro and one will be built at the Seattle yard.

The company also announced a \$60-million project to upgrade drydocking facilities at both West Coast yards. A \$40-million, 13,500-ton Syncrolift system will be installed at San Pedro. Scheduled for operation early in 1982, it will permit that yard to perform up to five drydockings with one lift system.

Todd also will move a floating drydock from its San Francisco Division yard in Alameda to the Seattle yard, where it will be modified at an estimated cost of \$20 million.

According to a Todd spokesman, the improvements are being undertaken largely as a result of the latest Navy contract, but the facilities will be available to handle commercial vessels as well.



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Pietarinen Named R&D Manager At Valmet Oy

Kari Pietarinen has been appointed Research & Development manager of Valmet Oy Helsinki Shipyard. He is responsible for product development and technical planning of shipbuilding projects.

Mr. Pietarinen has been with Valmet since 1970 and last served as R & D engineer.

Promet Gets \$60-Million Order For Drill Rig For Sedco Incorporated

Promet Private Limited of Singapore, a leading rig and shipbuilder, recently signed a fourth order to build a \$60-million semisubmersible rig for one of the largest American drilling companies. The rig is to be built for Sedco Incorporated, an international drilling company based in

Dallas, and will be used in West Africa, South America, Gulf of Mexico, and South China Sea.

To be named Sedco 600, the semisubmersible measures 170 feet by 170 feet by 90 feet and has a drilling capacity of 20,000 feet in 600 feet water depth. This fourth Sedco order won by Promet is expected to lead to more such contracts in the future. The other three orders were for jackups.

Designed by Sedco, the medium-size rig, which can house 84

men, is capable of exploratory and production drilling in water depths between 25 feet and 600 feet. It is scheduled for delivery in early 1983.

It also has a mooring and subsea system for 600 feet, and is extendable for 1,500 feet water summer conditions, enabling it to work in areas where ships are inefficient and large semisubmersibles are too expensive.

Its mobility is better than most semis, as it moves while under tow at eight knots and is twin-hulled, nonpropelled, column-stabilized.

Yacobellis Named Marine Insurance Manager For Pott's Waterways Division



Jerry J. Yacobellis

Jerry J. Yacobellis has been appointed to the position of manager-marine insurance of the Inland Waterways Division, Pott Industries Inc., it was announced by Willard G. Olmstead, vice president and controller of the division. Pott Industries Inc. is a member of the Houston Natural Gas Corporation group of companies.

Mr. Yacobellis joins the Inland Waterways Division from Alter Barge Line, Inc., Davenport, Iowa. His new position with the IWD includes responsibility for all hull, cargo and liability insurance and claims for Federal Barge Lines, Inc., United Barge Company, and their wholly owned subsidiaries.

C-E Describes Coal Fired Boilers In Book 'Combustion/Fossil Power Systems'

Combustion Engineering, Inc., Windsor, Conn., has announced publication of the 1981 revision of the book "Combustion/Fossil Power Systems," edited by Joseph G. Singer.

A reference book on fuel burning and steam generation, "Combustion" is useful to marine design engineers and consulting engineers.

The text emphasizes the technology of large pulverized coal-fired steam generators and their ancillaries. Coal characteristics and their impact on steam-generating system design are also stressed.

"Combustion" has 1,100 pages and over 700 illustrations. It is available for \$47.50 plus \$4 postage and handling from Combustion Engineering, Inc., Dept. 7021-1904, 1000 Prospect Hill Road, Windsor, Conn. 06095.

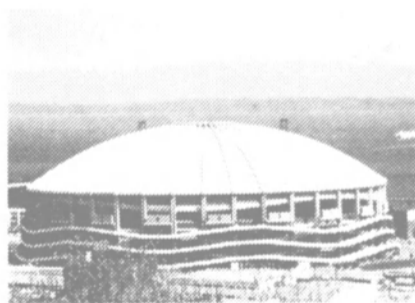
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Calendar Of Coming Events

Ro-Ro 81: 5th International Conference and Exhibition on Marine Transport using Roll-on/Roll-off Methods. June 30-July 2
Organized by *Business Meetings Limited*.

Congress Centrum, Hamburg, Federal Republic of Germany. Contact Ro-Ro Secretariat, 2 Station Road, Rickmansworth, Herts WD3 1QP, England; (09237) 76363, telex 924312. (Preview in June 15 issue of MR/EN)

6th Annual Meeting Aug. 18-20
Sponsored by the *International Omega Association*.

Montreal, Canada. Contact IOA at P.O. Box 2324, Arlington, Va. 22202.

Offshore Goteborg Aug. 19-21
International offshore exhibition and conference organized by the National Swedish Board for Technical Development, the Swedish Maritime Research Centre, Lloyd's Register of Shipping, and others.

Swedish Trade Fair Foundation exhibition halls, Gothenburg. Contact STFF, Box 5222, S-402 24 Gothenburg, Sweden; 031 20 00 00, telex 20600.

International Marine Fuel Utilization Conference Sept. 1-4
Sponsored by *Marine Energy Institute, Inc.*

Baltimore Convention Center, Baltimore, Md. Contact James Cunningham, Marine Energy Institute, 1410 Locust Street, Baltimore, Md. 21204; (301) 825-4238.

8th Annual Research and Engineering for Automation and Productivity in Shipbuilding (REAPS) Symposium Sept. 15-17

Sponsored by various U.S. shipyards and the Maritime Administration, and conducted by IIT Research Institute.

OCEANS 81 Sept. 16-18
Sponsored by the *Marine Technology Society and the Council on Ocean Engineering*.

Sheraton Hotel, Boston. Contact Jack McCarthy, OCEANS 81, P.O. Box 436, Cohasset, Mass. 02025; (617) 383-0720.

Coal Ports West Sept. 16-18
A seminar sponsored by *The American Association of Port Authorities*.

Holiday Inn Holiday, Sacramento, Calif. Contact Rexford B. Sherman, director of research and publications, AAPA, 1612 K Street, N.W., Washington, D.C. 20006; (202) 331-1263.

Baltimore Hilton Hotel, Baltimore, Md. Contact Marge Hernandez, REAPS Program Librarian, IITRI, 10 West 35th Street, Chicago, Ill. 60616; (312) 567-4623.

16th Annual Marine Insurance Seminar Sept. 20-22
Sponsored by *Houston Mariners Club*.

Houston Oaks Hotel. Contact Capt. Jack Roberts, 2918 Green Tee Drive, Pearland, Texas 77581; (713) 485-2464.

Maritime Liabilities Conference Oct. 5-7
Sponsored by *Fisher Maritime Transportation Counselors, Inc.*

Seamen's Church Institute, New York City. Contact Kenneth W. Fisher, FMTC, 50 South Orange Avenue, South Orange, N.J.; (201) 763-4266.

SHIPASIA Exhibition and Conference Oct. 13-17
Sponsored by *The Hong Kong Shipowners Association, the Hong Kong Joint Branch of the Royal Institution of Naval Architects and the Institute of Marine Engineers, and the Shipping Committee of the Hong Kong General Chamber of Commerce, in cooperation with the ShipAsia management. The conference will be organized by Lloyd's of London Press Ltd.*

Ocean Terminal, Hong Kong. Contact Peter K. Johnson, director, ShipAsia '81, 6006 Bellaire Boulevard, Suite 101, Houston, Texas 77081; (713) 666-5188, telex 910 881 5777.

Extreme Loads Response Symposium Oct. 19-20
Presented by the *Ship Structure Committee and The Society of Naval Architects and Marine Engineers*.

Sheraton National Hotel, Arlington, Va. Contact Cdr. James A. Sanial, registration chairman, ELRS, U.S. Coast Guard Headquarters (G-DMT-1/54), Washington, D.C. 20593.

Vth International Congress Oct. 20-23
Sponsored by the *Society of Maritime Arbitrators, Inc., The Maritime Association of the Port of New York (MAPNY), and the Association of the Bar of the City of New York*.

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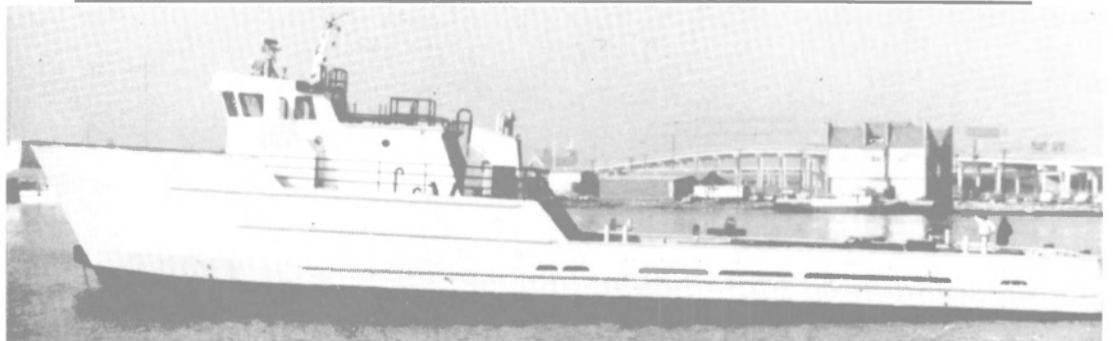
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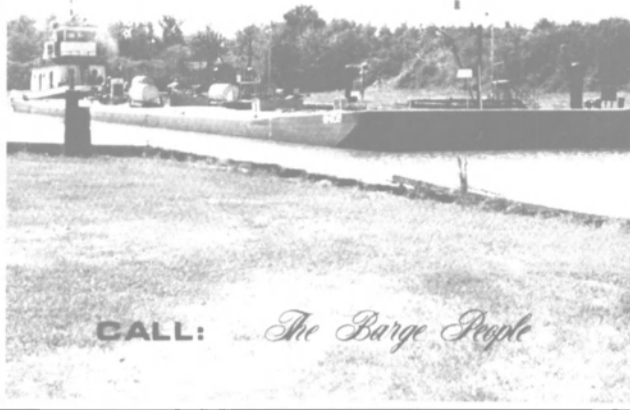
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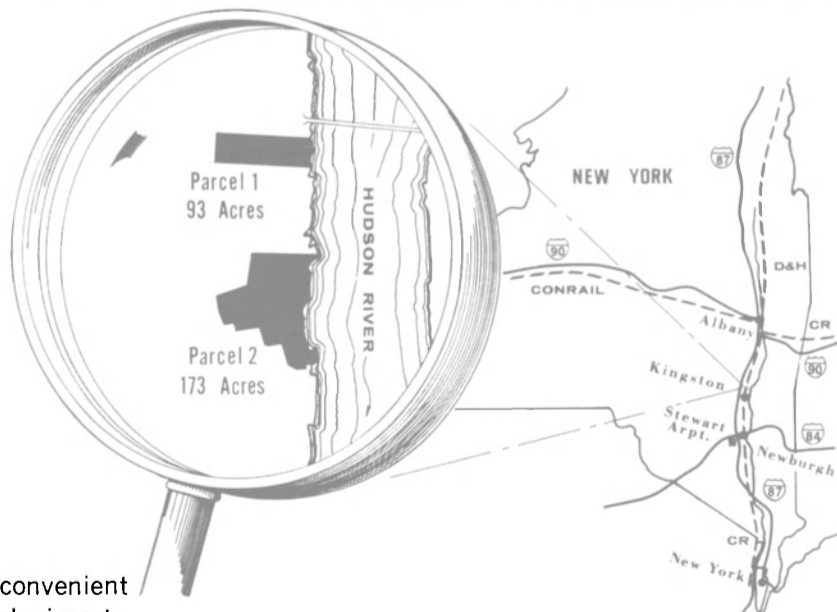
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A. B. S. Grades A-B EH DH
From 3/16 thru 3 inches thick

For Off Shore Rigs

ASTM A-537 Class One and Two
ASTM A-633 Grade C D & E
ASTM A-588 (in structurals as well)
ASTM A-36
3/16 thru 4 inches thick

For Boiler Repair

ASTM A-285 Grade C
ASTM A-515 Grade 60 - 70
ASTM A-516 Grade 60 - 70
ASTM A-387 Grade 11 - 22 - 5
All material with full mill or ABS or Lloyds
Certification.

FOR FAST, COURTEOUS &
EFFICIENT SERVICE CALL —

CARBON STEEL PRODUCTS CORPORATION
(201) 351-2300

Contact: Jerome A. Greenbaum Elaine Klein
Off Shore Sales John Cacciatore Marge Rappisi

4-BLADE PROPELLERS STAINLESS STEEL PORT & STARBOARD

88" diameter - 80" pitch
55% disc area ratio
9 1/2" bore size



Call

JOHN WACTOR (504) 246-8900
P.O. Box 29266, New Orleans, LA 70189
Telex: 58-4200

WINCHES—Steam or Air Operated

Stockless Anchors 3,000 lbs. through 27,500 lbs. in stock, FOB Jersey City

Large inventory of surplus chain and fittings

Supply of new chain, including ten shots of 2 5/16" and twenty shots of 2 5/8"

9 x 12 American Haist & Derrick Winches, reconditioned equal to new

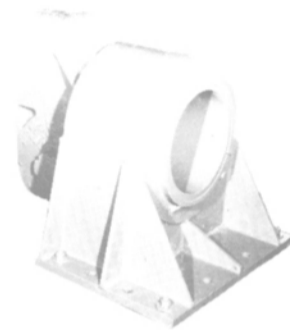
Spare parts for all steam winches

STANDARD STEAM WINCH CO., INC.

Agents for The Crosby Group

191 Van Vorst St., Jersey City, N.J. 07032 201/433-6974

SPECIAL NEW MODEL 614-0 MOORING FAIRLEADS for 1 1/4" WIRE — DECK MOUNTED

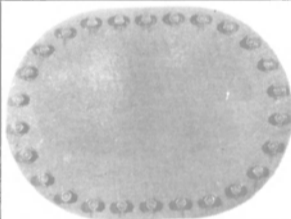


12" Opening Allows for Large Wire Rope Loop

14" Diameter sheave — 12" shank opening — tapered roller bearing. Weight 1135 lbs.

THE BOSTON METALS COMPANY

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Marine Warehouse (301) 752-1077
TWX: 710-234-1637



New 15" x 23" Oval Tank Top Covers

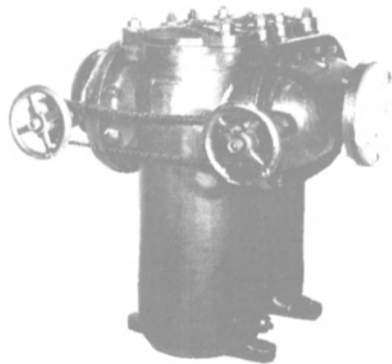
In stock. 15" x 23" clear opening. 10 Available.

\$75 Each

THE BOSTON METALS COMPANY

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TWX: 710-234-1637

Bronze Elliott TWIN LUBE OIL STRAINER



Size 4"—chain driven—type V. Serial #27709—U.S.N. contract Nobs. 381. Mfg. 1943. W.P. 50 lbs.—T.P. 150 lbs. Weight 950 lbs.

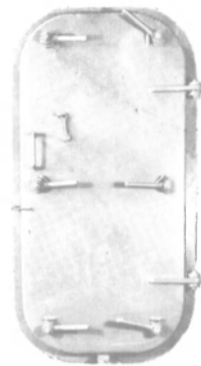
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FOR SALE

NEW WATERTIGHT DOORS

Steel Dogs



6-Dog right and left hand hinged doors with frames. Constructed of 1/4" steel plate and meet Coast Guard regulations for above deck use as well as below deck use. All dogs are bronze bushed. Also available with 8" bronze portlights.

SIZE

26"x48" 26"x66"
26"x60" 30"x60"

EACH DOOR

IMMEDIATE DELIVERY

NEW 7" RADIUS PANAMA CHOCKS

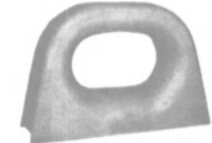
(MEET PANAMA REGULATIONS)

14" X 10" CLEAR OPENING



With extended legs for welding to deck. 14" Wide on base—length 28" — height 27 1/4". IMMEDIATE DELIVERY FROM STOCK.

NEW UNUSED 12" X 6 1/2" PANAMA CHOCKS FOR SMALL VESSELS



Closed chocks — 12" X 6 1/2" inside opening — 23" overall outside — 8" high — 15" high — 7" radius — weight 110 lbs. IN STOCK.

GOOD - USED

DOUBLE STEEL BOLLARDS in stock

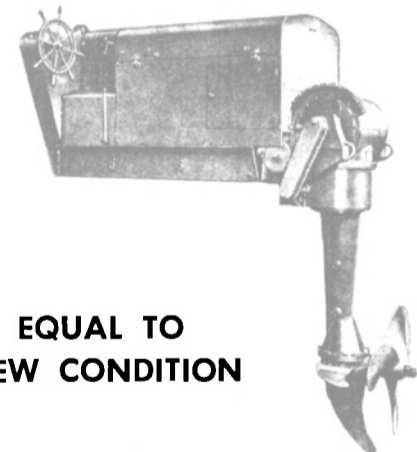


10", 12", 14", 20"

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M & T Model O-2D Marine Outboard Diesel Driven Propulsion Units



EQUAL TO
NEW CONDITION

Equal-to-new-condition. Driven by GM 6-71 diesel—165 HP @ 1800 RPM—2-cycle—6 cylinders. Weight 9300 lbs—48" X 24" propeller. Unit shown with outboard shaft in running position. Distance from deck to bottom of skeg 89". 4 Units immediately available.

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For Sale at Zidell

AVAILABLE NOW FOR IMMEDIATE SHIPMENT

Two 500-ton Gantry Cranes 70-foot Track Span (CAN BE WIDENED TO 100 FEET)



Originally Barge Handling. As used on LASH Ships. Manufactured by Alliance. Late Model built to ABS and MARAD requirements.

Good Condition. Immediately Available. Priced at a fraction of New Replacement Cost. Complete with Lifting Beams and Spreader Beams (not shown in photograph)

AC Power Input Through Cable Reel
DC Hoist & Gantry Motors & Controls
4-150 HP-240 Volt DC Hoist Motors
4-150 HP-240 Volt DC Gantry Motors
2-265 KW-500 Volt DC M-G Sets

Units Can Be Modified

Possible other uses:

- 1) Moving heavy equipment
- 2) Dam Sites
- 3) Concrete Prefab plants
- 4) Railroad yards
- 5) Steel plants

Gear Track is also available at extra cost

200 TON/DIESEL ELECTRIC Floating Crane

FOR SALE - RENT - CHARTER

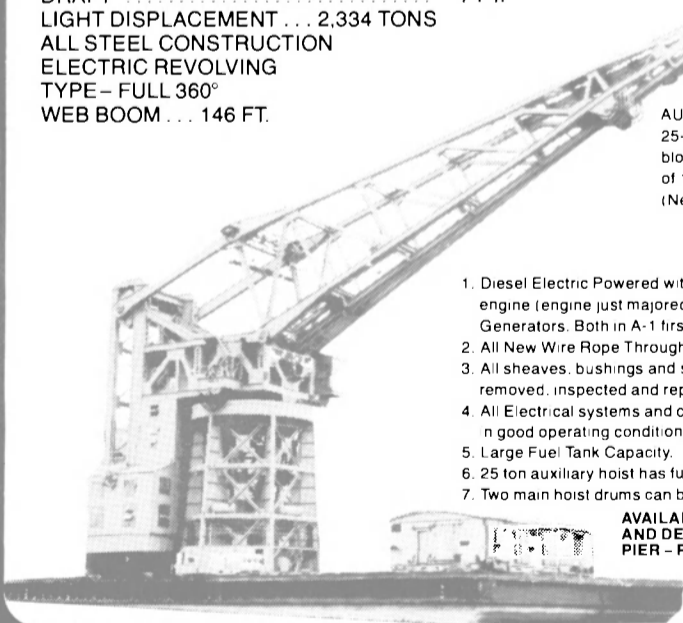
LENGTH OVERALL 140 FT.
BEAM 84 FT.
DRAFT 7 FT.
LIGHT DISPLACEMENT . . . 2,334 TONS
ALL STEEL CONSTRUCTION
ELECTRIC REVOLVING
TYPE - FULL 360°
WEB BOOM . . . 146 FT.

MAIN HOIST
200-Ton - By 2 only, 8 part blocks. Each block carries 2,050 ft. of 1 1/2" 6 x 37 I.P.S. wire rope (New)

AUX. HOIST:
25-Ton - By 1 only 4 part block. Block carries 1,110 ft of 1 3/8" 6 x 37 I.P.S. wire rope (New)

1. Diesel Electric Powered with G.M. 8-278A diesel engine (engine just majored) and 300 KW, 230 volt Generators. Both in A-1 first class condition
2. All New Wire Rope Throughout
3. All sheaves, bushings and sheave pins have been removed, inspected and replaced in Good Condition.
4. All Electrical systems and controls have been placed in good operating condition.
5. Large Fuel Tank Capacity.
6. 25 ton auxiliary hoist has full 140 ft. of boom travel
7. Two main hoist drums can be operated independently

AVAILABLE FOR INSPECTION AND DEMONSTRATION AT OUR PIER - PORTLAND, OREGON



FOUR 30-TON Container Cranes 70-foot Track Span

NEW 1970-72

Priced at a fraction of today's new replacement cost. Good Condition. Immediately Available. From LASH Ships. Late Model. Manufactured by PACEO. Suitable for Ship, Barge or Land Use. Manufactured to ABS and MARAD requirements.

AC Power Input with Cable Reel and 350 feet of 500 MCM Cable.

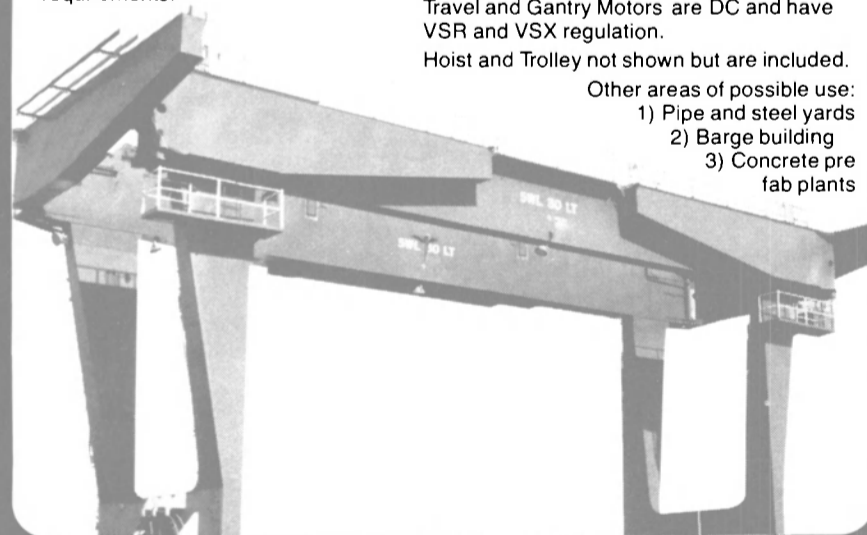
MG set: 250 HP-AC-170 KW 230 DC.

• 200 HP DC Hoist Motor • 100 HP DC Trolley Motor • 2-40 HP DC Gantry Travel Motors • Trolley Travel 275 F.P.M. • Gantry Travel 100 F.P.M. • Hoist Speed: 30 LT @ 85 F.P.M.; 20 LT @ 100 F.P.M.; Empty Spreader 200 F.P.M. • 32'0" Maximum Outstretch • Hoist, Trolley Travel and Gantry Motors are DC and have VSR and VSX regulation.

Hoist and Trolley not shown but are included.

Other areas of possible use:

- 1) Pipe and steel yards
- 2) Barge building
- 3) Concrete pre fab plants



For additional information, brochures or inspection, contact: Hugh Sturdivant, Sales Manager, or A.D. Canulette, Jr.

ZIDELL

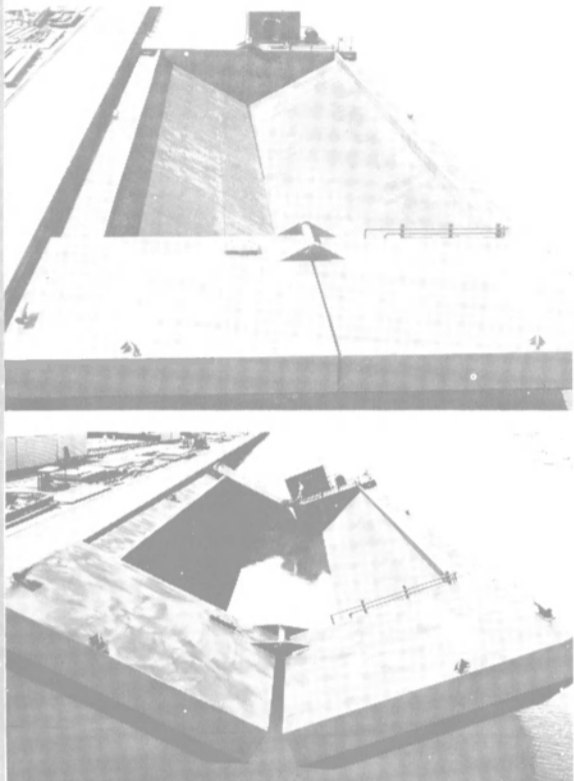
ZIDELL EXPLORATIONS, INC.

3121 S.W. Moody Ave., Portland, Oregon 97201
Phone: (503) 228-8691 • Telex 36-0503 • Cable "Zidell"

For Sale or Charter at Zidell

AVAILABLE FOR IMMEDIATE DELIVERY

Split Type Self Dumping Scows



Built 1979. For sale, long or short term charters

SPECIFICATIONS

ABS loadlined for USCG-approved offport dumping

Length (ML'D)	180'-0"
Beam (ML'D)	50'-0"
Depth of Mid-Body (ML'D)	14'-0"
Hopper Length (ML'D)	128'-0"
Level Hopper Volume	1421 cu. yd.
DWT @ d - 10.22 ft.	1615 L.T.
Rake Lengths F. & A.	26'-0"
Twin Skegs	
Stern & Fwd. Rake Decks Stepped Up	2'-0"
Engine GM 671	
Hydraulic Pumps (2) 12 GPM & 75 GPM	
Time To Open (Fully Closed to Fully Open)	6 Min. 5 Sec.
Time To Close	4 Min. 34 Sec.
Hopper Angle Fully Open	53.78
Fuel Tank Capacity	445 Gal.
Hydraulic Cylinders (2 Fwd. & 2 Aft)	
	18" Diam. 120" Stroke
Plating	
Side	9/16"
Bottom	5/8"
Hopper	5/8"



American Crane Barge

BARGE DATA

Displacement Light	1,200T
Gross Tonnage	911
Net Tonnage	911
Length	151'-6"
Beam	60'-0"
Hull Depth	12'-0"
Flush Deck Area	6,000 Sq. Ft.
Engine Room Area	412 Sq. Ft.
Office & Eating Area	136 Sq. Ft.
Diesel Fuel Tanks	36,000 Gal.
Fresh Water Tanks	36,000 Gal.
Bunker "C" Fuel Tanks	12,000 Gal.
Ballast System	None

CRANE DATA

Manufacturer	American Hoist & Derrick Co.
Model & Type	305 Revolver
Capacity	125 T.
Boom (Certified rating with 140' length, 160' available)	
20 part rigging	2,200 ft., 7/8"φ - 6 x 36 I.P.S.
4 part standing standing bail	2-186 ft., 1 1/4"φ - 6 x 36 I.P.S.
Main Hoist (Certified rating: 58.5 T. @ 50' to 100'; 8 part rigg.)	
20 part rigging	3,250 ft., 1"φ - 6 x 36 I.P.S.
Aux. Hoist (Certified rating: 10.0 T. @ 100'); 15 T. Capacity	
2 part rigging	635 ft., 7/8"φ - 6 x 66 I.P.S.

Self Unloading Aggregate Barge



ZAG-501

Length (O.A.)	248'-0"
Beam	63'-0"
Depth	16'-0"
Displacement Light	1010 S.T.
Draft Light (F.W.)	2'-7 1/2"
Draft Loaded (F.W.)	11'-8"
DWT	4000 S.T.
Diesel Electric Set	100 KV
Hopper Volume	2667 cu. yd.

Hopper Unloading Gates: 27-36" x 36" Horiz. sliding gates w/individual hydr. controls.

Main Unloading Conveyor: 48" wide belt, 30 H.P. elect. motor, 250 ft./min. Max. disch. rate - 667 cu yd./hr.

Transfer Conveyor: 42" wide belt, 10 H.P. elect. motor, 350 ft./min. off loading location - Stbd. side fwd. at 9 ft. above deck

Hull Plating: Deck, side shell & bott. 9/16"

Bulk Petroleum Barge

ZTB-601

Type: Ocean unmanned service • Grade "B" bulk cargo

USCG: Documented with "Consolidated Certificate of Enrollment and License" • Operating - "oceans" • Official No.: 280356 • Net: 2286 • Gross: 2286 • Length: 257.5' • Breadth: 55.1' • Depth: 20.3'

ABS: International Load Line (valid until 6 December, 1984) Cert. No. 61-24, 479-2. Aux. Machinery & Pumps: (4) Bingham pumps - 8 x 14 VTX - 5 stage - cap. 600-1500 GPM - Type #F-150 - driven by 4 GMC 6-71 diesels. (1) Diesel generator set - 5 KW - Lister - 2 cyl. - air cooled. Deck Derrick: (2) Booms & masts - one port and one starboard - rated 2240 lb. lift with two 2-ton winches. Fill & Discharge Lines: 6" fill and 6" discharge tying into 8" lateral lines. Aft Mast: (1) Stern loading and light mast. Capacity: 14 tanks - 38,900 bbls. (on USCG Certificate)



Combination Deck Cargo & Tank Barge

Fully-Classed Ocean Service



ZPC-402 230' x 60' x 15' Comb. Deck Cargo & Grade 'D' Tank Barge

Length O.A.	230'-0"
Beam	60'-0"
Depth	15'-6"
Deadrise	
Number of Tanks	10
Total Tank Volume @ 95%	24,000 BBL
Cargo Pumps	Two Twin Screw, Delevel IMO GTS-268-066-CBEM
Rating	1500 GPM, 1150 RPM, 100 PSIG Disch. Press. 5000 SSU
Location	Below Deck Pumproom in Fwd. Rake
Diesel Engines	Two Detroit Model 8V-71, 230 HP @ 1800 RPM
Location	Above Deck in Fwd. Deckhouse
Fuel Capacity	1400 Gal.
Fill & Disch. Connections	8" ANSI 150# FLG P/S
Heating Coils	2" Sch. 80 Pipe For Shore Steam
Hull Plating	Deck 1/2", Side Shell 3/8", Bott. 3/8", Shear Strake 1/2"
Deck Cargo Dwt. at Loadline	3900 S.T.

For additional information or to make an appointment to inspect, call or write:

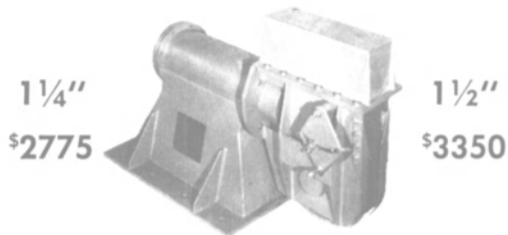
Thomas A. Sherwood or
Andy Canulette, Jr.



ZIDELL EXPLORATIONS, INC.

3121 S.W. Moody Ave., Portland, Oregon 97201
Phone: (503) 228-8691 • Telex 36-0503 • Cable "Zidell"

**NEW BALANCED HEAD
FAIRLEADS**



1 1/4"
\$2775

1 1/2"
\$3350

THE BOSTON METALS COMPANY

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**WILSON-SNYDER 10 GPM 100 LB
Horizontal Auxiliary
PORT BOILER FEED PUMP**

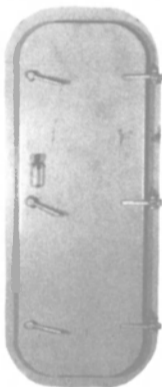


Steam driven reciprocating pump. Operating pressure 100 lbs. 10 GPM @ 100 LBS. Suitable for boilers to 150 HP. 1 1/2" Suction — 1" discharge.

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**UNUSED EX-U.S.N.
FUME-TIGHT
DOORS**

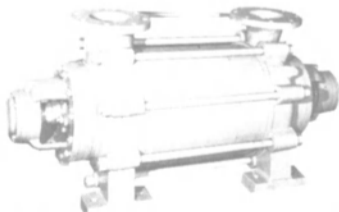


3-Dog — 3 hinge — with 26" X 78" clear opening. OA height of frame 87 1/2" — OA width of frame 35 1/2". Two doors have 10" portlights installed. RH & LH available. Inquire for details.

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NEW — UNUSED NIJUIS FIRE PUMP



550 GPM @ 323' head @ 1800 RPM
\$1975

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Marine Warehouse (301) 752-1077
TWX: 710-234-1637

**15 1/2" & 16" CLEAN BRASS
4-DOG MARINE
PORTLIGHTS**



Recently carefully hand removed from ocean vessels. Suitable for re-use on shipyard conversions or for marine ornamental use. Heavy marine standard glass . . . clear or can be furnished frosted for use in special locations.

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**WALZ & KRENZER
USCG APPROVED HEAVY SLIDING
DOORS WITH FRAMES**

All Doors Bolted In And Easily Removed
● 1 36"x66" Horizontal hand mech. steel sliding door—complete with mechanical local & remote gear boxes
● 1 60"x78" Steel watertight sliding door. Complete with mechanical local and remote boxes.

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**NEW—UNUSED DAVIDSON CHILLED WATER
CIRCULATING PUMPS**



65 GPM @ 145' head. End suction—topside discharge. Bronze pump—2" suction—1 1/2" discharge. Bolt circles: Suction 4 3/4"—discharge 3 1/2"—flanged. MOTOR: 7 1/2 HP—440/3/60/3500 RPM—mfg by Reliance—frame 215 CN. OA length 25"—OA width 13 1/2"—wt. 232 lbs. Drawing on request. Made for U.S. Navy. Built 1972—FSN-1H-4320-852-7147.

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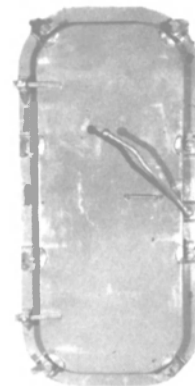
**WORTHINGTON
HIGH PRESSURE
AIR
COMPRESSORS**



10 CFM — 600 lbs. 7 1/2 HP
440/3/60 A.C. Motors

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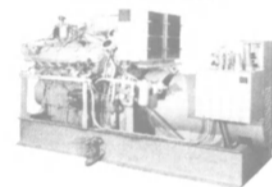
**QUICK-ACTING
LEVER
OPERATED
WATERTITE
DOORS**

26" X 66"
8-DOG
Rights & Lefts

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**250KW GM 12-V-71
DIESEL GENERATOR SETS
AIR START**

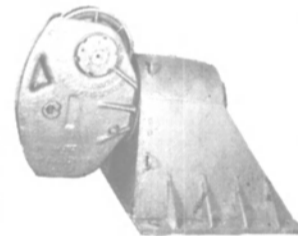


440/3/60/1800 — with free-standing switchgear. Generators manufactured by Electric Machinery Co. — E.M. Bemac — brushless — synchronized — keel cooled.

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**SURPLUS
BERGER
FAIRLEADS**



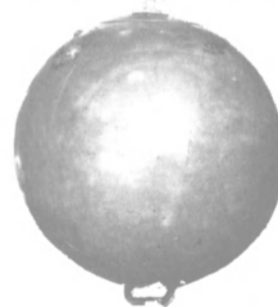
2 Model 620 — for 1 5/8" wire — 20" sheave. Located San Francisco, Ca.

\$3959 Each

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**NEW — UNUSED
SPHERICAL
MOORING
BUOYS**



About 58" diam. With tieplates top & bottom. Est. wt 680 lbs each. 120 lbs submergence

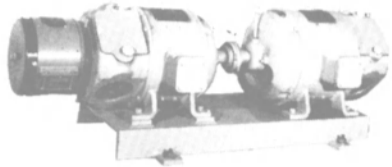
CYLINDRICAL BUOYS

3 Available — 5 ft X 9 ft — with wood bumpers

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LOUIS-ALLIS M.G. SETS
2.5 KW 120 Volt Single Phase 60 Cycle Output
120 Volt D.C. Input — 1800 RPM



2½ KW—115 volts single phase A.C. output. GENERATOR: Type GNA—class 1G— Frame 28A—Form A—1800 RPM—5 KVA—2.5 KW 115 volts AC— 60 cycle —50% PF—43.4 amps. MOTOR: Louis Allis—Type GNA—Class E—Frame 25A—Form A—1800 RPM—115 volts DC—32 amps—shunt wound (with attached Ward-Leonard frequency regulator). Some control panels available.

CAN FURNISH WITH 230 VOLT DC INPUT

THE BOSTON METALS COMPANY

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Marine Warehouse (301) 752-1077
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HATCHES

**NEW UNUSED
FLUSH HATCHES**



54" X 77"

14-Dog — operated from top side by T-key, with dogs marked to show open & closed positions.



24" X 30"



30" X 30"

4 Dogs on underside—topside flush, with T-Key openers.



60" X 42" X 12"
10-DOG



72" X 72" X 12"
16-DOG



36" X 26" 7-DOG
TANKER EXPANSION
TRUNK

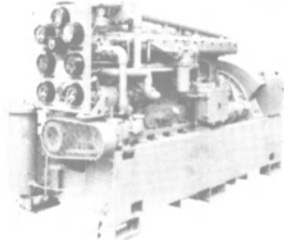


42" X 42" X 9"
7-DOG
SPRING
LOADED

THE BOSTON METALS COMPANY

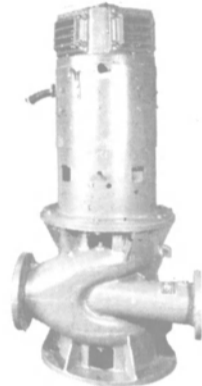
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LST MACHINERY



100KW GBD-8 DIESEL GENS.

120/240 VDC—417 amps—stab shunt—1200 RPM—Delco generator—Self-excited. ENGINE: Superior GBD-8—8-cyl —5½X7—150 HP—30 volt electric starting. Reconditioned to ABS. Dry wt. 10,000 lbs—DAL 124"—65 11/16" high —42" wide. Hgt necessary to pull piston 68". Fuel consumption 0.620 lbs/hr.



**GARDNER-DENVER
BALLAST PUMP**

Bronze — 1500 GPM — 56' head or 25 bs — 8" suction — 6" discharge. MOTOR: Century 30 HP 230 VDC 110 amps 1750 RPM. 40° T rise — stab. shunt — ballbearing — dripproof. Controls available.

TAILSHAFTS

Diameter: 6 1/8" Length: 21' 2 5/8"

THE BOSTON METALS COMPANY

313 E. Baltimore St.

752-1077

Baltimore, Md. 21202

TWX: 710-234-1637

**ELECTRO-PNEUMATIC
PROPULSION CONTROL**
for speed control
and reversing
PORT & STARBOARD



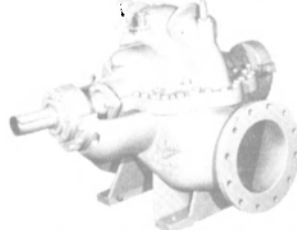
For 12-567A engine and Falk reduction gear. As used for USN LST vessels. Bridge and engine room control.

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**FACTORY NEW NIJUIS 10" X 8"
SPLIT CASE HORIZONTAL PUMPS**

**\$2950
EACH**



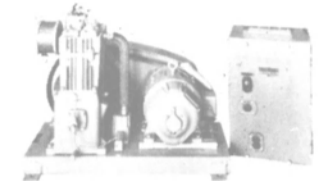
Best efficiency 3400 GPM @ 160 PSI — 1500 RPM or 5220 GPM @ 30 PSI — 1500 RPM maximum capacity. 4500 GPM @ 125 PSI — 1800 RPM. Requires 500 HP. 2000 GPM @ 110 PSI — 1450 RPM (using 6-V-71 engine reducing 8" to 6" suction).

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Marine Warehouse (301) 752-1077
TWX: 710-234-1637

GOULD FIRE & BILGE PUMP

250 GPM & 100 lbs—4" suction—3" discharge—2200 RPM—bronze—manufactured by Gould. Direct connected to 30 HP 230 volt DC Louis-Allis motor.



CLUTCH TIRE AIR COMPRESSOR

Model 320—4 X 2½ X 3"—10/15 CFM—100/150 PSI—700 RPM. MOTOR: 3 HP—230 volts DC—1750 RPM.

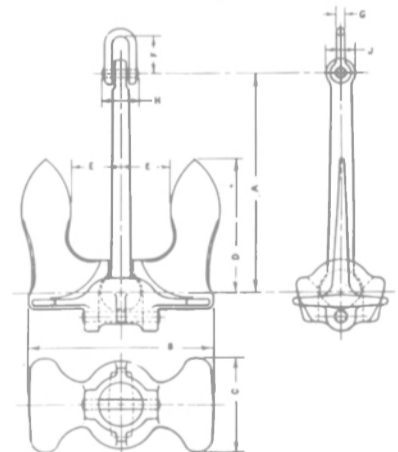


**COMBINATION LUBE OIL &
SALT WATER COOLING PUMPS**

Model 3630—mfg by Goulds—1150 RPM. Rotary lube oil pump one end (35 GPM @ 15 PSI—1½" X 1½")—salt water circulating pump other end (35 GPM @ 15 PSI—2" X 1½") G.E. Motor model 5B254A1988—type B —Frame 254—3 HP—230 VDC—11.9 amps—1150 RPM compound—Cont. 40°C temp rise. Ball bearing.

ANCHORS -- CHAIN

DETACHABLE LINKS
PEAR-SHAPED DETACHABLE LINKS



LARGE BALDT-TYPE ANCHORS
NEW — UNUSED LLOYD'S OR ABS CERTIF.
12000 LBS & 8000 LBS

IN STOCK—FOR MOORING—NO CERTIF.
● 3000 LB DANFORTH ● 5300 LB BALDT
● 4300 LB BALDT ● 14750 LB BALDT ● 10750 LB BALDT

ANCHOR CHAIN

- 2½" — New — Grade 3 — Certif.
- 3" — New — Grade 3 — Certif.
- 3¼" — New — Grade 3 — Certif.
- 3½" — Grade 3 — Certif.
- 1½" — Dilok

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Marine Warehouse (301) 752-1077
TWX: 710-234-1637

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James D. Nail Co., Inc., 3195 NW 20th Street, Miami, FL 33142
York Division (Borg-Warner Corp.), P.O. Box 1592, York, PA 17405

ANODES—Cathodic Protection

Engelhard Industries Division, 2655 U.S. Route 22, Union, NJ 07083
Kaiser Aluminum & Chemical Corp., 300 Lakeside Dr., (Rm 2039KB), Oakland, CA 94643
Wilson Walton International Inc., 66 Hudson Street, Hoboken, NJ 07030

BEARINGS—Rubber, Metallic, Non-Metallic

Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44052
Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

BLASTING—Cleaning—Equipment

Aurand, 1270 Ellis Street, Cincinnati, OH 45223
Butterworth Systems Inc., 224 Park Ave., Florham Park, NJ 07932
Guff Corporation, One Pleasant Grove Rd., Seminole, OK 74868

BOILERS—Tube Cleaning

Clayton Manufacturing Company, 405 No. Temple City Blvd., El Monte, CA 91731
Combustion Engineering, Inc., Windsor, Connecticut 06095
A.B. Murray Company, Inc., P.O. Box 476, Elizabeth, NJ 07207

BROKERS

B.R.I. Coverage Corporation, 156 Williams Street, New York, NY 10038
Capt. Astad Company, Inc., P.O. Box 53434, New Orleans, La. 70153
Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
Mowbray's Tug and Barge Sales Corp., 21 West St., N.Y., N.Y. 10006

BUNKERING SERVICE

Belcher Company of New York, Inc., 48-02 54th Avenue, Maspeth, NY 11378
Gulf Oil Trading Co., 1290 Ave. of the Americas, N.Y., N.Y. 10019

CARGO TRANSFER & ACCESS EQUIPMENT

MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016

CHAINS

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Chocking Systems
Philadelphia Resins Corp., 20 Commerce Drive, Montgomeryville, Pa. 18936

CONTAINERS—Cargo Container Handling

Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

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Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
Megasystems, Inc., 1075 N.W. 58th Street, Boca Raton, FL 33431
Pan American Systems Corporation, P.O. Drawer 400, Belle Chasse, LA 70037
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06052

COUPLINGS

Bird-Johnson Co., 110 Norfolk St., Walpole, MA 02081

CRANES—HOISTS—DERRICKS—WHIRLS

Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081
M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07037
National Supply Company, 1455 West Loop South, Houston, TX 77027
J. D. Neuhaus, Witten-Heven, Hebezeuge, D 5810 Witten-Heven, West Germany
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

DECK MACHINERY—Cargo Handling Equipment

Markey Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134
Navire Cargo Gear (SEA) Pte. Ltd., 9th Floor Orchard Towers, Orchard Road, Singapore 0923

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General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, Massachusetts 02360
Golfen Marine Company, Inc., 162 Van Brunt Street, Brooklyn, NY 11231
Twin Disc, Incorporated, Racine, Wis. 53403

ELECTRICAL EQUIPMENT

Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Federal Pacific Electric Company, P.O. Box 1800, Somerville, NJ 08876
Marine Safe Electronics of Canada Ltd., 101 Jardin Dr., Suite 24, Concord, Ontario, Canada L4K 1B6
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

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EQUIPMENT—Marine

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Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014
Conhagen/USMP Company, Inc., 4475 South Clinton Ave., South Plainfield, NJ 07080
Consafe Inc., P.O. Box 40339, Houston, TX 77040
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550
J. H. Menge & Company, Inc., P. O. Box 23602, New Orleans, La.
John P. Nissen, Jr. Company, Glenside, PA 19038
Rockwell International, Power Tool Division, 400 N. Lexington Ave., Pittsburgh, PA 15208
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080
Schwepper Beschlag GmbH, Postfach 101110, 5620 Velbert 1, West Germany
Stal Laval Inc., 525 Executive Blvd., Elmsford, NY 10523
Sudoimport, 5 Kalyaevskaya, Moscow K-6, USSR
Unitor Ships Service A/S, Mastemyr, 1410 Kolbotn, Norway
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186
Xorbox, Division of Greene & Kellogg, Inc., 290 Creekside Dr., Tonawanda, NY 14150

EVAPORATORS

Aqua-Chem Inc., P.O. Box 421, Milwaukee, WI 53201
Riley-Beard, Inc., P.O. Box 1115, Shreveport, La. 71130

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Fibergrate Corporation, P.O. Box 344610, Dallas, TX 75234
Lukens Steel Company, Coatesville, PA 19320
Millard Controlled Metals, 5 Louise Drive, Ivyland, PA 18974

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Hartzell Propeller Fan Company, 901 S. Downing Street, Piqua, OH 45356
Joy Manufacturing Co., 338 So. Broadway, New Philadelphia, Ohio 44663
Zidell Explorations, 3121 S.W. Moody St., Portland, Ore. 97201

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Hughes Bros., Inc., 17 Battery Place, New York, N.Y. 10004
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44052
Seaward International, Inc., 6269 Leesburg Ave., Falls Church, Va. 22044

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Continental Illinois National Bank, 231 S. LaSalle, Chicago, IL 60693
Kidder, Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005
Warburg Paribas Becker, Inc., 2 First National Plaza, Chicago, Ill. 60670

FUEL OIL/ADDITIVES—Analysis & Combustion Testing

Rolfite Products Inc., 300 Broad Street, Stamford, CT 06901

FURNITURE

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Comfort-Mate, Inc., 7988 NW 56th Street, Miami, FL 33166

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Lockstad Company, Inc., R D 2 Burnett Road, Mendham, NJ 07945
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
Julius Mock & Sons, Inc., 20 Vesey St., New York, NY 10017

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Phosmarin Equipment, 21, Boulevard de Paris, 13002 Marseille, France
Sub Enterprises, Inc., P.O. Box 16531, Irvine, CA 92713

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Fluid Technology, Inc., 10626 Phillips Highway, Jacksonville, FL 32224
Hydranautics, 6338 Lindmar Drive, Goleta, CA 93017
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229

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Camar Corporation, P.O. Box 460, Worcester, MA 01613
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039
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Adams & Porter, 1 World Trade Center, Suite 8433, New York, N.Y. 10048
Alexander & Alexander, Inc., 1185 Ave. of the Americas, New York, N.Y. 10036
B.R.I. Coverage Corporation, 156 Williams St., New York, NY 10038
Midland Insurance Co., 160 Water St., New York, N.Y. 10038

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Masonite Commercial Division, Dover, OH 44622
Waltz & Krenzer, Inc., 400 Tralbold Road, Rochester, NY 14624

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Oreck Corp., 100 Plantation Rd., New Orleans, LA 70123
Perko Inc., P.O. Box 6400D, Miami, Florida 33164
Phoenix Products Company, 4785 North 27th Street, Milwaukee, WI 53209
Port Electric Supply Corp., 157 Perry Street, New York, N.Y. 10014

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Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080

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Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

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Agemar, Ave. 17 No. 108-129, P.O. Box 1465, Maracaibo, Venezuela
American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015
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Jacksonville, Florida 32211
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Childs Engineering Corp., Box 333, Medfield, Mass. 02052
John P. Colletti & Associates, P.O. Box 13378, Pittsburgh, PA 15243
Columbia-Sentinel Engineers Western, Inc., P.O. Box 21542, Seattle, WA 98111
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Hampton Roads Engineering, Inc., 119 E. Little Creek Rd., Norfolk, VA 23505
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Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114
Offshore Power Systems, 8000 Arlington Expressway, Jacksonville, FL 32211
Oramar International Enterprises, Inc., P.O. Box 13069, Port Everglades, FL 33316
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Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316
Seacor Systems Engineering Associates, Corp., P.O. Box 2030, 19 Cherry Hill Industrial Park, Perina Blvd., Cherry Hill, NJ 08003
Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426
George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007
T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2
R.A. Stearn, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235
Richard R. Taubler Inc., 8 Columbia St., Milford, Del. 19963
Thames Engineering Consultants Inc., P.O. Box 589, New London Ct. 06320
Timsco, 622 Azalea Road, Mobile, AL 36609
Corning Townsend III, 18 Church St., Georgetown, CT 06829
Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706
Wesley D. Wheeler Assoc., Ltd., 104 E. 40th St., Suite 206, New York, NY 10016
Thomas B. Wilson, 920 North Avalon Blvd., Wilmington, CA 90744
Wind Ship Development Corporation, 690 Main Street, Norwell, MA 02061
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XPLO Corporation, 229 Fifth Street, Gretna, LA 70053

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Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024
Dantronics Company, P.O. Box 204, Boca Raton, FL 33432
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Electro-Nav Inc., 840 Bond Street, Elizabeth, NJ 07201
EPSCO, Inc., 411 Providence Highway, Westwood, Mass. 02090
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080
Griffith Marine Navigation, Inc., 134 North Avenue, New Rochelle, NY 10801
Harris Communications, RF Communications Division, 1680 University Avenue, Rochester, NY 14610
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631
ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611
Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780
Iatron Corp., 5 Alfred Circle, Bedford, MA 01730
Kongsberg North America Inc., 135 Fort Lee Road, Leonia, NJ 07605
Kongsberg Vapenfabrik, Norcontrol Division, P.O. Box 145, Horten 3191, Norway
Krupp Atlas-Elektronik, 241 Erie Street, Jersey City, NJ 07302
Magnavox Navigation Systems, 2829 Maricopa Street, Torrance, CA 90503
Maritel, Inc., 139 Old Solomon's Island Road, Annapolis, MD 21401
Nav-Com, Inc., 711 Grand Blvd., Deer Park, NY 11729
Navidyne Corp., 11824 Fishing Point Drive, Newport News, VA 23605
Navigation Communications Systems, Inc., 20100 Plummer Street, Chatsworth, CA 91311
North American Philips Communication Corp., 55 Knights Bridge Road, Piscataway, NJ 08854
RCA Service Co., Building 204-2, Camden, N.J. 08101
Racal-Decca Marine, Inc., P.O. Box G, #1 Commerce Blvd., Palm Coast, FL 32037

Radar Devices, Inc., 2955 Merced Street, San Leandro, CA 94577
Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103
Raytheon Ocean Systems Company, Westminster Park, Risho Avenue, East Providence, RI 02914
Raytheon Service Co., 103 Raesler Rd., Glen Burnie, MD 21061
Simrad Inc., 1 Labriola Court, Armonk, N.Y. 10504
Southern Marine Research, Inc., 1401 N.W. 89th Court, Miami, FL 33172
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721

OILS—Marine—Additives

B. P. Marine North America Trading, Plaza 9, 900 Route 9, Woodbridge, NJ 07095
Ferroal Corporation, P.O. Box 1764, Bellevue, WA 98009
Gulf Oil Company—U.S. (Domestic Oils), 909 Fannin Street, Houston, TX 77001
Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
Houston Marine Services, Inc., 505 Atrium One, 11811 1-10 East, Houston, TX 77029
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Mobil Oil Corporation, 150 East 42nd St., New York, N.Y. 10017
Texaco, Inc. (International Marine), 135 East 42nd St., N.Y., N.Y. 10017

OIL/WATER SEPARATORS

Alfa-Laval, Inc., 2115 Linwood Avenue, Ft. Lee, NJ 07024
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932
Sigma Treatment Systems, 2 Davis Ave., Frazer, PA 19355

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American Abrasive Metals, 460 Coit Street, Irvington, NJ 07111
Ameron, 4700 Ramona Blvd., Monterey Park, CA 91754
Belzona Molecular Metalife Inc., 224 7th Street, Garden City, NY 11530
"CONSOL" manufactured by Hanline Bros., Inc., 1400 Warner St., Baltimore, MD 21230
Devoe Marine Coatings Co., P.O. Box 7600 Louisville, KY 40207
Eureka Chemical Company, 234 Lawrence Ave., So. San Francisco, CA 94080
International Paint Co., 17 Battery Place North, Suite 1150, New York, N.Y. 10004
Jatun-Baltimore Copper Paint Co., 501 Key Highway, Baltimore, MD 21230
Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O. Box 250, Edison, N.J. 08817
Palmer Products Inc., P.O. Box 8, Worcester, PA 19490
Selby, Battersby & Company, 5220 Whiby Avenue, Philadelphia, PA 19143

PETROLEUM SUPPLIES

Houston Marine Services, Inc., 505 Atrium One, 11811 1-10 East, Houston, TX 77029
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002

PIPE-HOSE—Cargo Transfer, Clamps, Couplings, Coatings

Camlock Flange Sales Corp., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
CUNICO Corp., Cooney Pipe & Copper Works Div., 214 N. Hawaiian Ave., Wilmington, CA 90748
Hydro-Craft, Inc., 4223 Edgeland, Royal Oak, Mich. 48073
Kubota Ltd., 2-47, Shikit Suhigashi 1-Chome, Naniwa-Ku, Osaka 556-91, Japan
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Sanchem, Inc., 1600 South Canal Street, Chicago, IL 60616
Tiaga Pipe & Supply Company, 2450 Wheatshaf Lane, Philadelphia, PA 19137

PLASTICS—Marine Applications

Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231

PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines

Alco Power Inc., 100 Orchard St., Auburn, N.Y. 13021
Alstom-Atlantique, 2 quai de Seine, 93203 Saint-Denis, France
Armo Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45043
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081
Burmeister & Wain Alpha Diesel AS, DK-1400 Copenhagen K, Denmark
Burmeister & Wain Diesel, Inc., 50 Broadway, New York, NY 10004
Caterpillar Tractor Company, Engine Division, Peoria, IL 61629
Centrica, Inc., 100 Fairway Court, Northvale, NJ 07647
Colt Industries' Fairbanks Morse Engine Division, Beloit, Wisc. 53511
Combustion Engineering, Inc., Windsor, Connecticut 05095
Electro-Motive Division, General Motors Corp., LaGrange, Ill. 60525
General Electric Co., Diesel Power Products, 2901 E. Lake Rd., Erie, PA 16531
Kawasaki Heavy Industries, Ltd., 2-4-1 Hamamtsu-cho, Minato-ku, Tokyo, Japan
MTU of North America, Inc., 10450 Corporate Drive, Sugar Land, TX 77478
Maritime Industries, Ltd., 6307 Laurel St., Burnaby, B.C. Canada V5B 3B3
Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507
Omnithruster Inc., 15418 Cornet Ave., Santa Fe Springs, CA 90670
Oosterhuis Industries, Inc. (Marine Engineering, Inc.), P.O. Box 30587, New Orleans, LA 70190
P.J. Plishner Marine, 2 Lake Avenue Ext., Danbury, CT 06810
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
Propulsion Systems Inc., 21213 76th Ave., So., Kent, WA 98031
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166
Skinner Engine Company, P.O. Box 1149, Erie, PA 16512
Steamco Corporation, 364 Stowe Avenue, Orange Park, FL 32073
Tacoma Boat Co./Escher Wyss, 1840 Marine View Dr., Tacoma, WA 98422
Transamerica Delaval Inc., Engine & Compressor Div., 550 85th Ave., Oakland, CA 94621
Transamerica Delaval, Inc. Turbine & Compressor Div., P.O. Box 8788, Trenton, N.J. 08650
Turbine Specialties, Inc., P. O. Box 207, West State Street Road, Salina, KS 67401
Voith Schneider of America—U.S. Agent: Eli Sharprut, 347 Evelyn St., Paramis, N.J. 07652

PUMPS—Repairs—Drives

Barco Corporation, 16 Bahama Circle, Tampa, FL 36606
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Transamerica Delaval, IMO Pump Division, P.O. Box 447, Monroe, NC 28110
Warren Pumps, Inc., Bridges Ave., Warren, Mass. 01083

REFRIGERATION—Refrigerant Valves

Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
Port Refrigeration Div., 157 Perry Street, New York, N.Y. 10014

ROPE—Manila—Nylon—Hawsers—Fibers

American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

RUDDER ANGLE INDICATORS

Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
Modular Systems, Division of Warren Pumps Houldaille
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.

SAFETY EQUIPMENT

ACR Electronics, Inc., 3901 North 29th Avenue, Hollywood, FL 33020
Datex, 3770 N.W. So. River Drive, Miami, FL 33142

SANITATION DEVICES—Pollution Control

Argo Marine Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013
Chapman Engineers (Omnipure Division), 6101 Southwest Freeway, Suite 100, Houston, TX 77057
Envirovac (Division of Dometic Inc.), 1260 Turret Drive, Rockford, IL 61111
Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
Marland Environmental Systems, Inc., N. Main Street, Walworth, WI 53184
Microphar, Inc., P.O. Box 490, Willits, CA 95490
Red Fox Industries, P.O. Drawer 640, New Iberia, LA 70560
St. Louis Ship FAST Sewage Systems, 611 East Marceau St., St. Louis, Mo. 63111
Sigma Treatment Systems, 2 Davis Ave., Frazer, PA 19355

SCAFFOLDING EQUIPMENT—Work Platforms

Patent Scaffolding Co., 2125 Center Ave., Fort Lee, N.J. 07024
Trus Joist Corp., P.O. Box 60, Boise, Idaho 83707

SHACKLES

West Footscray Engineering Works P/L, 52 Cross Street, West Footscray, Melbourne, Victoria, 30 12, Australia

SHAFT SEALS, REVOLUTION INDICATOR EQUIPMENT

Bird-Johnson Co., 100 Norfolk St., Walpole, MA 02031
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

SHIPBREAKING—Salvage

The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

SHIPBUILDING STEEL

Armo Steel Corp., 703 Curtis St., Middletown, Ohio 45042
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004

SHIPBUILDING—Repairs, Maintenance, Drydocking

A.D.M. (Amsterdam Drydock Mfg.), Maatschappij bv, P.O. Box 3036, 1003 AA, Amsterdam, Holland
AMT, Inc., 2400 N.W. 39th Avenue, Miami, FL 33142
Asmar Shipyards Co., Astilleros y Maestranzas de la Armada, Prat 856, Piso 14, Casilla 150-V, Valparaiso, Chile, S.A.
Astilleros Espanoles S.A., 17 Padilla, P.O. Box 815, Madrid, Spain
Astilleros Unidos de Veracruz, S.A., San Juan de Ulua S/N, Apdo. Postal 647, Veracruz, Ver., Mexico
Avondale Shipyards, Inc., P.O. Box 52030, New Orleans, La. 70150
Bay Shipbuilding Corporation, 605 North Third Avenue, Sturgeon Bay, WI 54235
Bender Shipbuilding & Repair, P.O. Box 42, Mobile, AL 36601
Bergeron Industries Inc., P.O. Box 38, St. Bernard, La. 70085
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004
Blohm & Voss Company, 55 Morris Avenue, Springfield, NJ 07081
Bludworth Band Shipyards Inc., P.O. Box 5065, Houston, TX 77012
Boeing Marine Systems, P.O. Box 3707, Mail Stop 14-11, Seattle, WA 98124
Cantieri Navali Riuniti, Via Cipro, 11, 16100 Genova, Italy
Carrington Slipways Pty. Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322
Centromar, One World Trade Center, Suite 3557, New York, N.Y. 10048
China Shipbuilding Corp., c/o Allegro Transportation Supply Co., One Penn Plaza, Room 1606, New York, NY 10119
Conrad Industries, P.O. Box 790, Morgan City, La. 70380
Curacao Drydock Co., Inc., P.O. Box 153, Willemstad, Curacao, Netherlands Antilles
Curacao Drydock, 26 Broadway, Suite 741, New York, N.Y. 10004
Delattre-Levivier, Taur Fiat, Cedex 16, 92084 Paris La Defense, France
Dorbyl Ltd., Military Road, 1 Industrial Sites, West Bank, 5201 East London Republic of South Africa
Dravo Steelship Corp., R.4, Box 167, Pine Bluff, Ark. 71602
Equitable Shipyards, Inc., P.O. Box 8001, New Orleans, La. 70122
FAC Corp., Marine & Rail Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208
Galveston Shipbuilding Co., P.O. Drawer 2660, Galveston, TX 77553
HBC Barge, Inc., Grant Building, Pittsburgh, PA 15219
Halifax Industries Ltd., P.O. Box 1477, Halifax, Nova Scotia, Canada, B3K 5H7
Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189
Havre de Grace, Inc., P.O. Box 29266, New Orleans, La. 70189
Hitachi Shipbuilding & Engrs. Co., Ltd., 47 Edojori 1-Chome, Nishi-Ku, Osaka, Japan
Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central Post Office, Kowloon, Hong Kong
Hudson Shipbuilders, Inc., P.O. Box Q, Pascagoula, MS 39567
Jeffboat, Inc., Jeffersonville, Ind. 47130
Levingston Shipbuilding, P.O. Box 968, Orange, TX 77630
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
McDermott Incorporated, 1010 Common Street, New Orleans, LA 70160
MacGregor Land & Sea, Inc., 135 Dermody Street, Cranford, NJ 07016
Mangone Shipbuilding Co., 819 South 80th Street, P.O. Box 5446, Houston, TX 77012
Marine Fabricators, P.O. Box 246, Green Cove Springs, FL 32043
Matton Shipyards Co., Inc., P.O. Box 645, Cohoes, New York 12047
Midland Marine Corporation, One Pennsylvania Plaza, New York, NY 10001
Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681
Mississippi Marine Towboat Corp., P.O. Box 539, Harbor Front Industrial Park, Greenville, MS 38701
Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655
Nashville Bridge Company, P.O. Box 239, Nashville, TN 37202
National Steel & Shipbuilding Corp., San Diego, Calif. 92112
Newark Shipbuilding & Repair, P.O. Box 5426, Houston, TX 77012
Newport News Shipbuilding & Dry Dock Co., 4101 Washington Ave., Newport News, Va. 23607
North American Hydraulics, P.O. Box 278, Brampton, Ontario Canada L6V 2L1
O.A.R.N. (Officine Allestimento-Riprazioni Navi), P.O. Box 1395, Genoa, Italy 16100
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501
Pearlson Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla. 33156
Perth Amboy Dry Dock Co., Perth Amboy, N.J. 08862
Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767
Port Houston Marine, Inc., 7220 J.W. Peavy Drive, Houston, TX 77012
Port of Portland, P.O. Box 3529, Portland, OR 97208
Promet (PTE) Ltd., 27 Pandam Rd., Jurong Industrial Estate, Singapore 22
S.E.B.N., Societa Estercizio Bacini Napoletani, Via Marinella Varco N.6 (80133) Naples, Italy
St. Louis Shipbuilding—Federal Barge, Inc., 611 East Marceau, St. Louis, Mo. 63111

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Thomas Marine Inc., 37 Bransford Street, Patchogue, NY 11772

Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004

Total Transportation Systems Inc., 813 Forest Dr., Newport News, VA 23606

Total Transportation Systems (International) A/S, Bjornegarden, P.O. Box 28, N5201 Oslo, Norway

Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316

Tug Barge Systems, Inc., subsidiary of Ingram Corp., 4100 One Shell Square, New Orleans, La. 70139

Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087

Wiley Manufacturing, a unit of AMCA International Corp., P.O. Box 97, Port Deposit, MD 21904

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Candia Shipping (USA) Inc., One World Trade Center, Suite 1611, New York, NY 10048

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Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928

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Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062

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Francis B. Crocco, Inc., P.O. Box 1411, San Juan, Puerto Rico 00903
Hull & Cargo Surveyors, Inc., 99 John St., New York, NY 10038

TANK CLEANING
Butterworth Systems Inc., 224 Park Ave., P.O. Box 352, Florham Park, N.J. 07932
Environmental Chemicals, Inc., 487 Division Street, Boonton, NJ 07005
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Salwica, Inc., 5 Marine View Plaza, Hoboken, NJ 07030

TANK LEVELING INDICATORS
Transamerica Delaval, Inc., Gems Sensors Division, Cowles Road, Plainville, CT 06052
Vu-Gage System, 150 E. 42nd St. (Room 910), New York, NY 10017
Zesco, Inc., 3131 Brian Park, Suite 1095, Houston, TX 77042

TERMINALS—Oil-Transfer
Caicos Petroleum Services Div., Federal Chicago Corp., 2222 North Elston Avenue, Chicago, IL 60614
Delong Corp., 29 Broadway, New York, N.Y. 10006
Transportation Concepts & Techniques Inc., 1020 West Main Street, Charlottesville, VA 22903

TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.
Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002
Chatin Transportation, Inc., 580 Walnut St., Cincinnati, Ohio 45202
Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202
Henry Gillen's Sons Lighterage, 21 West Main St., Oyster Bay, N.Y. 11771
Great Lakes Towing Company, 1800 Terminal Tower, Cleveland, OH 44113
Gulf Fleet Marine Corporation, Canal Place One, Suite 2400, New Orleans, LA 70130
James Hughes, Inc., 17 Battery Pl., New York, N.Y. 10004
McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
McDonough Marine Service, P.O. Box 26206, New Orleans, La. 70128
Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, N.Y. 10048
Ocean Salvors Company, One World Trade Center, New York, NY 10048
Smit International (Americas) Inc., 17 Battery Place, New York, NY 10034
Suderman & Young Co., Inc., 918 World Trade Bldg., Houston, Texas 77002
Turecamo Coastal & Harbor Towing Corp., One Edgewater St., Clifton, Staten Island, N.Y. 10305

TRAINING SERVICES—Simulator
Ship Analytics, Park Circle, Centerport, NY 11721

VALVES AND FITTINGS
American United Marine, 575 Madison Avenue, New York, NY 10022
Dover Corporation, Norris Division, P.O. Box 1739, Tulsa, OK 74101
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Marland Environmental Systems Inc., N. Main St., Walworth, WI 53184
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Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186
Winkel, Inc., 34655 Mills Road, North Ridgeville, OH 44039

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Halogenic Products Corporation, P.O. Box 27488, Salt Lake City, UT 84127

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Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134
Smith-Berger Manufacturing Corporation, 3236 16th Avenue S.W., Seattle, WA 98134

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Kearfott Marine Products, A Singer Co., 550 South Fulton Avenue, Mt. Vernon, N.Y. 10550

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

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Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004

ZINC
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First Aegis Missile Cruiser Christened At Ingalls Yard

America's First Lady Mrs. Nancy Reagan smashed the traditional bottle of champagne against the bow when the U.S. Navy's newest combat ship was christened recently. The Ticonderoga (shown above), under construction at Ingalls Shipbuilding Division of Litton Industries, is the first ship in a series of guided-missile cruisers that will carry the Aegis weapons system, the most advanced air defense radar and missile system in the world.

Speakers on the program included Secretary of Defense Caspar W. Weinberger; Mississippi Senator John C. Stennis; Mississippi Congressman Trent Lott, House Minority Whip; Secretary of the Navy John F. Lehman Jr.; Chief of Naval Operations Adm. Thomas B. Hayward; Rear Adm. Wayne E. Meyer, Aegis shipbuilding project manager; Fred W. O'Green, president of Litton Industries; Leonard Erb, senior vice president of Litton Industries and president of Ingalls Shipbuilding; Rear Adm. Richard J. Grich, supervisor of shipbuilding, Pascagoula; and Rear Adm. Neal Stevenson, deputy chief of chaplains.

Charles B. Thornton, chairman of the board of Litton Industries, introduced Mrs. Reagan and her maid of honor, Miss Anne Davis of Philadelphia. Miss Davis, Mrs. Reagan's niece, is the 17-year-old daughter of Dr. and Mrs. Richard Davis.

The primary mission of the Ticonderoga class, considered to be the most important nonnuclear shipbuilding program in the U.S. today, will be to protect the Navy's aircraft carrier battle groups from air attack, particularly the hostile threat of cruise missiles. The ship will also add significantly to the battle group's antisubmarine warfare defense, while her superior detection and tracking capabilities will coordinate the defensive efforts of all the other ships and aircraft in the group.



Mrs. Nancy Reagan beams while holding the champagne bottle she smashed against the bow of the Ticonderoga (CG-47), the first in a series of U.S. Navy guided missile cruisers to carry the Aegis weapons system, the world's most advanced air defense system.

Ingalls, the Navy's foremost builder of destroyers, cruisers, and amphibious ships, is building CG-47 at its facilities in Pascagoula, which produce ships using modular construction. This modern shipbuilding method was proven during the past 10 years in the construction of 34 Spruance and Kidd class destroyers and five LHA amphibious assault ships. Ingalls also has the contract to build the second ship in the Ticonderoga class, CG 48, while long-lead planning is underway for the following three ships of the class. CG 47 is scheduled for delivery to the Navy in early 1983.

The Aegis Shipbuilding Project is unique in the Navy in that it brings together under one manager the direction of both the combat system development and the ship construction. Rear Adm. Wayne E. Meyer, who has extensive experience in the field of sur-

face missile systems, is the Naval Sea Systems Command Aegis shipbuilding project manager. Admiral Meyer has been directly involved in the development of the Aegis weapons system for the past 10 years.

The effort is coordinated from Washington, D. C., while hundreds of subcontractors and suppliers throughout the United States participate in the development and construction of the Aegis fleet. Some of the major contractors include General Electric Company, Syracuse, N.Y. and Cincinnati, Ohio, sonar, gas turbine engines, and Aegis fire control directors; Westinghouse Electric Corporation, Sunnyvale, Calif., main reduction gears; Stewart and Stevenson, Houston, ship service generators; Bird-Johnson Company, Walpole, Mass., controllable-pitch propellers; Combustion Engineering, Windsor, Conn., auxiliary boilers; The Raytheon Company, Wayland and Waltham, Mass., fire control system, radar transmitter, radar system; Litton Guidance and Control Systems, Woodland Hills, Calif., ship control system; Hughes Aircraft, Culver City, Calif., combat system consoles; and Sperry-Univac, St. Paul, Minn., combat system computers.

Based on the proven design of the Spruance and Kidd class destroyers, the Ticonderoga class cruisers are capable of carrying their formidable array of weapons and electronic equipment at

high speeds over a long range. They are 563 feet long, have a beam of 55 feet, and will displace approximately 9,200 tons. Powered by four gas turbine jet engines, which develop more than 80,000 horsepower, they are capable of speeds in excess of 30 knots.

The size of the crew required is 15 to 25 percent less than other ships of comparable fighting capability. Automation and advanced technology in the propulsion, armament and electronics systems, and support equipment requiring minimum maintenance, permit a crew numbering 360, including 33 officers and 327 enlisted.

The christening of CG-47 continues the name and heritage of four former Navy ships, commemorating the capture of Fort Ticonderoga from the British during the Revolutionary War. Fort Ticonderoga, located between Lake Champlain and Lake George in New York State, was a strategic British post, rich in artillery and military supplies, when captured by Continental Forces under Ethan Allen May 10, 1775.

The latest ship to carry the name was the aircraft carrier (CV-14), which was commissioned in 1944 and saw significant combat as well as expeditionary action in Taiwan, Laos, Quemoy, and Vietnam. The ship also participated in recovering astronauts from Apollo 16 and 17. CV-14 was de-commissioned in September 1973.



Blount Delivers Commuter Boat To Fire Island Ferries

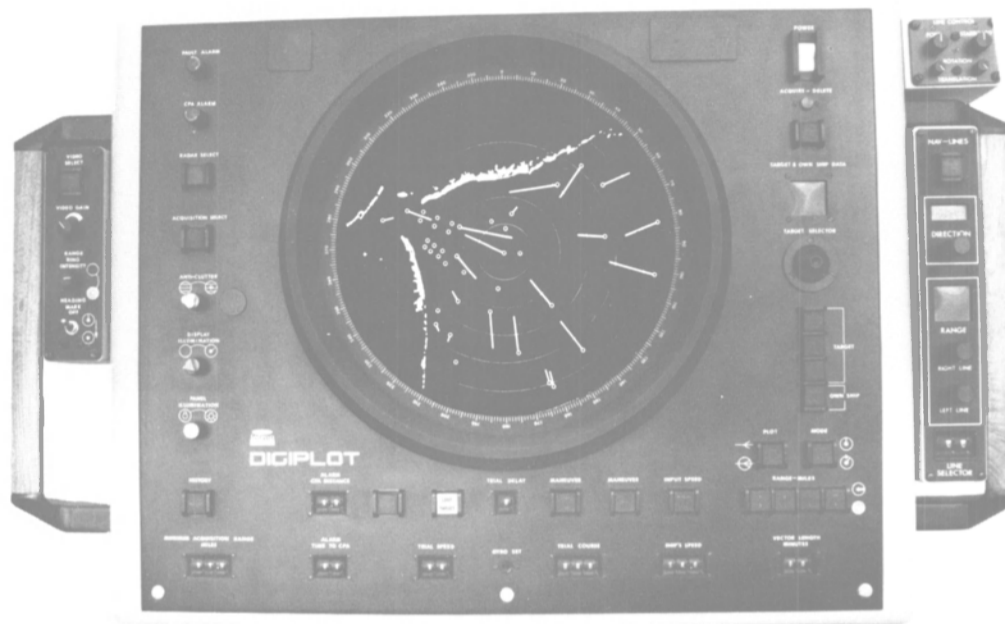
Blount Marine Corporation, Warren, R.I., recently delivered the commuter boat Fireball (shown above) to Fire Island Ferries, Inc. of Bay Shore, N.Y. The 75-foot by 18-foot by 5-foot 2-inch vessel is powered by three turbocharged GM Detroit Diesel 12 V-71 engines, each rated 340 bhp at 1,800 rpm. On trials, a speed of 23.5 knots was attained. The delivery trip was made at an average speed of 18.5 knots. An aluminum superstructure is mounted on a Mayari R50 steel hull. Molded fiberglass benches are fastened to the upper and lower decks.

Blount has specialized in the design and development of fast commuter boats over the past 10 years. They are used principally in the high-traffic Fire Island area.

The two-deck Fireball will carry 300 passengers on the 7½-mile run between Bay Shore and Fire Island on a regular schedule. The ferry company estimates that the vessel will make between 700 and 1,000 trips during the season. The Fireball joins four other Blount-built commuter boats operated by the ferry company.

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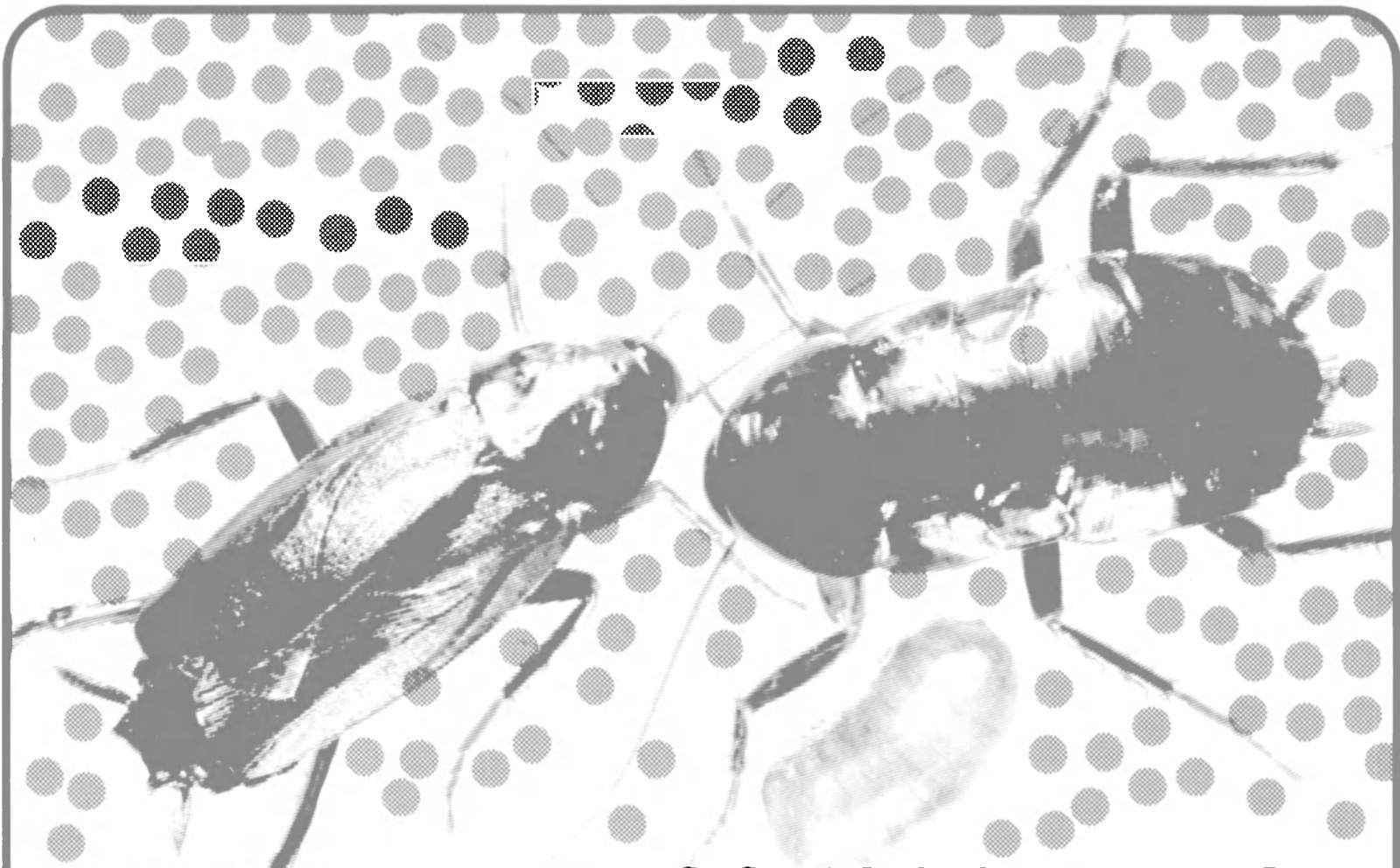
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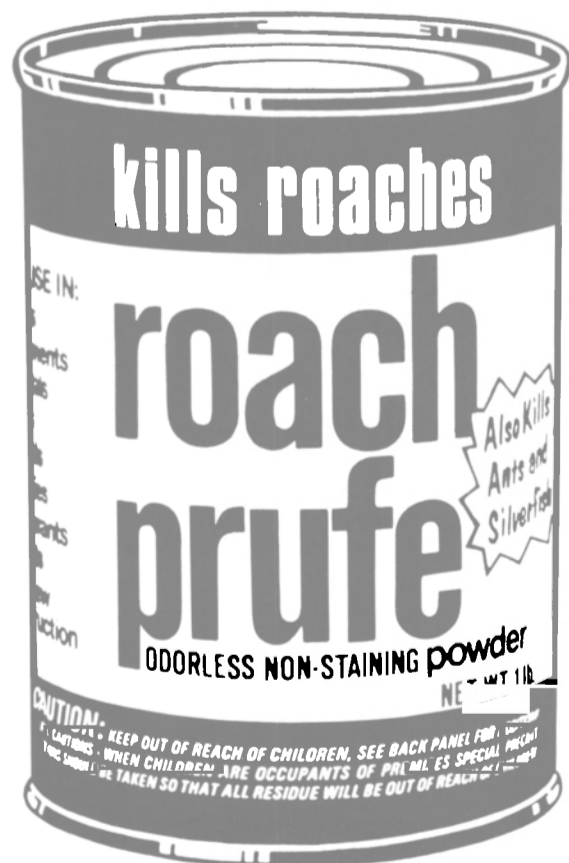
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In a report just released by the UNIVERSITY OF CALIFORNIA and published by the ENTOMOLOGICAL SOCIETY OF AMERICA, eight commercial and test products that included a broad spectrum of insecticides were tested against a product called "Roach Prufe." The tests were conducted in heavily infested apartments and showed at the end of the 8 week test period that with a single application of "Roach Prufe" in each apartment, the roach population was reduced by an average 99.5%. By comparison, with the worst results were the two most widely used insecticides for roach control, "Dursban" and "Diazinon." They showed a 0% (no) reduction at the end of the 8 week tests. Commenting in a letter, the University researchers stated: "Our experience under field conditions has shown that when properly applied, the Roach Prufe formula provides a degree of cockroach control that is usually superior to all other registered commercial or consumer products." Copies of the University test are available upon request. Copper Brite, Inc., 5147 W. Jefferson Blvd., Los Angeles, CA 90016 (213) 933-9331.



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