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THE CHINA CONNECTION
European finance has secured a major interest in a series of new, standard-design cargo vessels being built in China.
— by Carol Fullford & Andy Smith

CAD/CAM + Picking up speed
As owners demand higher speeds from conventional-type ships, CAD/CAM solutions are being used to ensure vessel stability, safety and cost-effectiveness.

CRUISE INDUSTRY ANNUAL
The emergence of new tonnage has forced cruise lines to aggressively pursue higher capacity rates. Associate Editor Bridget Murphy spoke to top industry executives to get an insider's analysis of the market.

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14 New ferry design to feature state-of-the-art propulsors.
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COMING IN AUGUST...
LPS-1 Fy's contract award on the last, new U.S. Navy project until the end of the century is expected in early autumn. MR/EN will review the bidding teams and provide an updated analysis of this high-profile project.
Gulf Coast Review: Business is booming in the Gulf. MR/EN will analyze the recent trend, and help forecast the near and long-term prospects.

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More than a ship...a total system
Atlantic Marine And Alabama Shipyard Team Up For Offshore Conversion

Atlantic Marine, Inc. and Alabama Shipyard, Inc. of Mobile, Ala., will join forces to perform the major conversion of Diamond Offshore's 528-ft. (164.5 m) drillship Ocean Clipper. Diamond Offshore, headquartered in Houston, has been involved in the offshore drilling industry for more than 25 years. The drillship will be converted from a conventional mooring to a dynamically positioned deepwater drill rig capable of drilling in ultra-deep water.

Ocean Clipper will be performing all substructure renewals, cellar deck modifications, and adding an extra Affordable Dampers. It will also be installing four thrusters and launching systems for extra propulsion. Atlantic Marine, Inc. will be performing major machinery modifications, including segregation of the engine room into two separate watertight compartments and installation of new SCR drives. The drill ship will also undergo routine drydocking repairs and services while on Atlantic Marine's drydock in Alabama.

The vessel will be classed to ABS standards, and will be at Atlantic Marine for approximately eight months. Atlantic Marine, Inc. and Alabama Shipyard, Inc. are wholly owned subsidiaries of Atlantic Marine Holding Company of Jacksonville, Fla.

For more information on Atlantic Marine
Circle 54 on Reader Service Card

For more information on Alabama Shipyard
Circle 55 on Reader Service Card
Marlim Field, offshore Brazil. These are twelve outstanding ships of the year, as selected by American owners. The first two vessels were handed over ahead of schedule, currently featuring in the North Sea asset for Bluewater. Three of the four seiners are even longer than the biggest tuna seiner ever, which was formerly active in the Far East market. When Fife and Fergus have come to the end of their field lives, Bluewater will have a spotter planes, radar, speed and associated firefighting equipment installation. Bluewater will therefore offer a 35% take-up in freight," Stena's manager, is referring to increase in speed. The 22,000 kW available to it there in 15.5 m waves and 22 knots, thrusters enables each vessel (0.7 m/sec is the current pad and associated firefighting equipment installation). The "Uisge Gorm" looks set to prove itself a valuable asset in the Far East operation. This spotting-mix seems to be more economical than chartered spotter planes, being built at Barreras yard chartered spotter planes, having having the most midbody section, weighing some 1,000 tonnes. The bow thruster was modified to increase the possibility of 16. The length of this DFDS bridge operation. Facts contributing to efficiency with a crew of 16. The new vessels will be able to operate at 22 knots, compared with the current speed of about 16 knots in the four ro-pax vessels to be built at the Puerto Real yard. As well as capacity and passengers and equipment installation. Watch this space. It tells you how shipowners can benefit from our profit policy. But follow this series because we have more to show for your profit. (Nr. 4 of a series)
Before you hang a computer on a process, you better make sure it's the right process. If it is a bad process, the computer will help you get the wrong answers quicker," said Capt. Maurice Gauthier, LPD-17 program manager, U.S. Navy, when he was in New York recently.

His message, in context, was part of an overall description of how his team has had to change its approach to the processes involved in procuring a U.S. Navy ship in today's tight economic times. Considered in a broader context, the statement could be construed as a mandate for designing, building and owning ships beyond the year 2000.

Without belittling the importance of international accords, it seems that disproportionate attention is often paid to the unpredictable, oft-changing political side of the maritime industry, when a focus on productive building practices and the formulation of long-range business plans would perhaps produce higher dividends.

At press time, the fate of the OECD agreement was still in question, as the agreement had been amended by the U.S. Congress to extend the terms of the popular Title XI program beyond the negotiated deadline. International reaction, to put it mildly, has been harsh.

All news this month, however, is not dour. Our Cruise Industry Annual shows how several U.S.-based cruise ship operators can be considered the template for 'doing it right.' Associate Editor Bridget Murphy took a whirlwind, three-day trip through South Florida to visit some of the most influential cruise ship executives in the world. Her report, complete with insights from Royal Caribbean's Richard Fain, Disney's Art Rodney and Carnival's Maurice Zarmati and Vicki Freed, starts on page 40.
More muscle

No hybrid paraphernalia, but solid innovation: ABB Turbo Systems proudly proclaims the arrival of technology from the cutting edge - the sharp new TPS turbocharger. The TPS features a new energetic design of internal plain bearings, that have proved their mettle in previous models. High power is available over the entire load range. High pressure ratios serve to meet even higher bmep ratings. And high efficiency ensures that when the power soars, fuel consumption doesn't play chaperone. So your diesel can flex its biceps without kicking your operating economy in the solar plexus.

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Washington State Ferry Awards Propulsion Contract To Siemens

The Washington State Ferry (WSF) system recently awarded Siemens Energy and Automation, Inc. contract for propulsion control system replacement on three steel electric class ferries. The 192-foot, 2,312-ton vessels are part of the largest ferry fleet in the U.S., which consists of 22 auto ferries and three passenger-only vessels. The ferry system serves 20 terminals in Puget Sound, Wash., and Oregon, B.C.

The three ships were built in 1927, and completely rebuilt for WSF between 1985 and 1987. With nine years of propulsion control system failure problems on record, the U.S. Coast Guard (USCG) recently required that the company choose between a permanent solution or the removal of the system from service.

Problems have not only rendered ships dead in the water, but have also caused damage to docks, as the ships have lost control at critical moments. Many incidents demonstrated removing vessels from service for the repair of the propulsion control system settings varied with each of the three boats and were said to be problematic.

Additionally, it was discovered that the USCG required that the new propulsion control system settings varied with each of the three boats, and the new system was required to be self-monitoring. The new digital product from Siemens is self-monitoring and built-in self-diagnostic capabilities.

New Technology Needed

The obsolete analog system on the three WSF ferries has been problem-plagued since its installation. Replacement parts had to be custom-made, and costly control systems for the boats are limited to the same settings for the entire service. The new digital product from Siemens offers the ability to interpret trouble signals and compress failures, and provide that information to the operator. Additionally, it uses open-stock parts, which are readily available from the manufacturer and third-party suppliers. The project requires removal and replacement of the propulsion controls and the electric propulsion drives. The new solid state motor drives will be built at the Siemens Maritime Drive Division in Algona, Ga. The included on-board monitoring system and switchboard control system will be designed and built by Siemens Marine Systems in Montreal, Quebec. The alarm and monitoring system is

By Kathleen Gleaves, contributing editor

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nearly identical to the system recently installed on the MV Klahowya, another WSF vessel.

Crew training was an important component in the bid evaluation. Siemens will provide three weeks of classroom training for each crew, as well as two months of onboard training on the WSF system. Crew training work will begin after the final installation of the WSF system on the MV Quinault first on the worklist. The 152-car, 800-passenger vessel will make voyage through the Bering Strait, Chukotka Luka to Klahowya, another WSF vessel. The vessel will take approximately six months to complete. M/V Ritchie and MV Quinault will follow. To ensure a smooth refit, Siemens is setting up an on-site office near the Lake Union facility. Project Manager Martin Godin, Siemens Marine in Seattle, Wash. Siemens is the propulsion system provider for these ships as well.

Exxon Finalizes Agreement in $15 Billion Project

Project expected to produce 2.5 billion barrels of crude oil, 15 trillion cubic feet of gas, equal to a total of 2.5 billion oil equivalents barrels, in three offshore fields, Chayvo, Odoptu and Arkutun-Dagi. The appraisal program includes drilling, coring and testing additional wells, as well as conducting additional 3D seismic surveys. The multinational Sakhalin I Project Consortium includes the Russian companies, Rosneft, Sakhalinmorneftegaz-Sakhalin Oil, Sakhalinmorneftegaz Group, Sakhalinmorneftegaz-Shell, the Japanese company Sakhalin Oil Development Co., Ltd., and Exxon Neftegas Limited, an affiliate of Exxon Corporation and operator of the project. Exxon and BORDO each

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have a 30 percent interest, while
Sakhalinmorneftegaz-Shelf and Rosneft-Sakhalin have a 23 and 17 percent interest, respectively.

Potential Development Description
The development of the three fields will involve a combination of large, ice-resistant platforms and subsea templates. Significant onshore facilities, pipelines and project infrastructure will have to be established on the island in order to support the export of oil and gas. Portions of the onshore facilities and pipelines may be a joint industry project serving all offshore Sakhalin fields.

Production from the project will be available to both local and export markets. Russian members of the consortium and the foreign partners will be responsible for marketing their own respective shares of production.

Project Timeline
Feb. 1991 — Exxon and SODECO agreed to jointly pursue Sakhalin offshore tender opportunities.
Nov. 1993 — Russian Federation Government and Sakhalin Oblast grant rights to negotiate for Sakhalin I exploration and development including the Chayvo, Odoptu, and Arkutun-Dagi fields to Exxon and SODECO.
Dec. 1993 — An agreement was signed by the Russian Federation Government, the Sakhalin Oblast, Sakhalinmorneftegaz, and Exxon/SODECO to perform Technical and Economic Calculations (TER) for the evaluation of the development of the Sakhalin I fields.
June 1994 — The TER was submitted for expertise review and approved as the basis for further PSA negotiations.
May 1995 — Rosneft-Sakhalin and Sakhalinmorneftegaz-Shelf joined Exxon and SODECO in a Consortium to develop the Sakhalin I fields through the JOA.
June 1995 — The Sakhalin I PSA was approved by the Russian Federation Government, the Sakhalin Oblast, and the Consortium.
Jan. 1996 — The Russian Federation Government adopted the Law on Production Sharing. Work continues on additional legislative and normative acts that will be required to complete the legal and fiscal framework for PSAs.
June 1996 — Licenses are granted to the Consortium by the Russian Federation Government and the Sakhalin Oblast covering the Sakhalin I fields.

$159 Million Navy Contract Awarded
The U.S. Navy has awarded a $159 million contract to the Lockheed Martin-Raytheon-Northrop Grumman team for the design, development, integration, and testing of the New Attack Submarine (NSSN) command, control, communications and intelligence (C3IS) for sonar, combat control and architecture systems.

As one of the principal subcontractors to Lockheed Martin Federal Shipyard, Bath, Maine Electronics Systems (RES) will receive an initial contract for approximately $50 million dollars to begin design efforts on the program.

Raytheon will be responsible for the combat control subsystem, which coordinates all targeting and torpedo/missile launches, and for the transmit portion of the sonar subsystems.

"This is an important win for our Portsmouth, R.I., operations and helps solidify our role as a key player in designing and producing combat control systems for the Navy," said Walter V. Trainor, vice president and manager of naval programs for RES.

The NSSN is the Navy's next-generation attack submarine and is designed to ensure that the Navy can maintain battlefield dominance of undersea warfare.

The RES work will be performed at its Portsmouth, R.I., operations in Portsmouth, R.I., operations.
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**PROPELLION UPDATE**

**New Generation Of Propulsors Chosen For New Ferries**

Aquamaster-Rouma of Finland has secured an order for eight 3,000-kW Contaz propulsors, to be fitted on a pair of tristernar ferries recently ordered by DSB Rederi A/S in Denmark. The ferries are scheduled for delivery to Aquamaster-Rouma, as it is an important step in establishing its propulsion system as a well-known brand.

The double-ended "drive through" passenger/car and railway ferries are built for service around the clock on the ferry route between Rodby in Denmark and Puttgarden in Germany. The ships will be built for DSB Rederi A/S by Danyard Shipyard at Frederikshavn, Denmark, and are scheduled to be delivered in May and October 1997. The electrically driven propulsors are powered by ABB's Sami Megastar technology.

The maximum service speed of 18.5 knots will provide a 39-minute crossing time. The Contaz propulsors will be fitted at the sides of each end of the ship, making it possible to always be able to provide a second propulsion system. The propulsion system is designed for quick maneuvering and operation in all weather conditions. The normal service speed will be 16.8 knots, providing a crossing time of 44 minutes. The maximum service speed of 18.5 knots will provide a 39-minute crossing time.

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The design is based on contra-rotating propeller technology, which is known for high propeller efficiency, as well as a low noise and vibration level. The Contaz propulsors are designed with a streamlined body form to allow higher speeds than traditional thrusters.

The ferries were delivered at the beginning of the year for a Norwegian platform supply vessel to be supplied by DSOF Management by Brattvag Shipyards next summer. The vessel features a pair of 2,290-kW Contaz units.

**New Medium-Sized Containership**

**Design Nears Completion**

A flexible new containership design, which maximizes payload and stability with only moderate increases in specific resistance/power requirements, is not to be debuted by a U.S. company. Amer Marine Inc. of the Trinity Marine Group, in conjunction with the Advanced Research Projects Agency (ARPA) and the U.S. Department of Defense (DOD), is nearing completion of the design development of the innovative, medium-sized containership. The Trinity Sea Shuttle design incorporates innovative concepts intended to provide more capacity and efficiency throughout its life cycle. "With the increasing requirement for medium-size, high payload containerships to accommodate the medium and long-length containers and inter-modal routes, the Trinity Sea Shuttle, with its unique flexibility in design, modular construction, and shallow draft and cargo capacity, fills the void nicely," said John Dance III, president, Trinity Marine Group.

The Sea Shuttle design measures 412 ft. (125 m) long and has a maximum capacity of 946 TEUs. A "stretch" version measures 450 ft. (140 m) long and has a capacity of 1,234 TEUs. Designed for the international market, the Sea Shuttle is available in several configurations, including various length and beam dimensions, and either flush deck or hatchless versions. The vessel was purposely designed with a high degree of flexibility in the vessel configuration, the vessel accommodation, the vessel propulsion, and the vessel equipment options, which can be tailored to meet the specific needs of the shipowner. The vessel is designed to accommodate the medium and long-length containers and inter-modal routes, the Trinity Sea Shuttle, with its unique flexibility in design, modular construction, and shallow draft and cargo capacity, fills the void nicely.

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For more information on the new containership design,Circle 18 on Reader Service Card

**Stolt Parcel Takes Delivery Of Stolt Innovation From Danyard**

Stolt Parcel, Inc., part of the Stolt-Nielsen SA group, has taken delivery of a new Stolt Innovation. The first in a series of 37 233-kDWT Innovation-class chemical parcel tankers, the Danyard shipyard in Frederikshavn, Denmark, formally commissioned on May 29, the new ship incorporates features that set new standards of environmental protection, safety and operating efficiency. Some of the innovations on the new ship are being built by Danyard, and the shipyard hopes to complete the service of the new ship by the end of 1998. Stolt Parcel is pleased to be able to contribute to the Scotch-Moored de Nobel B, Hamburske, the Hamburgstern, a new 482-kDWT ship for the Hamburgstern class, at the Hamburgstern yard in Leer, Germany. The new ship is a new, state-of-the-art vessel designed to handle hazardous and corrosive cargoes (IMO Type 1). Stolt Innovation is thought to be the first chemical tanker to be built with a built-in propulsion system, which runs on a combination of diesel and gas. Stolt Parcel is pleased to be able to contribute to the Scotch-Moored de Nobel B, Hamburske, the Hamburgstern class, at the Hamburgstern yard in Leer, Germany. The new ship is a new, state-of-the-art vessel designed to handle hazardous and corrosive cargoes (IMO Type 1). Stolt Innovation is thought to be the first chemical tanker to be built with a built-in propulsion system, which runs on a combination of diesel and gas. Stolt Parcel is pleased to be able to contribute to the Scotch-Moored de Nobel B, Hamburske, the Hamburgstern class, at the Hamburgstern yard in Leer, Germany. The new ship is a new, state-of-the-art vessel designed to handle hazardous and corrosive cargoes (IMO Type 1). Stolt Innovation is thought to be the first chemical tanker to be built with a built-in propulsion system, which runs on a combination of diesel and gas. Stolt Parcel is pleased to be able to contribute to the Scotch-Moored de Nobel B, Hamburske, the Hamburgstern class, at the Hamburgstern yard in Leer, Germany. The new ship is a new, state-of-the-art vessel designed to handle hazardous and corrosive cargoes (IMO Type 1). Stolt Innovation is thought to be the first chemical tanker to be built with a built-in propulsion system, which runs on a combination of diesel and gas.
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Land A Satellite Phone For Half The Price.
Raytheon Company announced that it has completed the transaction to purchase certain assets of Standard Radio A/S of Sweden, Wolff, Belfast. The weldment, a central keel section weighing 461 tons, was lowered into position using an 840-ton capacity Goliath crane. The FPSO is a 2-billion international, high technology company located in Manchester, N.H. Wolff, Belfast. The weldment, a central keel section weighing 461 tons, was lowered into position using an 840-ton capacity Goliath crane. The FPSO is a 2-billion international, high technology company located in Manchester, N.H.

The trials were dropped last year following pressure from several member states. After the trials conclude in 1997, the debate over the acceptability of one-officer watch at night will continue until the end of 1997, at which time the test results will be submitted to the IMO for further evaluation.

Keel Laid For World's Largest FPSO

The initial keel section for the world's largest newbuilding Floating Production, Storage and Offloading (FPSO) vessel was laid in the 556 x 93-m building dock at Harland & Wolff's Belfast shipyard. The weldment, a central keel section weighing 461 tons and measuring 30.5 x 17 x 6.5 m, was lowered into position using an 840-ton capacity Goliath crane. The FPSO is rated for a water depth of 1,200 m, for use at the Snorre II field in the North Sea, with a capacity of 300,000 barrels of oil per day.

One-Man Bridge

Radio Holland Completes Innovative Installations

Innovative Installations

Radio Holland recently completed several innovative installations. One involved an integrated voyage event recording package, a system which integrates electronic charting systems and voice data from the bridge. All pertinent navigational data, such as course over ground, GPS position, speed, heading, course, wind speed and direction, water depth, radar targets and data, cross track error, rate of turn, data and time (UTC) and present Eat of the chart in use, are fed to the computer. One recorder can handle up to 94 input channels, with up to 91 days of history.

Other recent jobs for the supplier include the installation of computer-made anti-hijacking equipment (for cruise liners) and thermal imaging cameras for non-cruise line marine applications.

Maritime Reporter/Engineering News

For more information from Radio Holland Circle 143 on Reader Service Card
USS Inchon Redesignated For New Mine Warfare Mission

USS Inchon has returned to Fleet duty following a 15-month conversion at Ingalls Shipbuilding in Pascagoula, Miss.

Helicopter carrier USS Inchon was redesignated for a new mission as a mine countermeasures command, control and support ship on May 24 at Ingalls Shipbuilding, a division of Litton Industries. The ship, which has been at Ingalls undergoing a significant conversion and overhaul for the past 15 months, sailed from the shipyard on May 29. The 602-ft. (183.4-m), 18,340-ton ship has a crew of 430, and will be homeported in Ingleside, Texas.

"What has happened in this ship's conversion represents a revolutionary change," said Rear Adm. John D. Pearson, USN, commander, Mine Warfare Command. "I want to acknowledge the efforts of 'Team Inchon' — Ingalls Shipbuilding, Supervisor of Shipbuilding personnel and the crew of USS Inchon, and emphasize the fantastic work of the hull, mechanical and electrical elements of this shipyard.

Ingalls built USS Inchon, and originally delivered the ship in 1970.

For more information on Ingalls

Kvaerner Delivers Additional LNG Carrier To UAE

The delivery of Kvaerner Masa-Yards second 135,000-sq.-m. LNG carrier Mraweh, ordered by Abu Dhabi National Oil Company (ADNOC) of the United Arab Emirates (UAE), took place on June 3. The flag ceremony was held onboard the vessel, which is stationed at the southern coast of England, after extensive gas trials in the area.

Mraweh is one of the largest LNG carriers in the world, and will be followed by two sister-ships in 1997. The order for four LNG carriers was placed in April 1993. The first vessel, Mubaraz, was delivered in January, and has since been successfully engaged in transporting LNG from the Das Island of Abu Dhabi Gas Liquification Company to Tokyo Electric Power Company (TEPCO) in Japan.

The LNG cargo containment system is based on the Kvaerner Moss-type spherical aluminum tank concept. These LNG carriers are the first 135,000-sq.-m. capacity vessels with only four spherical cargo tanks. The LNG tank manufacturing method was developed at the Turku New Shipyard.

The new LNG carrier has a deadweight of 116,703 tons, a service speed of 19.5 knots and an oil cargo capacity of 135,000 cu. m. It is propelled by two diesel engines with a total output of 54,000 horsepower and is equipped with a steam turbine.

Mraweh main particulars:

- Length o.a: 951.4 ft. (290 m)
- Breadth: 157.8 ft. (48.1 m)
- Design draft: 37 ft. (11.3 m)
- Gross tonnage: 116,703
- Service speed: 19.5 knots
- Arctic Class: Yes

For more information on Kvaerner Masa-Yards

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For complete information on Kvaerner Masa-Yards

Circle 53 on Reader Service Card

Circle 251 on Reader Service Card

Circle 280 on Reader Service Card

Circle 228 on Reader Service Card

Circle 51 on Reader Service Card

Circle 1 on Reader Service Card
ABS Launches Products To Advance Ship Safety

American Bureau of Shipping (ABS) has introduced SafeHull '96 and SafeNet, announced Chairman Frank J. Iarossi, praised Chairman Frank J. Iarossi, praised Chairman Frank J. Iarossi.

"The SafeHull '96 initiative extends this technology from tankers and bulk carriers to containerships. It also introduces more flexible and user-friendly features including Windows PC and workstation operating environments. The capability to perform dynamic analyses and to incorporate such analyses into a real-time, first principles basis, in a way not previously available, to the marine industry," said Mr. Iarossi. "Having developed its use to identify critical structural areas during the design and evaluation of new ship structures, the application of SafeHull has armed ABS with a unique capability to directly access all classification-related technical and survey information for both the machinery and hull structure on ABS vessels. ABS and the owner will be able to work together, to continually assess the integrity of their vessels to ensure they are maintained in top operational condition. In addition, SafeHull and SafeNet have been developed in response to needs expressed by the marine industry.

For more information on ABS
Circle 116 on Reader Service Card

P&O Orders Two Containerships From Japanese Shipyards

P&O Containers has signed an agreement with Japanese shipyard IHI to build what will reportedly be two of the world's largest containerships. The new ships will each have a capacity of 16,674 TEUs, greater than any containership currently in service, and will be driven by one of the most powerful marine diesel engines ever built.

When the vessels are delivered in 1999, it is expected that they will join the Grand Alliance operation between Europe and the Far East. "The investment in ships of this size reflects not only the continued growth of world trade and containerized cargo in particular, but also the benefits of scale coming from our membership of the Grand Alliance," said P&O Managing Director Robert Woods. "By utilizing ships with this capacity, we are able to manage our tonnage effectively, and together with our partners in the Grand Alliance, provide a service that will meet the demands of our customers in the future."

Astilleros Espanoles Signs Contract For Two Containerships

Astilleros Espanoles has secured a contract for a series of two containerships which will be built at its Barreras yard in Vigo. The vessels have been placed by Naviera del Odiel, a Spanish owner operating in the refrigerated trade, as a leader in cargo transport. Total capacity of the ships will be 1,950 TEU -- 200 of which will be refrigerated. A flexible design has been adopted, therefore containers of different lengths and heights can be accommodated. The vessels will be operated between mainland Spain and the Canary Islands, as well as around the Mediterranean Sea.

For more information on Astilleros Espanoles
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New KVH TracVision Brings DIRECTV® & USSB® to Your Boat!

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On May 10, 1996, peers, friends and associates from all areas of the seafood industry and all over the world, gathered at Sahlman Seafoods, Inc.'s office in Tampa, Florida, to pay tribute to its CEO, Jack Sahlman. The newest vessel to join the fleet, the "Capt. Jack '96," was christened by her namesake, and a reception was held where food, drink and good company were enjoyed by all. The event was sponsored by Sahlman's fleet builder Steiner Shipyard, Inc., and other major vendors.
European money backs standard cargo carrier concept

European finance has secured a major interest in a series of new, standard-design cargo vessels being built by the Dalian Shipyard in China. The first, Clipper Fantasy, has now been delivered to her owners and chartered to Denmark's East Asiatic Company. Scandinavian and German companies, along with other European investors in joint ventures, constitute the lead investors in this and the nine additional confirmed orders (including recently completed Clipper Frontier and Ilse Oldendorf orders). The 28,000-dwt Fantasy class, multi-purpose cargo vessel, is the first design from GTR Campbell, named after the late George Campbell, who designed the Freedom, Fortune and Friendship classes of the 1960s and 70s. These classes of ships were produced in substantial numbers and represent perhaps the most successful series of standard designs since World War II.

The Fantasy class has been developed jointly by GTR Campbell with Algoship Designers Ltd. of Nassau, and the Dalian Ship Design and Research Institute. A primary consideration was to produce handy-sized, multi-purpose cargo vessels, capable of entering secondary ports where water is limited and cargo handling facilities are basic, or even non-existent. In the past, this requirement was met by the improving container carrying ability. It is already clear from the advanced order situation that there is significant demand in the marketplace for such a class of vessel.

Design Specifics

The Fantasy is an open, multi-purpose geared dry cargo container and self trimming dry bulk carrier. It measures 594 ft. (181 m) long with a beam of 85 ft. (26 m). Construction is to American Bureau of Shipping's (ABS) standards, classed A1 (E) Multi-purpose Dry Cargo/Container Carrier, Strengthened for heavy cargoes. In addition, Fantasy meets all national and international maritime regulations as applicable to a vessel of its size and type.

A detailed analysis of the hull structure has been carried out using finite element techniques as part of the ABS IDEA (Dynamic Loading Approach) program. The ABS SafeHull program has also been used as part of the structural analysis. In form, the hull is conventional, with five holds forward of the bridge/machinery block. It incorporates a bulbous bow and openwater transom stern. Construction includes a double hull to comply with future requirements for containment of heavy cargoes in limited waters. To diminish the carriage of ballast water in the cargo holds, ballast capacity of 10,900-cu.-m. is provided. In addition, the double hull ensures the holds are as rectangular as required for the carriage of containers. The cargo hold capacity are 36,311 and 35,452-cu.-m., respectively.

One unusual feature of the hull is the fitting of a wake equalizing duct, designed and patented by the Shanghai Ship Research Institute for reducing propeller cavitation and hence energy. Testing of the device, in conjunction with a stern bulb, indicated energy savings of four to six percent. In practice, trials of Clipper Fantasy, which does not incorporate a stern bulb, returned energy savings of a similar level. The hatch covers are closed by flat-topped, double-skinned, hydraulically operated folding steel hatch covers, designed by the Marine Equipment Division of Nakata Mac Corp. For cargo handling, five
Kvaerner Masa-Yards Inc. - the experienced builder of successful ships

Kvaerner Masa-Yards is a Finnish shipbuilding company with long traditions of producing successful high-quality ships. The company, employing 4,900 people, is part of the international industrial group Kvaerner a.s.

Kvaerner Masa-Yards build cruise liners and passenger ferries, gas carriers, offshore vessels, cable ships, research vessels, offshore vessels, designs and crane ships.

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ment plant; flowmeter systems from Mar-In Controls B.V.; and a Sunflame incinerator model OSV-30SA unit rated at 300,000 kCal/h. The hydraulic steering gear fitted is from Porsgrunn Steering Gear AS, produced in Norway. The specific model fitted is designated 425-80/2 and has an effective torque of 780 kNm at 60 bars working pressure.

Clipper Fantasy is outfitted with all requisite safety, navigation and communications equipment including INMARSAT B and C, and a full GMDSS outfit. The bridge is configured for One-Man Bridge Operation (OMBO) with a large console across the front containing the main navigation and machinery control instruments. The radar outfit has been supplied by Kelvin Hughes, and comprises a pair of Nucleus 2 series 6000 units — one an ARPA display and the other a true motion display. Both have full color displays and, for ease of use, are operated by a single trackball and three buttons. Additional navigation and communications systems include: a JRC model JLR-6000MKz GPS navigation receiver; Sperry magnetic compass, gyrocompass and adaptive digital gyropilot; JRC MF/HF radio; an INMARSAT C station; and two VHF radio telephones.

ABB supplied the INMARSAT B station, fax and telex terminals, and OKI supplied the vessel’s internal telephone system. The fourth Fantasy class vessel is scheduled to be delivered in German yards this October. The remainder of the delivery program currently runs through to April 1998, when the tenth vessel should be ready. Negotiations are reported to be underway.

EUROPEAN UPDATE

Recent activities on Scotland’s River Clyde, once the heart of a prosperous U.K. shipbuilding industry, brought back memories of former glory when two new platform supply vessels were launched within a few days of each other. Stirling Forth was first to enter the water, launched from the famous Govan yard, which is now part of the Kvaerner Group. This was followed by the launch of Stirling Clyde from the Port Glasgow yard of Ferguson Shipbuilders, just a few miles downriver. The vessels were designed by Norwegian naval architects Vik and Sandvik in consultation with owner Stirling Shipping, and are identical 272 x 62.3-ft. (82.9 x 19-m) vessels valued at $38 million. Following a scheduled July delivery, both ships will begin a five-year charter with Shell U.K. Exploration and Production, the operator for both Shell and Esso in the U.K. sector of the North Sea.

Although the ships are fairly conventional for supply vessels in terms of layout and configuration, the twin vessels will, according to the owner, be among the largest and most sophisticated to operate in the region. The dynamic positioning system and a comprehensive array of thrusters from Brunvoll is designed to make the vessels easy to maneuver and handle. Three 746-kW tunnel stern thrusters, one at the bow and two at the stern, and an 895-kW azimuthing thruster are provided, as well as a Simrad Albatross plays.
ADP700 dynamic positioning system, complete with joystick control. This system will interface to the ship's tanks and DGPS reference system.

The engines — a pair of 4,400-kW Wartsila 6R32E diesels — are located well forward under the aft superstructure bulkhead, with long shafts running to the Wartsila gearboxes and Leroy Somer shaft alternators situated eight aft. These engines turn 11.2-ft. (3.4-m) diameter controllable pitch propellers, giving a service speed of 12 knots and a maximum of about 14 knots. Two Cummins diesel driven alternators are provided, and the accompanying thruster at the bow has its own dedicated Cummins driven alternator. The forward port quarter of the engine room contains a workshop, and an engine control room with an L-shaped console is centrally located at the rear.

Below the well deck, which measures 185 x 52.5-ft. (56.4 x 16-m), are the mud, brine, drill water, freshwater and fuel oil tanks, together with 14,000-cu.-ft. of dry bulk capacity in eight vertical tanks. Deck machinery, mainly supplied by Ulstein, includes two deepwater winches, two anchor handling winches, a deck crane (3 tons at 12 m) and two tugger winches. Safety equipment includes four Jason's Cradles, a 9-man MOB boat and davit-launched life rafts for 24 persons.

Accommodation for the 12 officers and crew is of a particularly high standard — in single cabins with private toilet and shower facilities spread over three decks. Up to 12 "guests" can also be accommodated in three large cabins situated on the main deck. Other facilities include a hospital, large day room with sufficient seating for the entire crew, mess, gymnasium and a separate crew mess. The addition of these two new sisterships will bring Stirling Shipping's offshore fleet to a total of 14 vessels, consolidating the company's position as the largest operator in the U.K. sector.

New facility broadens Dutch yard's scope

The decision by Royal Schelde, the Netherlands' internationally renowned, 120-year old shipyard, to build a brand new shipbuilding facility at Vlissingen paid off with its recent delivery of Captain George, a 251 x 71.4-ft. (76.6 x 21.8-m) catamaran fast ferry. (Vessels with a beam greater than 68.89 ft (21 m) cannot be built at Schelde Shipbuilding's main yard in the center of Vlissingen.) The primary catalyst in deciding to build a new shipyard was an order from the Royal Netherlands Navy to build a 82-ft. (25-m) wide Amphibious Transport Ship (ATS). Contrary to Mr. E.M.M. Bilterijst, Schelde's Marketing and Sales manager was quoted as saying, "The decrease in contracts to the Dutch Navy and government has forced us to search for private contracts to keep our yards busy."

Captain George, the first ship to be built at the new Vlissingen facility, was delivered to Piraeus-based owner, Greek Catamaran Lines Maritime Company.

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be expected from the Navy as we decide to aim our efforts at other market segments.

However, the company carried out an analysis of merchant vessels built throughout the world from 1989 to 1994 and found that 68 percent of the vessels were designed for 450 people or less, with a maximum length of 348 ft. (106 m). The building of the new construction site became imperative when the company realized that they were precluded from tendering for more than two-thirds of the vessels required. Built in one of the two huge construction halls at Schelle-East, the new facility has now been named. Captain George is an aluminum catamaran with four levels above its twin hulls. The vessel has a sleek, streamlined appearance which belies its capacity of 132 cars and 850 passengers. The vessel is divided into four watertight, two-per-bull, each driven by a 0.750-kW Caterpillar 3404 DITA diesel engine. This configuration gives the vessel a fully loaded service speed in excess of 34 knots at design condition. Fully laden and with 41 tons of fuel, the endurance at service speed is approximately 2000 nm. The main passenger deck is located immediately above the two car decks and is divided into two tourist class lounges with a total of 480 seats, and a club class lounge accommodating 100. An additional 40 first-class passengers can be seated on an atrium on the aft of the bridge.

Captain George has been delivered to Peruna-based owners Great Carman Lines Maritime Company, and will be in regular service linking Italy and Greece in time for the peak summer traffic.
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Circle 286 on Reader Service Card
Oceaneering Completes FPSO Conversion

A 268,000-dwt crude oil tanker was converted to a floating production, storage and offloading system (FPSO), named Zafiro Producer, by Oceaneering International. Oceaneering purchased the vessel from MOL, and MOL will lease the completed FPSO from Oceaneering for processing up to 80,000 barrels of crude oil per day at the Zafiro field, which is offshore Bioko Island, Equatorial Guinea.

The vessel — which will have a storage capacity of 1.2 million barrels of crude oil — was originally the M/T Swift, built in Japan by Mitsui at the Tamano shipyard in 1973 for a Japanese owner. Following its purchase by Oceaneering, the vessel was taken to PMB/Bechtel Pelican Island Facility (the former Todd Shipyard) in Galveston, Texas, where the repairs and principal conversion work was performed offsite. The vessel was to have sailed no later than June 21 for Europe, where it was to be dry-docked at a Portuguese shipyard for shell plate repairs, hull coating and final ABS-class inspection. The schedule calls for the vessel to move onto West Africa from Portugal, and it is to be installed at the Zafiro field by mid-August.

Some highlights of the conversion include:

• All 268,000-dwt, Zafiro Producer will be the first FPSO to be converted to a storage and offloading system, and an FPSO when it enters production service.
• The 80,000-bpd, 40-mmscfd production process system is one of the largest yet installed aboard an FPSO, and
• The vessel will be installed in a water depth of 600 ft. (182.8 m), reportedly the greatest depth for a spread-moored FPSO, and the greatest depth for a floating production system offshore West Africa.

For more information on Oceaneering
Circle 57 on Reader Service Card

MES Delivers Bulk Carrier Forward 3

The 46,678-dwt bulk carrier Forward 3 (Hull No. 1426), built at the Tamano Works of Mitsui Engineering & Shipbuilding Co., Ltd. (MES), has been completed and delivered to its owner Mi-Das Line SA. Forward 3 is a medium-sized bulk carrier with five cargo holds and four stows all together.

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Galveston, Texas, where the repairs and principal conversion work was performed offshore. The vessel was to have sailed no later than June 21 for Europe, where it was to be dry-docked at a Portuguese shipyard for shell plate repairs, hull coating and final ABS-class inspection. The schedule calls for the vessel to move onto West Africa from Portugal, and it is to be installed at the Zafiro field by mid-August.

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Continuous Barge Unloader Offered
By Timstar

Timstar's bucket chain technology for continuous ship unloaders is now available for barge unloaders. The Timstar Barge Unloader Model SB-750 reportedly allows inexpensive equipment that is small in size.

The Timstar Barge Unloader Model SB-750 reportedly handles 750 tons per hour in free-flowing, abrasive cargo of any density. It is available in either a fixed or gantry design and mounts on pylons or floating barges. Each Timstar unit is custom-built to meet customer needs.

The Timstar Barge Unloader reportedly offers flexibility in capacity and mobility, and additional units may be added to increase capacity. Timstar also offers self-unloaders, ocean-going barge unloaders and Panamax ship unloaders.

Bay Fabrication Renovates Ferry
Grand Isle

Bay Fabrication, Inc. of Panama City, Fla., has delivered the double-ended ferry Grand Isle to Lake Champlain Transportation Co. Inc. of Burlington, Vt., after an extensive refurbishment program which included the addition of a 38.6 ft. (11.7 m) midbody section.

Grand Isle was built in 1953 at Tampa Marine Co. with overall dimensions of 137.6 x 43 x 11.6 ft. (42 x 13.1 x 3.5 m), and has operated throughout the years on Lake Champlain, operating year-round, or at least until the ice became too thick for operation.

Due partly to Grand Isle's age and Lake Champlain's Transportation Co.'s purchase of three new and larger vessels over the past few years, the operating time of Grand Isle has been substantially reduced. The owners had to make a decision whether to sell or refurbish the vessel to modern standards. After opting for revamping, Bay Fabrication was chosen for the work. The 176 x 43 x 11.6 ft. (53.6 x 13.1 x 3.5 m) modified Grand Isle can now accommodate five semi-truck units in addition to several smaller trucks, or 40 automobiles with no trucks. Passenger capacity has been raised from 130 to 200.

Elf Floating Production Unit Ready To Leave For Nkossa Field

French petroleum company Elf Aquitaine's 721-ft. (219.7-m) floating production unit left the port of Fos-sur-Mer on the Mediterranean coast of France on March 16 for a voyage of approximately six weeks, to its Nkossa field. Located 37 miles off the coast of Congo, West Africa, Nkossa is reportedly the deepest offshore development yet undertaken in the Gulf of Guinea in West Africa, the largest operated by Elf Congo, and one of the most important carried out by Elf Aquitaine.

The pre-stressed concrete barge is reportedly

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The 1996 International Maritime Exposition
New York City
The Marriott Marquis

Wednesday, October 2: Noon to 5 pm
Thursday, October 3: 10 am to 5 pm
Friday, October 4: 10 am to 4 pm

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July, 1996

Circle 244 on Reader Service Card
The Nkossa field was discovered in 1984. Production of a high quality oil under the sea floor in a water depth which varies from 500 to 1,000 ft. (152.4 to 304.8 m).

The modules are used for accommodation and control center, utilities, electricity generation, compression of gas for re-injection, crude oil treatment and liquid petroleum gas production. The modules are commissioned by Elf Congo as the exploration permit called Haute Mer in 1984.

Alfa Level Control Systems Receive Certification

The control systems SattCon OP45, SattCon OP60 and SattCon 200 have been certified by Det Norske Veritas in compliance with the rules of marine applications. SattCon 200 is a programmable logical controller (PLC) for medium to large applications — from 300 inputs and outputs (I/O) to more than 2,000 I/O. Since the design has a modular architecture, the systems which use a remotely distributed I/O architecture, it is suitable for marine applications. SattCon OP2 is also a modular PLC, but it is more suitable for smaller applications.

The control systems offer multi-functionality, since they use PID loops, test and alarms handling, supervisory functions and various necessary communication solutions. The operator panel SattCon OP45 is a center which integrates the operator's display and keyboard in one unit. SattCon OP45 is suitable for smaller control tasks, including operator functions in a distributed configuration such as vessel onboard ships. It is a microprocessor-based controller with a CPU which increases its flexibility. The fast remote I/O and integrated terminals also save installation costs. Maintenance is facilitated by I/O fault detection and faulty I/O module detection.

SattCon is built up in flexible modules which use a remotely distributed I/O architecture. Integration I/O architecture, it is suitable for marine applications. SattCon OP2 is also a modular PLC, but it is more suitable for smaller applications.

Both control systems offer multi-functionality, since they use PID loops, test and alarms handling, supervisory functions and various necessary communication solutions. The operator panel SattCon OP45 is a center which integrates the operator's display and keyboard in one unit. SattCon OP45 is suitable for smaller control tasks, including operator functions in a distributed configuration such as vessel onboard ships. It is a microprocessor-based controller with a CPU which increases its flexibility. The fast remote I/O and integrated terminals also save installation costs. Maintenance is facilitated by I/O fault detection and faulty I/O module detection.

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Pool Energy Makes Several Offshore Investments

Pool Energy Services Co. announced letters of intent for two international transactions. It entered into a letter of intent to acquire the 51 percent interest that it does not already own in its Malaysia joint venture, Antah Drilling Sdn. Bhd. Antah Drilling's assets include a state-of-the-art, 2,000-hp platform drilling rig and a platform workover rig. The platform drilling rig is scheduled to commence operations offshore Australia in the third quarter of 1996 for Esso Australia Ltd. under a three-year contract. The platform workover rig is currently working offshore Malaysia for Esso Production Malaysia Inc.

The company has also entered into a letter of intent to acquire a 51 percent interest in a newly formed Argentinian corporation that will own and operate nine land drilling rigs and 11 land workover rigs. The two transactions are subject to, among other things, the negotiation of definitive agreements.

"In addition to the scheduled commencement of operation of a 2,000-hp platform drilling rig in the Gulf of Mexico in the third quarter of this year, the recently announced agreement to acquire the operating assets of Western Oil Well Service Co., and the recently consummated purchase of our partner's interest in Pool Santana Limited, the transactions announced should also enhance the company's results in the future," said Jim Jongebloed, chairman, president and CEO.

Company Initiates Cruise Operation Between California And Mexico

International Basic Resources, Inc.'s subsidiary, Ensenada Cruiseport Village, S.A de C.V., has signed a memorandum of understanding with Powersarda Management Co. N.V. for the commencement of daily cruise ship service between San Diego and Ensenada, Baja California, Mexico.

The company has also entered into a letter of intent to acquire a 51 percent interest in a newly formed Argentinian corporation that will own and operate nine land drilling rigs and 11 land workover rigs. The two transactions are subject to, among other things, the negotiation of definitive agreements.

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Steamers' Charters Latest Containership

Steamers Maritime Holdings Limited has chartered its latest containership in its latest initiative to invest in container feeder ships. The company has an additional eight container vessels under construction for delivery in 1997 and 1998.

The daily cruise service is expected to generate at least 340 port calls per year at Cruiseport Ensenada.

Sailors from all over the world are united by one great passion.

And by one great communications company.
Today's focus in the shipping world is increasingly on fast ships. However, the trend is also towards higher speeds for conventional tonnage - vessels such as oil tankers, bulkers and containerships. While the increase in speed from 20 to 25 knots might not exceed five knots, this has important implications and is a challenge for the ship designer. To ensure stability, safety and performance criteria are met, it is important to identify and solve problems during the design process. Fuel costs, of course, is a very important factor which directly affects the speed of ships, but the focus on fuel cost varies. For example, the general thought in the 1960s and early 1970s was to increase ship speeds, with the consequent higher power demands and higher fuel consumption. This trend was abruptly broken with the oil crisis in 1973, and as a result, speeds were reduced, sometimes drastically, to decrease fuel costs. The next trend to increase speeds started in the late 1980s.

**The Need For Speed**
Towards the end of the 1980s, a change was noted, as several projects were initiated, specifying fast transport. While the projects mainly involved ferries, it was notable that plans called for ships of 1,000 dwt and larger at speeds of 35 knots and above. At the same time, a demand for higher speeds in the RoRo and container-ship segments was discovered, and the typical speed increase raised services speeds to around 25 knots.

**Speed Affects Design**
The development of hull lines is mainly an evolutionary process where the requirements of the cargo and cargo handling are important. The design of the hull lines has to be, in general, completed within a short time frame, and is concerned with the actual ship. In-depth optimizations are rarely made, but rather refinements and extension of existing designs. A speed increase from 20 to 25 knots has implications not only on fuel consumption, but also on vibration and noise levels, sea loads and to some extent on maneuvering properties. This implies that, a pure speed and systematic optimization is needed.

Another area of concern with increasing speeds is that of noise and vibration. With ship speeds increasing, vibration problems have seemed to reappear, despite improved methods to predict vibration and noise. It should also be noted that the common hull shapes with rather flat aftbodies appear to be more susceptible to pressure pulses.

**Design Tools**
In the past, the main tools for the hydrodynamic design of ships were model tests and safer hulls and more

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It is the complete package of design, construction and lifetime ship care procedures. Tried, tested and trusted by VLCC owners, it is the most comprehensive package of safety measures on the market.

Now the advantages of ShipRight have been extended to all new LR-classed bulkers,* with the mandatory application of Structural Design Assessment, Fatigue Design Assessment and Construction Monitoring.
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Find out more by calling Graham Marshall in London on +44 171 423 2024.

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**safer hulls and more**

LR's ShipRight gives you that confidence – and so much more.
It is the complete package of design, construction and lifetime ship care procedures. Tried, tested and trusted by VLCC owners, it is the most comprehensive package of safety measures on the market.

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experience. The model tests were in general, quite time consuming, and based on the experience gained the limited time for the design stage generally was to provide a not satisfying solution rather than an optimal one.

The availability of computational methods as Computational Fluid Dynamics (CFD) for resistance and propulsion, time simulation of ship's motions, finite element analysis of vibrations and stress, etc., presents the possibility of optimizing the relative merits of different design alternatives within a limited time frame. In this way, different design concepts can be analyzed with regard to speed-power, vibration, sea loads and other aspects almost simultaneously.

However, to obtain a high assurance of the project, model tests are recommended to verify the computational results.

The Future

The demands on ocean transport will focus more and more on competitiveness, safety and environmental aspects. Competitiveness means not only low fuel consumption, but also low maintenance costs, and safety means low accident rates and noise levels. Ships which do not comply with these regulations and requirements in regard to safety and environment may not be accepted, and it can be anticipated that such demands will only increase. Future ship designs will require larger design efforts and will consequently demand efficient and reliable design tools. In regard to safety and environment, the development of computerized calculations and models may help. The development of computational methods and models will be used more. Most aspects of ship hydromechanics — which earlier relied on model test results — can now be treated and visualized with greater reliability and at lower costs. This allows for the comparison of different design options and for the optimization of the designs. With more extensive use of computational methods, improvements in performance and safety seem to be possible. As an example, CFD calculations have been made for hull forms with different resistance, and the results indicate reductions in the order of 10 percent. Model tests will still be required to verify and validate computational results. However, the design work will then include both computational work and model tests.

Autoship Releases

Autoship 6

Autoship 6 is now shipping, and the manufacturer claims it sets new standards in hull design software, offering an array of technical and ease-of-use improvements. Autoship 6 includes a new high quality 3-D rendering, which offers shaded rendering, accurate hidden surface removal, up to 30 light sources and material properties allowing simulation of full or shiny materials of any color.

Approaching photorealism, the rendering is reportedly good enough for presentations. Autoship also reports it is six to 10 times faster than the flat shaded rendering in Autoship 5.

For more information on Autoship 6 Circle 112 on Reader Service Card

Improve Delivery Time and Cost for Ship production...

with the TRIBON Shipbuilding system

Users of TRIBON have reported major improvements in delivery time and costs for ship production. For example, one major European shipyard was able to reduce its delivery time from 18 months to 12 months for a single class of ships in a series.

In another case, the use of TRIBON has shaved a few months from delivery time and at the same time has improved the design procedures of a specialized single vessel. The design time was reduced from 2.5 years to 1.5 years. The result is that saving for this improvement is 400,000.

TRIBON is an Expert system

Shipbuilding knowledge accumulated over 25 years is implemented in TRIBON. This means that the shipyard has already performed the calculations and economy analyses for all steps in the design process. Based on this experience, the user can use the available production facilities in the most economical way.

All information stored in one common Product Information Model

The TRIBON system is the Product Information Model which is implemented in TRIBON. This system allows designers and planners to work with the same technical data for all parts of the shipbuilding process.

Automatic Production Information

The system of TRIBON is providing production information for the design in addition to the CAD system. The system allows designers and planners to work with the same technical data for all parts of the shipbuilding process.

KCS is a third of world building knowledge

The KCS system is a third of the world shipbuilding knowledge. KCS is an expert system which implements the shipbuilding know how. This means that KCS has the knowledge of the shipyard and can provide the shipyard with the most economical solution.
SKYCELL Satellite Telephone Service, a product from American Mobile Satellite Corporation (AMSC), offers mariners the lowest cost, satellite-delivered communications service when traveling virtually anywhere in North American waters—from Alaska to the Panama Canal, and throughout the Caribbean. With equipment costs ranging from about $4,000 to $8,000, and airtime costs starting at $1.49 per minute, AMSC makes satellite communications affordable. From anywhere within AMSC’s expansive coverage area, making calls to and receiving calls from anywhere in the world is as easy as it is from your home or office. All a caller needs to do in order to reach you, is dial your satellite phone’s 800 number, and it rings— it’s that simple! Call to find out how one of our SKYCELL Service authorized dealers or an AMSC Value-Added Service Provider can help you satisfy your communications needs at a price you can afford.

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New 3D Geometry Engine
Solid Modeller Introduced

Denal Robotics now offers a Parasolid-based solid modeller software products which reportedly gives engineers advanced solid modeling capabilities and the tools for an effective integration into engineering applica-
tions. Parasolid is a neutral solid modeler capability to the Denal software is an entry known in Parasolid CAD part files with zero data loss from the Denal simulation environment. Since there is no longer a need to translate large CAD files each time there is a revision, users will save at least a 90 percent reduction in preparation costs. Overall, the Denal Parasolid capability will decrease data acquisition time by approximately 60 to 90 percent, helping to bring engineering and information system which covers not only the license to use the entire Parasolid system, but also a technical collaboration agreement to jointly undertake new developments and give fresh technological impetus to DCN through the use of the Parasolid system. In the short and medium term, Denal and DCN will be working specifically in the area of robotics, assessment of tools, production, data management and work process control.

KCS' Tribon Chosen By
Korean, Ukraine Yards

Hyundai Heavy Industries, special & naval shipbuilding division, has purchased the hull, work preparation and the complete outfitting applications of the Tribon system. 41 Commissions Shipyard, a commercial and naval shipbuilder in Nikolaev, Ukraine, has bought the hull and complete outfitting applications of the Foran system. Also, Kockums Computer Systems (KCS) — is an integrated design 
and information system which covers not only the license to use the entire Foran system, but also a technical collaboration agreement to jointly undertake new developments and give fresh technological impetus to DCN through the use of the Parasolid system. In the short and medium term, Denal and DCN will be working specifically in the area of robotics, assessment of tools, production, data management and work process control.

Designed Especially For
Big Boat Handling
Rated Lifting Capacity...660,000 lbs. (300,000 kg)

The Marine Travelift® 300 BF mobile boat hoist is proving itself as a new versatile performer in large boat handling. Originally designed as a hoist for work boats and commercial fishing boats, the 300 BF unit readily meets the challenge of handling today's up-sized pleasure craft. The many design features, which are standard on the 300 BF hoist, make it easy to handle even the most difficult loads. The spacious design allows boat handling and unloading. A strong steel superstructure with stainless hydraulic tubing is a 90° pivot steering, hoisting, slinging and unloading. Rated Lifting Capacity...660,000 lbs. (300,000 kg)

The Marine Travelift® 300 BF mobile boat hoist may be your marina's best investment. It can easily handle even the most difficult loads. A strong steel superstructure with stainless hydraulic tubing is a 90° pivot steering, hoisting, slinging and unloading. Rated Lifting Capacity...660,000 lbs. (300,000 kg)
KCS Unveils Tribon Dotori Details

Kockums Computer Systems (KCS) recently announced technical details of the new Tribon Dotori module, which has seamlessly integrated into the Tribon system. The feature focuses on reducing worker hours during the assembly and erection phases. The Dotori feature in Tribon is an implementation of NC instructions for a continuously varying bevel angle in fillet welding whenever there is a dependence on the connection angle between the elements or their material thickness. Dotori can be applied to calculate bevels in many situations, for example, in welds of shell profiles and type of collets. The Dotori feature automatically control the angle of the cutting heads with a variation according to rules specified by the customer. The latest cutting machines for both plate and stiffener piece parts have the capability of controlling and changing the angle of the cutting heads. The user specifies an unrestricted number of instances of complex bevel definitions based on an extended number of basic bevel codes, thus setting up the customer’s own preferred standards affecting the design, and which will automatically be used in production. In doing so, the customer assigns values to a number of parameters (including chamfers, opening angles, nose and/or knees and gaps between the center of the joint and the edge of the plate after preparation) and may in a convenient way specify the rules under which each type will be applied at the various joint types.

Different bevel rules can be set up for different production lines, depending on the types of parts to be processed. In each instance, the connection angles are then automatically calculated from the Tribon Product Information Model during processing the nominal part geometries are modified in an automatic manner. KCS is touting Dotori as a means for world-class shipbuilders to reduce building time and cost through lower numbers of worker hours in the assembly and the erection processes. It complies with Japanese Quality Standards and improves the accuracy of parts manufacturing. In short, Dotori is designed to

• ensure a first-time fit of the component

![Diagram](image-url)
structural items at all of the assembly, thus contributing to a reduction or complete elimination of excess material;

• offer significantly reduced welding by suitable selection from a greatly increased number of bevel options. For example, minimizing extra machining resulting from chamfers;

• lead to extremely low rework levels because of the reliable, automated process which reduces the possibilities of human error;

• present the true cross-sections of joints; and

• facilitate the output of appropriate bevel notes and boring sketches from the nesting module.

Intergraph Upgrades 3-D Mechanical Design And Drafting Software

Intergraph Corp. announced that Solid Edge, the company’s new 3-D mechanical design and drafting software, and Imagineer, a 2-D precision drawing program, have been added to the NAVAIR/SPAWAR CAD-2 contract. Solid Edge incorporates parametric, feature-based, solid modeling tools with the Windows environment. Solid Edge incorporates Object Linking and Embedding for Design and Modeling (OLE D&M) extensions for Windows cut-and-paste, drag-and-drop integration when using 2-D mechanical parts and assembly models. Imagineer Technical is a 2-D precision drawing tool that bridges the gap between complicated drafting systems and basic drawing packages. Both products share the remarkable ease of use provided by leading edge Windows technologies, making them intuitive to use and eliminating the need for computer training. Tom Baybrook, vice president of marketing, Intergraph Federal Systems.

Introducing the new 400-A3 GMDSS Console System from SEA, Inc.

Fully integrated, the 400-A3 is already assembled in a rugged console for instant installation. Its logical, intuitive operation is so easy to learn, your crew will get up to speed—fast. And no system offers greater reliability. Guaranteed. Need another reason to buy? It’s made in the U.S.A. by a company that has manufactured and provided SSB, VHF, Telex and SatCom products for more than 20 years. And service stations are located around the world. So parts and maintenance support are close by to keep your system up and costs down.

For more information on today’s most logical choice in GMDSS systems, call SEA at (206) 771-2182.

Griffin Orders New Containetership

Durban-based Griffin Shipping Holdings has ordered a 1,728-TEU containership from Poland’s Szczecin yard. The 23,000-dwt vessel will be delivered in the second half of 1998. "This ship will fit neatly with our strategy of focusing on the super feeder sector of the container market. It will be an..." July, 1996

The only logical choice in GMDSS systems

Intergraph Circle 115 on Reader Service Card

Griffin Shipping Holdings owns and manages a fleet of multi-purpose, mid-size container ships and handysize bulk carriers through Hong Kong-based Griffin Shipping Line.
Henry J. Kaiser Avondale has built and delivered since the keel AO 203, USNS by Avondale These commercial fleet replenishment oilers the 16th ship of the T-AO 203 187 class which Avondale Delivers Navy Ship; Launches Industries, Inc. to the U.S. Navy. was and was designed and built with dou-

Sealift Command.

Nearly 12 years of ship construction contracts and like her sisterships Nearly 12 years of ship construction contracts and is expected to join the Fleet Replenishment Oilers moored at Bell Harbor for the ITS '96 maritime industry conference.

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World Video Service
Command, senior on-site construction representative. Witnessing were Captain David W. Widdon, U.S. Navy supervisor of Shipbuilding, Construction and Conversion; Rear Admiral W. A. Barrett, Military Sealift Command, Naval Sea Systems Command, T-AO project manager.

In addition, on May 17, Avondale launched the first of four double hull product/chemical carriers for American Heavy Lift Shipping Company (AHL) of New Orleans. Attending the side launching were representatives from AHL, Maritime Administration, American Bureau of Shipping and Avondale.

Stena Line Installs Windows-Based ECS On Fast Catamaran Ferries

Passenger ships and ferries are connected with ports, coasts and continents by timetables that are accurate down to the last minute. Under such circumstances the reliability of the propulsion plant takes on particular importance. MAN B&W four-stroke Diesel engines have been proving their reliability either as straightforward Diesel propulsion or Diesel-electric propulsion plant on board famous cruise liners and ferries.

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

Diesel Power
linking ports, coasts and continents by passenger ships and ferries

Stena Line Installs Windows-Based ECS On Fast Catamaran Ferries

Ferry operator Stena Line has installed PC Maritime’s Electronic Chart System (ECS) Navmaster Professional with U.K. Hydrographic Office ARCS charts aboard its high-speed catamaran ferry Stena Laing II. Stena Line’s next ferry scheduled to have Navmaster installed.

Stena Line’s Captain Roger Emmins of Stena Laing II, "The bridge display showing Stena Line’s track is piped through to video screens in the cabins, allowing passengers to follow our route as it’s plotted on the chart. This makes the journey more interesting, and if any passengers are feeling seasick, its reassuring for them to see how quickly we’re reaching our destination."

Stena Laing II routinely reaches 36 knots, carrying up to 600 passengers. Navmaster is reportedly the first electronic chart system licensed for ARCS.

A key development criterion was for the software to be compatible with future electronic chart development. MAN B&W Diesel engines have been proving their reliability either as straightforward Diesel propulsion or Diesel-electric propulsion plant on board famous cruise liners and ferries.

Circle 70 on Reader Service Card

For more information on Stena Line

Circle 100 on Reader Service Card

July, 1996

Stena Lyx is shown approaching Daxi harbor. Stena Line’s Stena Lyx II is the next ferry scheduled to have Navmaster installed.

Passenger ships and ferries are connected with ports, coasts and continents by timetables that are accurate down to the last minute. Under such circumstances the reliability of the propulsion plant takes on particular importance. MAN B&W four-stroke Diesel engines have been proving their reliability either as straightforward Diesel propulsion or Diesel-electric propulsion plant on board famous cruise liners and ferries.

With its comprehensive engine programme and the lowest heavy fuel consumption rate ever reached, MAN B&W is able to supply the ideal propulsion concept for every ship.
All this:
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• More power
• Better economy
• Lower emissions
• Simpler maintenance
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M 32
The long-stroker geared to the future

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Phone (905) 542 7810 • Fax (905) 542 7812
Circle 253 on Reader Service Card
Pegasus One Christened At Fincantieri

The state-of-the-art fast ferry MDV12000 Pegasus One, built by Fincantieri’s Riva Trigoso Shipyard for Ocean Bridge Investments, was recently christened. The vessel is the outcome of research studies made by Fincantieri regarding hulls capable of developing high speeds in rough seas. The new MDV, 450 ft. (137 m) long, built by Fincantieri’s Riva Trigoso Shipyard for Ocean Bridge Investments, was recently christened. The vessel is the outcome of research studies made by Fincantieri regarding hulls capable of developing high speeds in rough seas. The new MDV, 450 ft. (137 m) long, built by Fincantieri’s Riva Trigoso Shipyard for Ocean Bridge Investments, was recently christened. The vessel is the outcome of research studies made by Fincantieri regarding hulls capable of developing high speeds in rough seas.

The new 312-ft. (95-m) Fincantieri ship, christened Pegasus One, is designed to carry 600 passengers and more than 170 cars. Car embarking/disembarking is carried out through a large stern door on the main car deck, and through three moving ramps that connect the two garage decks.

High Tech...Inside and Out

The Pegasus One features high technological solutions in all its mechanical and electronic systems. The advanced technology of Metallic — manufacturer of all of Pegasus One’s interior panels — made it possible for interior designer Arendamonti Porte to furnish the highly advanced interior, which was developed and patented by Metallic in Geneva during five years of research within the British Euram program, which was financed by the European Economic Community.

The composite panels, called Midnight, reportedly feature excellent mechanical properties. Midnight is made according to a patented process based upon glass fiber reinforcement, three-dimensional fabric which has also been patented for wet exhaust.

The new material successfully passed the ISO 10249 “Full Scale Room Corner Test” required by the

NEW C-SERIES 55 & 80 KW COMMERCIAL GEN-SETS.

The Northern Lights C-Series of diesel generator sets for commercial and industrial use is now available in two new ranges: 30 to 59 kW and 50 to 70 kW. The new ranges give you two moreospel cost-effective power options for your new building or expansion project.

The C-Series range offers 100 kW or more and can also be equipped with a range of accessories to enhance the performance of your new installs.

Light cycle duty cycle. Lugger-powered Northern Lights give you low fuel and low maintenance, long engine life and extended TBO (time between overhauls). This adds up to lower life-cycle costs.

The C-Series range offers 100 kW or more and can also be equipped with a range of accessories to enhance the performance of your new installs.

Light cycle duty cycle. Lugger-powered Northern Lights give you low fuel and low maintenance, long engine life and extended TBO (time between overhauls). This adds up to lower life-cycle costs.

The new four cylinder 55 kW and six cylinder 60 kW give you low fuel and low maintenance, long engine life and extended TBO (time between overhauls). This adds up to lower life-cycle costs.
Meeting New Berth Demands:
Cruise Leaders Reignite Search for First-Time Business

ABOVE: Royal Caribbean's Grandeur of the Seas newbuild is shown in Kvaerner Masa-Yards' docks. The 73,000-ton, $300-million ship is scheduled for November delivery.

By Bridget A. Murphy, assistant editor

S

ip orders are in, joint ventures are underway, consolidations are growing and a new player has emerged; yet the key to long-term profitability in cruise shipping is the success of one strategy - the industry's ability to attract first-time passengers. In the struggle to stay afloat, some cruise lines have stressed product differentiation in an attempt to capture specific passenger segments. Others have touted aggressive new-build schedules and European expansion programs as the panacea for continued growth. However, it has become increasingly clear that the industry must continue to convert "potentials" into "clients" if it is to support the volume of new berths produced before the turn of the century.

A recent debate within the Cruise Lines International Association (CLIA) concerning setting aside funds for generic advertising targeted at promoting cruising in the U.S. has recalled this idea in the minds of cruise executives. As stated by Carnival Cruise Lines' Vice President of Sales Maurice Zarmati: "Every time you advertise a bow, it doesn't really matter whose logo is on it ... We need more bow advertising." And many tend to agree with him, including Royal Caribbean Cruises Ltd. Chairman and CEO Richard Fain, Disney Cruise Line President Art Rodney and Carnival Marketing and Sales Senior Vice President Vicki Freed. These executives discussed the cruise marketplace and company strategies for growing business, as well as articulated their views on the CLIA debate during recent sessions with M&R.

Richard Fain makes no secret of his company's plans to infiltrate the European market. By Bridget A. Murphy, assistant editor

Continuing a "creen" is the thick, nothing looks like a "real" cruise ship. But that's what Royal Caribbean Cruises Ltd. (RCCL) - a line which has emerged as a dominant player in the sector, consistently posting strong profits over nearly three decades of operation. Richard Fain's description of the market conditions that contribute to the success of his outfit is classically understated: "Where there have been more ships, there have been more passengers," he said, adding, "I think it's looking good. I feel a lot more bullish today than I did a year or two ago."

Mr. Fain admitted that passenger rates have fallen short of his expectations, although he countered claims of diminishing passenger counts by reasoning that 19 percent more passengers have been carried on ships, despite the 13 percent overall drop in capacity. "The Royal Caribbean management agreed that the practice of "overcompensation" was, in fact, responsible for the current state of the industry, explaining that RCCL has been able to maintain its market share "by keeping the product at a price level that's competitive." Mr. Fain makes no secret of his company's plans to infiltrate the European market. He states that in the last two years, RCCL has been successful in increasing the visibility of its product abroad, and that he expects this trend to continue. In order to reverse this situation without discouraging first-timers, he explained, RCCL's updated strategy: "Discounting is no longer across the board ... We will offer a series of specific, specialty discounts. We've become much more sophisticated in the targeting of discounts."

Although he expressed support for "overcoming myths of cruising," the Royal Caribbean executive discussed CLIA's proposal to fund generic ads with an air of caution, saying: "Nobody wants to spend money on what they feel is not an effective campaign, and everyone has an idea of what is an effective campaign."

However, Mr. Fain did stress the importance of increasing the visibility of cruising as a strategy for attracting passengers, and in this context, he spoke about the emergence of Disney's Cruise Line. "Disney's entry will add visibility and credibility to the industry and I think that's very important," he stated, explaining that the company will bring recognition to cruise shipping as a major tourist industry in the U.S., and as a "significant economic engine for this country." He went on to compare RCCL's product with that of Disney Cruise Line, highlighting the differences in appeal and market定位.
Another step ahead

Introducing the Wärtsilä 26

Wärtsilä Diesel has taken another step ahead, and in doing so, set new standards. The brand new Wärtsilä 26 engine is a clean, reliable, high power density, easy to operate power source. The Wärtsilä 26 incorporates a high degree of component integration, and an advanced fuel and combustion system. It combines the proven heavy fuel technology with the Wärtsilä Diesel Low NOx combustion technology.

The Wärtsilä 26 covers a power range from 1450-5850 kW at 900-1000 rpm. As a Wärtsilä Diesel product, the Wärtsilä 26 benefits from the well known product quality, service and support of our global network.

Contact our local Wärtsilä Diesel company or representative for detailed information.
will offer. “What cruising does is says we’ll have a family vacation that everybody likes. We’re creating what I would call a family vacation, where Disney will be offering golf trips, said Mr. Fain. He added that guest ships on the Atlantic would cruise to Jamaica and host day-cruise excursions for their guests. Disney has also been talking about possibly cruising to New York and to the Mediterranean, and there are endless opportunities. “We want to try to break down the barriers. First-timers will have much more confidence,” said Mr. Fain. While he declined the opportunity to discuss the recent Carnival-Airtours deal, which provides a competitor with an indisputable presence in Europe, Mr. Fain did entertain questions on the possibility of increasing his company’s footprint in the Far East. “We’re in a different league. Our ships will be a very specific niche.”

### New Ships: 1996 And Beyond

<table>
<thead>
<tr>
<th>Cruise Line</th>
<th>Ship</th>
<th>Delivery Date</th>
<th>Berths</th>
<th>Tonnage</th>
<th>Cost (M$)</th>
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<tbody>
<tr>
<td>1996</td>
<td></td>
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<tr>
<td>Central Cruises</td>
<td>Inspiration</td>
<td>6/96</td>
<td>2,071</td>
<td>70,347</td>
<td>520</td>
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<td>Central Cruises</td>
<td>Central Destiny</td>
<td>12/96</td>
<td>2,600</td>
<td>160,000</td>
<td>540</td>
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<tr>
<td>Celebrity Cruises</td>
<td>Celebrity Galaxy</td>
<td>11/96</td>
<td>1,870</td>
<td>73,000</td>
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<td>Carnival Cruises</td>
<td>Carnival Magic</td>
<td>6/96</td>
<td>1,928</td>
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<td>Norwegian Cruise Line</td>
<td>Norwegian Gem</td>
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<td>Royal Caribbean Line</td>
<td>Rhapsody of the Seas</td>
<td>1/96</td>
<td>1,180</td>
<td>73,000</td>
<td>520</td>
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<tr>
<td>Royal Caribbean Line</td>
<td>Monarch of the Seas</td>
<td>10/96</td>
<td>1,150</td>
<td>73,000</td>
<td>520</td>
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<td>Seabourn Cruise Line</td>
<td>Seabourn Legend</td>
<td>11/96</td>
<td>1,500</td>
<td>10,000</td>
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<tr>
<td>World Explorer Cruise</td>
<td>Universe Explorer</td>
<td>7/96</td>
<td>1,700</td>
<td>23,000</td>
<td>N/A</td>
</tr>
</tbody>
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| 1997               |                   |               |        |         |           |
| Celebrity Cruises  | Mercury           | 10/97         | 1,870  | 73,000  | 520       |
| Celebrity Cruises  | Gala Dream        | 10/97         | 2,200  | 78,800  | 530       |
| Holland America Line| Rotterdam II      | 10/97         | 2,130  | 67,000  | 520       |
| Princess Cruises   | Crown Princess    | 10/97         | 1,950  | 77,000  | 520       |
| Royal Caribbean Line| Grand Princess    | 11/97         | 1,630  | 58,000  | 520       |
| Royal Caribbean Line| Majesty of the Seas | 9/97  | 1,150  | 73,000  | 520       |
| Royal Caribbean Line| Majesty of the Seas | 10/97 | 1,150  | 73,000  | 520       |
| Royal Caribbean Line| Majesty of the Seas | 6/97  | 2,050  | 79,000  | 520       |

| 1998               |                   |               |        |         |           |
| Central Cruises    | Diamond Princess  | 10/98         | 2,071  | 70,347  | 520       |
| Central Cruises    | President        | 10/98         | 2,071  | 70,347  | 520       |
| Celebrity Cruises  | Celebrity Constellation | 9/98  | 2,600  | 160,000 | 540       |
| Disney Cruise Line | Disney Magic     | 1/98          | 1,740  | 85,000  | N/A       |
| Disney Cruise Line | Disney Wonder    | 1/98          | 1,740  | 85,000  | N/A       |
| Princess Cruises   | Grand Princess   | 9/98          | 2,600  | 140,000 | 520       |
| Royal Caribbean Line| Vision of the Seas | 4/98  | 2,050  | 79,000  | N/A       |
| Norwegian Cruise Line | Norwegian Sky | 6/98      | 1,500  | 79,000  | N/A       |

| 1999               |                   |               |        |         |           |
| Silverstar Cruises | Unveiled          | 10/99         | 294    | 22,000  | 520+      |
| Princess Cruises   | Sea Princess      | 10/99         | 1,950  | 77,000  | N/A       |

Source: Cruise Industry Annual Association.

CLIA membership begins in January 1997.

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Mr. Fain said: "Costa has a very good market position. The idea of doing something with them was quite attractive to both of us. We both worked hard at studying it and came to the mutual conclusion that each of us would be better off doing it ourselves." Mr. Fain did entertain questions on the possibility of increasing his company’s presence in Europe, as he felt it was "a natural evolution." Disney is in the position to break into the European market "without external resources or significant capital investment," he said.

Disney has spared no expense in its efforts to penetrate the sector. With architectural plans completed for the private Disney cruise terminal, Terminal No. 8 — to be completed in time for the first Disney ship to call in April of 1998 — Disney has established a presence in the industry. Disney has also been talking about possibly cruising to New York and to the Mediterranean, and there are endless opportunities. “We want to try to break down the barriers. First-timers will have much more confidence,” said Mr. Fain. While he declined the opportunity to discuss the recent Carnival-Airtours deal, which provides a competitor with an indisputable presence in Europe, Mr. Fain did entertain questions on the possibility of increasing his company’s footprint in the Far East. “We’re in a different league. Our ships will be a very specific niche.”
Kelvin Hughes Ninis 9000 — a family of console units, which forms a flexible workstation arrangement to meet any operational requirement or Classification Society notation.

The integrated bridge system from Kelvin Hughes

Ninas 9000
and was able to visit Disney's abbreviated time schedule. "They were the most competitive in the way they treated us," the executive recalled. For Carnival, the advantage of not having to retrofit ships for compliance with MARPOL (marine pollution) and SOLAS requirements, DCL and Lloyds have already begun strategizing safety management plans for the new requirements. "The cost advantage is there," Mr. Zarmati said. "We have a task force put together and we're hoping to get certificated before we start operating," Mr. Rodney said.

With funds sunk into a private terminal, private island, in-house design team and in-house marketing muscle, the arrival of Disney on the seascape means that the company is "going to try a cruise." Mr. Freed pointed out that Disney's marketing has already begun to "try a cruise." Mr. Fain said, "As an industry, we need to grow the first-time cruisers." Mr. Freed, who looks for the discounts."

Mr. Fain said, "There is no reason why the U.S. should not be competitive in this market." Mr. Zarmati said that Carnival has worked to "try a cruise." Mr. Zarmati also encouraged cruise operators to "try a cruise." Mr. Freed offered further comment on the cruise market and said, "At some point, as the cruise market has become more and more sophisticated, a good place to deploy the older vessels - vessels built in the 1980's - would be Europe.

U.S. Yard Contractors: Potential B.R. Valuation?

The cruise industry's search for new passengers continues with the U.S. government continuing to help develop domestic commercial shipbuilding business, perhaps not far fetched in support of a mutually-beneficial relationship. Giving U.S. yards a slice of cruise newbuild action might be a violation of the U.S. Constitution, but a violation of the Constitution might be the attention of a significant American workforce.

According to reports issued from Papenburg, Germany, on May 29, the first block of the new vessel is equal to or less expensive than the labor at hand. The first block of Celebrity Cruises' first vessel is nearing completion. There is no reason why the U.S. should not be competitive in this market.

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the yards where we build ships." The RCCL chairman also said that the quality of work of U.S. yards is equal to or better than the skills of European counterparts, and with foreign subsidies falling, American yards might at last see an opportunity in the cruise sector. However, he noted: "Cruise ships require specialization that isn't usable for other products. That may make it less desirable in the near term as a focus."

Art Rodney also spoke about Disney's efforts to keep a chunk of its business in the U.S.: "We did try to diversify and get as much business for the U.S. suppliers as possible. GE did get a major contract." He also expressed support for U.S. commercial shipbuilding and spoke about Newport News' sparsely publicized role in the Disney ship bid process. "Newport News participated in the bidding process when we considered building our ships." According to Mr. Rodney, the yard did not offer Disney a price quote. "They were not in a position to meet our timetable, so they withdrew basically," said the cruise executive.

It seems reasonable to suggest that as cruise lines look to implement capacity-boosting strategies with the debut of new tonnage, U.S. berth-builders and equipment suppliers should not be overlooked as a possible jumping off point for increasing cruise shipping awareness within the general public.

Princess Cruises has reportedly unveiled the industry's first direct ship telephone service. Starting in April, passengers aboard Sun Princess, Crown Princess and Star Princess were instantly connected with the broadcast center or purser's office aboard the ships after dialing 1-900-CALL SHIP, without contact with Inmarsat or knowledge of the vessel identification number or ocean region code.

Ashland Chemical's Drew Marine Division now manufactures automated monitoring systems that reportedly allow cruise ships to efficiently maintain vital operating systems in spite of continuing crew reductions. The company's AWT and ACWT automated water treatment systems provide computerized, continuous monitoring and control of water chemical conditions in steam generating and diesel cooling water systems, helping to extend equipment life through real-time monitoring of harmful water conditions that can contribute to corrosion. On April 2, Edward D. Rudner, Power generation, electrical propulsion, control and automation For cruise ships, bulk carriers, chemical tankers, shuttle tankers, warships and offshore applications, Cegelec offers flexible solutions to meet the needs of the customer, whether it be the owner, operator or the shipyard. Our shaft generators and power equipment, AC drives with precision digital control, power management and dynamic positioning systems are designed to optimize safety, operational flexibility and efficiency - improving our customers' competitive advantage.

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Cegelec: Electrical Engineering of the Alcatel Alsthom Group.
the construction of three, 600-passen-
gger cruise ships. Projected cost for the
two vessels is in excess of $500 mil-
lion.
In May, Celebrity Cruises entered the
Alaskan market, with the positioning
of its 56,811-ship Horizon in the state, for a series of seven-night
inside Passage and Glacier Route voy-
ages. According to Celebrity
President Richard E. Sacco, "The rep-
currenting of the fleet has enabled
Celebrity to enter this market with a
stunning Alaska cruise experience,
combined with Celebrity's distinctive,
premium level of award-winning
cruise service and cuisine." The
vessel had completed a season in
San Juan.
On March 18, a special ceremony
at Chantiers de l'Atlantique, a ship-
yard in St. Nazaire, France, Royal
Caribbean Cruises Ltd. Chairman and
CEO Richard Fain accepted delivery
of the company's newest ship -- 1,800-
passenger, 65,000-ton Splendor of the
Seas. Splendor is the first of five
ships the company will introduce dur-
ing the next two years, with additional
passenger capacity totaling 7,400
passengers. For more information,
visit the cruise line's web site at
British company Graduate Lighting
Ltd. has introduced a new, low locat-
ing lighting system designed to pro-
vide clear and bright illumination for
side evacuation of passengers from
smoke-filled cruise vessel areas. The
system, Pathfinder, has been specifi-
cally formulated for compliance with
IMO's 1997 requirements.
Early in 1996, Holland American
Line (HAL) announced that its flagship
Rotterdam would be officially retired
from service in September 1997. On
March 13, HAL said that its newest
cruise vessel, scheduled to enter ser-
vice on August 1, in time for the com-
pany's one hundred twenty-fifth
anniversary, had been named
Splendour of the Seas. Splendour
is the first of five
ships the company will introduce dur-
ing the next two years, with additional
passenger capacity totaling 7,400
passengers. For more information,
visit the cruise line's web site at
of commercial shipboard satellite systems, has introduced its TV-at-Sea systems, which transmit satellite television programs to ships in all the major ocean areas. A fully stabilized antenna is part of the Model 2494 system, which locks the satellite onto the ship as it pitches and rolls. An RCA DDS receiver is provided as part of the system, and decodes the digital programming from DIRECTV and USSB.

IGC Satellite Services provides cruise ship passengers with the technology to make phone calls, send faxes and e-mail, access the Internet and make use of video conferencing while at sea. According to a company rep, "Our maritime experts are taking the cruise industry into the twenty-first century by allowing passengers on a cruise to communicate how and when they want." One-minute calls cost a reported $9.50.

Ateliers & Chantiers du Havre To Supply Cruise Ship Fin Stabilizer

Ateliers & Chantiers du Havre (ACH) will supply its Alpha-Fin stabilizer to Chantiers de l'Atlantique for installation on cruise ship Paul Gauguin building at the French yard for Radisson Seven Seas Cruises. The fin system, the result of 30 years of experience in roll stabilization for merchant and military vessels, consists of a main body with two associated trailing edge fixed flaps. According to ACH, the cavity tunnel and moving tank tests have illustrated several hydrodynamic advantages associated with use of the stabilizer, namely: 35 percent improvement in lift coefficient; 35 percent reduction in drag coefficient; a larger stall angle; and a reduction in cavitation in the common operating range. These factors will combine to reduce drag motion, resulting in increased fuel savings. Risks associated with jamming flap joints are also avoided as the new fin has been stripped of fin/flap joints — making it simpler to manufacture and easier to maintain.

GE Secures Disney Orders

GE Marine won the contract to supply electric propulsion and control systems for the two new Disney ships. GE will supply two 25,000-hp propulsion motors, associated G7 drives, PC-based controls and more.
Ruggedized, IP66 Weather-proof, Full function, High performance

Your reliable partner in harsh environments...

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- Rain shower
- Grease
- Dust
- High/Low humidity
- Salt fog
- High/Low temperature extremes

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We can change your world
The following section is a collection of news and information from some of the world's leading marine diesel engine manufacturers. It is intended to inform readers of recent and near-term developments, in a quick-read format. To receive additional, technical details from any of the manufacturers mentioned in this section, please circle the appropriate number on the Reader Service Card bound in this edition.

**Fincantieri**

Fincantieri is building for the sea.

Fincantieri is the largest and most diversified shipbuilding yard in the Mediterranean, and one of the largest in Europe. The operational capability and structures of the oldest and most glorious Italian companies of the sector have met in Fincantieri, during its more than two century long history. An accumulated, improved, and continuously updated wealth of experience acquired through the construction of over 7,000 vessels of all types allows today Fincantieri to offer technologically advanced answers to all marine operators' requirements, thanks to its organisation structure made up of three Divisions:

- **Merchant Shipbuilding and Conversions**
- **Naval Constructions**
- **Diesel Engines**

**Alaska Diesel**

Circle 75 on Reader Service Card

Alaska Diesel Electric makes Northern Lights generator sets (5-708 kW), Lugger propulsion diesels (67-1300 HP) and the STARS anti-soot system. Northern Lights and Lugger have reportedly earned a reputation for reliability and smooth operation. New Luggers include the 700-kW LD700 and the LD250Z2.

**Detroit Diesel**

Circle 119 on Reader Service Card

Detroit Diesel Corporation is engaged in the design, manufacture, remanufacture, sale and service of heavy-duty diesel and alternative fuel engines, marine diesel engines and related products. The company offers a comprehensive line of diesel engines from 50 to 16,000 hp for the marine, power generation and military markets. Detroit Diesel serves these markets through a worldwide network of more than 2,500 authorized distributors and dealers.

**Daytona Marine**

Circle 100 on Reader Service Card

Daytona Marine's engine line ranges from 80 to 925 hp covering continuous duty, commercial duty and pleasure craft ratings. A new range of light weight marine diesels will be introduced later this year, covering 50 to 200+ hp. An engine in the 100-hp range, weighing 300 lbs and measuring 25-in. or less in all dimensions will be typical of these new engines.

**Deere Power Systems**

Circle 102 on Reader Service Card

Building on the success of its John Deere PowerTech .9 to 8.1 L engines produced last year, Deere Power Systems Group has introduced Hog Deere PowerTech 10.5 to 12.5 L engines, offering up to 375 and 500 hp, respectively, for a variety of applications. In addition to meeting current and anticipated off-road emissions regulations, PowerTech 10.5 and 12.5 L engines reportedly maintain the standard of reliability and durability established by John Deere. Features include the camshaft located high in the head, reportedly resulting in the elimination of pushrods and lifters; more precise control valve events; fewer parts; fewer wear points and an extended valve adjustment period.

**Detroit Diesel**

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Detroit Diesel Corporation is engaged in the design, manufacture, remanufacture, sale and service of heavy-duty diesel and alternative fuel engines, marine diesel engines and related products. The company offers a comprehensive line of diesel engines from 50 to 16,000 hp for the marine, power generation and military markets. Detroit Diesel serves these markets through a worldwide network of more than 2,500 authorized distributors and dealers.

**Deere Power Systems**

Circle 86 on Reader Service Card

Building on the success of its John Deere PowerTech .9 to 8.1 L engines produced last year, Deere Power Systems Group has introduced Hog Deere PowerTech 10.5 to 12.5 L engines, offering up to 375 and 500 hp, respectively, for a variety of applications. In addition to meeting current and anticipated off-road emissions regulations, PowerTech 10.5 and 12.5 L engines reportedly maintain the standard of reliability and durability established by John Deere. Features include the camshaft located high in the head, reportedly resulting in the elimination of pushrods and lifters; more precise control valve events; fewer parts; fewer wear points and an extended valve adjustment period.

**Dieselmotorenwerk Vulkan GmbH**

Circle 80 on Reader Service Card

Dieselmotorenwerk Vulkan GmbH (DMV) is a manufacturer of marine diesels up to 68,520 kW under licenses of MAN B&W, New Sulzer Diesel, and MHI. DMV also produces spare parts for MAN B&W and Sulzer Diesels.

**Daytona Marine**

Circle 85 on Reader Service Card

Daytona Marine's engine line ranges from 80 to 925 hp covering continuous duty, commercial duty and pleasure craft ratings. A new range of light weight marine diesels will be introduced later this year, covering 50 to 200+ hp. An engine in the 100-hp range, weighing 300 lbs and measuring 25-in. or less in all dimensions will be typical of these new engines.

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**Detroit Diesel**

Circle 89 on Reader Service Card

Detroit Diesel Corporation is engaged in the design, manufacture, remanufacture, sale and service of heavy-duty diesel and alternative fuel engines, marine diesel engines and related products. The company offers a comprehensive line of diesel engines from 50 to 16,000 hp for the marine, power generation and military markets. Detroit Diesel serves these markets through a worldwide network of more than 2,500 authorized distributors and dealers.

**Deere Power Systems**

Circle 86 on Reader Service Card

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Electro-Motive Division

The Electro-Motive Division (EMD) of General Motors Corp. produces diesel power for marine propulsion, offshore and land-based oil well drilling, power generation and other industries. A complete line of GM/EMD engines is reportedly available to meet requirements for marine propulsion and marine generator applications. A complete power package, including engines and accessories, is available through the EMD Power Products Distribution Network worldwide. For marine propulsion, EMD offers eight, 12, 16 and 20-cylinder Roots-Blown 645E6 series engines and eight, 12, 16 and 20-cylinder turbocharged 645B7 diesel engines. The turbocharged models offer a wide range from 1,050 to 2,100 hp at 900 rpm. For genset applications, EMD engines cover an output range from 745 to 3,580 kW at 60 Hz-900 rpm and 570 to 2,980 kW at 50 Hz-750 rpm. Electro-Motive continues its ongoing research efforts to improve engine performance, particularly in the areas of fuel efficiency and emissions with an emphasis on electronic fuel injection.

Fairbanks Morse Engine Division/Coltoc Industries

Fairbanks Morse offers a complete line of modern diesel engines produced for both marine and stationary applications. A variety of medium-speed engines from 640 to 29,322 bhp is also available.

GEC Alsthom

GEC Alsthom Ruston Diesel's medium-speed engines provide main propulsion and auxiliary power for a wide range of commercial and naval vessels. The company first supplied engines for towing power in 1935, and maintains a strong position in today's market. In 1990, Ruston powered the first 242.7 ft (74 m) wave piercing catamaran in its record-breaking crossing of the Atlantic. To date, the company has powered 22 fast ferries. In 1995, the company introduced a 20-cylinder version of its engine, meeting the demand for higher power. Since its release, the engine has been specified for nine vessels.

Krupp MaK

The Krupp Group has been involved in the building of diesel engines since their invention 100 years ago. Today, Krupp MaK develops and manufactures medium speed, four-stroke engines for marine propulsion and electrical power generation duties. In June, Krupp MaK released its latest engine, the M25, with a power range of 1,740 to 2,700 kW.

KHD Canada

KHD Canada is a wholly-owned subsidiary of Deutz MWM of Germany. Deutz MWM has launched the 616 engine series, an efficient high-performance diesel engine capable of providing up to 1,100 kW at a speed of 2,000 rpm. The 620 series is the highest power output in this class with a power of 1,360 kW at 2,600 kg. The 620 series is being developed for more efficient and economical operation.

July, 1996

For proven performance choose Paxman high speed and Ruston medium speed diesel marine engines. From 610 - 7080 kW, our engines offer low fuel consumption, dependable performance and extended service intervals, backed by worldwide customer support.

GEC ALSTHOM Diesels - a leader in diesel technology.

Paxman and Ruston.
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For proven performance choose Paxman high speed and Ruston medium speed diesel marine engines. From 610 - 7080 kW, our engines offer low fuel consumption, dependable performance and extended service intervals, backed by worldwide customer support.

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Circle 232 on Reader Service Card
Diesel Engine Guide

Further details on the DOHC, four-cylinder model, which generates 1,400 kW to the 8,050 hp four-stroke model version, which generates 6,500 kW to 14,000 hp can be obtained by inquiring with the 962 speed dependent MAN B&W.

MAN B&W Alpha

MAN B&W Alpha Diesel offers generic propulsion packages, which include all components — main diesel engines, reduction gearboxes, propulsion and control systems. It offers packages in power ranges from 1,000 to 12,200 hp.

MTU's 396 series engines include a six, 8, 12 and 16-cylinder diesels with power ratings ranging from 450 to 1,620 kW. The entire range of the MTU 396 series spans the power spectrum from 80 kW to 7,400 kW.

New Sulzer Diesel

In the past 18 months, New Sulzer Diesel Ltd. has announced four new marine engine designs and they are now represented in the company's orderbook. These designs include the first orders for what will reportedly be the world's most powerful diesel engines — the 12-cylinder RTA96C of 89,640 bhp output. Twelve-cylinder engines will power the two 6,674 TEU containerships recently contracted in Japan, while two 5,750 TEU containerships also booked in Japan will have 11-cylinder RTA96C engines. Two 8,700-dwt RoRo vessels ordered by Tor Line in Italy, will have the first examples of the new, larger-bore Sulzer medium-speed engine type, the ZA50S. Each ship will be fitted with twin 9ZA50S engines of 20,340 bhp combined output. In addition, there is a growing orderbook for the RTA58T and RTA48T mid-range, low-speed diesel engines. The 42 engines of these types currently on order are for 45,000-dwt open-hatch bulkers booked in Poland; Aframax, Panamax and Handymax bulkers in Japan; and containerships in the People's Republic of China.

S.E.M.T. Pielstick

S.E.M.T. Pielstick ensures design, research and development, manufacturing, sales and after-sales service of its four-stroke diesel engines. The company's product range starts from the PA4 high speed engine with a power of 480 kW at 1,200 rpm and reaches 25,000 kW per engine. With more than 36 million kW in operation worldwide, S.E.M.T. Pielstick is a market leader of four-stroke diesel engines: 3,530 engines on board merchant ships; 1,250 engines operating in 55 naval vessels belonging to 35 countries; 10 million kW for the production of energy worldwide; and 6,200 engines fitted on locomotives and dumpers.

Ulstein Bergen AS

Ulstein Bergen AS manufactures medium-speed diesel engines for ship main propulsion and electric power generation. More than 5,000 engines are in operation worldwide, in a variety of marine applications. The Ulstein Bergen product range spans from the PA4 high-speed engine with a power of 480 kW at 1,200 rpm and reaches 25,000 kW per engine with the medium speed type. With more than 36 million kW in operation worldwide, Ulstein Bergen is a market leader of four-stroke diesel engines: 3,530 engines on board merchant ships; 1,250 engines operating in 55 naval vessels belonging to 35 countries; 10 million kW for the production of energy worldwide; and 6,200 engines fitted on locomotives and dumpers.

Wartsila Diesel

Wartsila Diesel will commence prototype testing on what is reportedly the largest medium-speed engine, the Wartsila 64. The new generation of Wartsila Diesel engines has been developed in response to the market's demands for higher efficiency at lower emission levels, combined with further enhanced reliability and reduced lifetime cost.

Marine genset program from MAN B&W Diesel's Holeby Diesel comprises the 16, 23, 28 and 32 series engines, available in power ranges from 500 to 4,000 kW. All units are factory tested and delivered in a ready-to-start state. Further, the units are designed for compactness and ease of installation.

Mitsubishi Heavy Industries, Ltd.

Mitsubishi Heavy Industries offers Marine Star Speed Diesel engines — UEC 33, 43, 60, 75 and 85 LSII series, as well as MET turbochargers for two and four-stroke diesel engines — MET 33, 42, 53, 66 and 83 SE series.

Dependable power for your ships

MTU diesels are liquid-cooled, compact four-stroke engines. Its program includes the 099, 183, 331, 396, 595 and 1163 series units.

RTA-series low-speed engines 1480-65880 kW

ZA40S and ZA50S medium-speed engines 3600-21600 kW

S20 medium-speed engines 460-1440 kW

New Sulzer Diesel

Circle 76 on Reader Service Card

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MTU's 396 series engines include a six, 8, 12 and 16-cylinder diesels with power ratings ranging from 450 to 1,620 kW. The entire range of the MTU 396 series spans the power spectrum from 80 kW to 7,400 kW.

New Sulzer Diesel

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activities include technology projects which aim at developing world-class technologies that can be implemented in Wartsila Diesel engines. An example is the antipolishing ring, which has reduced the lubricating oil cost of the engine to one-third, and doubled the cylinder liner lifetime. Another example is the gas diesel technology which has proven very successful in floating production installations. On the emission control side, low NOx combustion has made it possible to meet the coming IMO regulations with all Wartsila Diesel engines, and for most of them, a considerable reduction of fuel consumption was achieved. The direct water injection technology released in 1995 brings NOx levels down to approximately half the level of the IMO curve. For the stringent regulations, the compact SCR has been developed.

Cummins Marine*

In a continuing effort to update its product line, Cummins Marine introduced the enhanced KTA50-M2 as an ideal power choice for a variety of commercial applications. The initial expectation for limited production has already been exceeded, and engines are now being installed around the world, including Germany, Korea and Southeast Asia. The KTA50-M2 features Centry electronics, which offer adjustable all-speed governing, intermediate speed control, dual power curves and improved transient response.

Valve Co. Offers Exhaust And Valve Solutions

The Valve Company specializes in the field of diesel engine exhaust and valve operation, as well as maintenance, technical assistance and problem solving. A combination of nimonic valves and the turnomat valve rotators are offered for HFO burning engines. This combination, together with improved cage reportedly leads to increased reliability, prolonged TBO and reduced downtime.

Vibration Damper Maintenance Affects Engine Life Cycle

The complex dynamics and higher engine cylinder excitations of modern diesel engine marine designs require dampers for controlling resonant torsional vibration, and for ensuring a long service life. A fully functioning viscous damper works in preventing fatigue or failure of marine propulsion engines and drive trains. Reportedly, more than 50 percent of medium speed diesels and 15 percent of slow speed diesels fitted with full lubrication are likely to require damper repair in their useful life. The damper has been developed for the demanding marine environment. The damper is designed to be the core of the system, with a toroidal core that contains the damping medium. The damper is designed to be the core of the system, with a toroidal core that contains the damping medium.

For more information

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Circle 307 on Reader Service Card
On February 12, during a storm off the Brazilian coast, a 15,000-dwt SD 14 design ship Al Johffa went aground in Santos Bay, Brazil, just days before the start of a carnival. Recognizing the danger of having a large oil spill on the beaches during a heightened tourist season, the vessel's owners and their P&I club — Ocean Marine of London — quickly contracted Ft. Lauderdale, Fla.-based Titan Maritime Industries to remove the spilled oil using local equipment and personnel. The contract was let on February 15, and was followed by a scramble to obtain the necessary equipment and a barge to pump it.

The pumping operation began with the use of "spate" pumps and untested plastic suction and discharge hoses, and continued until four days later — by which time 438-cu.-m. of oil and slops had been transferred. During the oil removal, Titan's on-scene Salvage Master Guy Wood performed a dive inspection in order to formulate a plan for salvaging Al Johffa.

The ship was lying hard aground on granite for the entire length of its port side, with the number one and two holds tidal, and a slow leak in hold number three. Only three double bottoms were left intact out of 10, and her drafts were approximately 27 ft. (8.2 m) forward and seven ft. (2.1 m) aft. The salvage master reported that there was also a rock pinnacle sticking up three ft. (.9 m) inside the number six double bottom, the shaft tunnel was flooded, and a rock was sticking up about 10 ft. (3.04 m) inside the number two hold. The minimum water depth on the starboard side was 22 ft. (6.7 m).

Captain Wood decided that refloating would be possible, and removing the wreck by cutting it up would be prohibitively expensive. Despite hiring out of local equipment, a strike in the Brazilian Customs Office delayed equipment transfers from the U.S., and the vessel suffered additional damage — including the settling of the bow three ft. further underwater — resulting from the onsets of another storm.

A salvage team of 24 workers worked around the clock welding down and bracing tween deck hatches for the number two hold, and sealing the number one hold as the tide permitted. The last hatch welded shut — measuring 30 x 30 in. — was the forward trimming hatch on the port and starboard sides — a task which took two workers two tide cycles to accomplish.

On February 19, with the assistance of two local harbor tugs with 2,200-hp each, Al Johffa was refloated just as another front passed through the area. The vessel was taken to be anchored with a skeleton crew and remained for four days in seas of up to 10 ft. (3 m) before waves were calm enough to permit removal of salvage equipment. If the ship had remained aground, she would have undoubtedly broken up.

On February 23, Al Johffa navigated to a position 393 ft. (120 m) southeast of Santos. The valves that had been used to pressurize the number one and two holds were opened, allowing air out and causing the ship to sink by the bow. In the vessel's final moments, her stern stood straight up in the water and the damage to the number six double bottom and tunnel side tanks could be clearly seen.
**Diesel Engine Guide**

**Wärtsilä Designs Largest Medium-Speed Engine**

Wärtsilä Diesel, which is now in the middle of a process to upgrade its entire engine portfolio, has introduced the Wärtsilä 64, the world's largest medium-speed engine. Current schedules call for the new engine to be started later this year. Designed to respond to market demands for higher outputs and improved efficiency, this new medium-speed engine will be equipped with a power output of roughly two MW/cylinder. Meeting this specification, the inline version will cover up to 8 MW in single engine installation and 16 MW in a twin-engine installation. The manufacturer assures that the VI2 will also find a market as a marine engine, which would provide a 40 MW output in a twin configuration.

**Inkster Powered By MAN Engines**

**Operations speed — provides a top speed of excess of 40 knots**

The Yanmar Diesel Group has recently announced that the group's various hotel services is grouped in the visit compartments, along with the fuel tanks and compressed CNG tanks for engine room fire suppression. This includes a hot water tank, a domestic water pump, a venturi boost system and a high-pressure diesel fuel injection pump. A recently renovated water making system and a diesel-fired furnace for accommodation heating are installed in the starboard and port engine compartment.

**Compared Cycles**

The single-cycle efficiency of the W64 will approach 50 percent, but the cycle has also been developed, which means that waste heat is used for production of steam to drive a steam turbine. The optimized cycle, based on the Wärtsilä 64 specifications, is projected to end up at an efficiency rate of 55 to 60 percent. The efficiency rises at higher outputs because the steam turbine efficiency improves with size.

**Hitachi Zosen To Begin Construction Of New Ariake Machinery Works**

In July 1993, Hitachi Zosen Corporation and government authorities of Kunohama Prefecture and the Town of Hashi concluded an agreement on the construction of the new Ariake Machinery Works. After developing the detailed design of the project under the guidelines of government authorities, the company began construction on the grounds of the Ariake Works on April 15. This facility is to be a replacement for the Shibakama Works, the company's major machinery factory located in Kanahe, Osaka, Japan. The city of Osaka is carrying out a large-scale development project in the western coastal area of Konohana Ward. Since the Ariake Works was inaugurated as a shipyard in 1973, it has been home to advanced shipbuilding technology. Among the 21st century, the company is constructing its new machinery works to extend its heavy machinery operation, giving the facility the capacity to produce bulk marine vessel equipment. As a result, the new works is expected to be a world leading machinery facility that functions as a primary base in the company's international strategy.

**Goltens — ROUND THE CLOCK, ROUND THE WORLD.**

**CRANKSHAFT GRINDING**

When Goltens reconditions crankshafts, crankshafts, and main journals, in most instances we are able to do the job without removing the shaft. Our in-situ grinding saves you downtime and money. If your job is best handled in-shop, Goltens has facilities worldwide to do the job fast. And we've been doing it for over 50 years. For all your crankshaft needs, count on Goltens. We'll do the job right away...and we'll do it right.
Propulsion Notes

MELS Delivers Low-Speed Diesel Powerplant To CEM

An international consortium consisting of Mitsui Engineering & Shipbuilding Co., Ltd., MELS and Barstow & Wau Sneddon Marine Contractors AS (BWSM) have delivered a 100-MW low-speed, two-stroke, diesel-driven electric powerplant—one of the most powerful in the world—to Compagnie Delmas, in the French Polynesian island of Tahiti.

The plant consists of two Mitsui-MAN B&W 125/36MC-S diesel engines.

For more information on MELS
Circle 91 on Reader Service Card

Lugger Offers Innovative 6L140AL2 Diesel Engine

Lugger's L6/140AL2 diesel engine is based on the L6/140A, but contains significant changes which reportedly give it more horsepower and efficiency of its predecessor. The new ratings for the 500 c.i.d. (15.24 L) diesel are: high output, 600 hp rating is already at work in Alaska.

Other changes include new injection nozzles and turbocharger.

On board diesel engine maintenance at top level

The motor under development is called an Axial Field Permanent Magnet Ship Propulsion System, a subsidiary of Caterpillar Inc., to power the future of the U.S. Navy.

The new model's high output Lugger's L6/140AL2 diesel engine reportedly gives it more horsepower and efficiency of its predecessor.

Magnet Ship Propulsion System, a subsidiary of Caterpillar Inc., to power the future of the U.S. Navy.

Sailing the seas with Chris-Marine

The motor under development is called an Axial Field Permanent Magnet Ship Propulsion System, a subsidiary of Caterpillar Inc., to power the future of the U.S. Navy.

The system can be used on various applications for streamlining and price tagging. The video system can also be used as a high-speed camera system on various applications for streamlining and price tagging. The video system can also be used as a high-speed camera system on various applications for streamlining and price tagging.
Since working on the water is anything but predictable, it pays to have an engine that is. That's why the most important element we engineer into every Caterpillar Marine Diesel Engine is reliability. A process dedicated to keeping your operating costs low and your business running smooth. Call 1-800-321-7332 for a free brochure.

The Tribe plans to buy the first TriCat vessel to be built at the Pequot facility to provide world-class transportation to Foxwoods, the resort casino it owns at Mashantucket in southeastern Connecticut. The boat, which will reportedly propel the boats at speeds of up to 51 knots, will be the fastest commercial passenger vessel in North America, with a 147.6-ft. (45 m) length overall, a 38.6-ft. (11.8-m) beam, and a 4.6-ft. (1.4-m) draft.

The Pequot River Shipworks is a newly created company organized specifically for shipbuilding programs, and is separate from other tribal business enterprises.

Tribal Chairman Richard A. Hayward said, "We expect to initially hire 60 employees, many of whom acquired their shipbuilding skills at the Electric Boat Division of General Dynamics in nearby Groton. The firm expects to hire an additional 100 or more in the next million."

The Pequot's shipbuilding effort is part of an agreement with the FBM Marine Group. The ship's U.S.-based designer, that given the Tribe rights to build and sell all the TriCat high-speed passenger vessels in North and South America, the Caribbean and Hawaii.

Solar Turbines Inc., based in San Diego, designs and manufactures its gas turbines and turbomachinery systems under quality management systems certified to ISO 9001 standards. Solar Turbines has produced more than 9,500 marine and industrial gas turbines in the 1 to 11-MW (1,350 to 15,000-hp) class for customers in 80 countries, and the turbines have reportedly logged more than 530 million operating hours.

For more information on Solar Turbines Circle 95 on Reader Service Card

Northrop Grumman Marine Systems Supplies Sulzer Engines For USCG
Northrop Grumman Marine Systems has supplied four 10,000 bhp Sulzer ZA40S diesel engines for a new U.S. Coast Guard (USCG) icebreaker. In January 1996, the company submitted proposals to four U.S. shipyard teams competing for a U.S.-based program for the new amphibious assault ship (LPD 17). The ship award is scheduled for this September. Marine Systems has completed the designs of the ZA40S gas turbines that transmit the propulsion power at an efficient propeller speed.

Circle 109 on Reader Service Card

Stork Services Announces Company Developments
Stork Services b.v., a worldwide supplier of diesel engine spare parts specializing in Sulzer and MAN engines, has completed consolidation of operations at its warehouse facilities in Hoogvliet near the Port of Rotterdam. The company had relocated sales and administration from Hengelo earlier this year. Reconditioning facilities remain at the Stork factory in Hoogvliet, but the exchange pool for repaired pistons, cylinder heads, and cylinder liners will be relocated to the warehouse. Stork and MAN rebuilding facilities are maintained in Singapore. A. Benema, continues as general manager, and Michael Kurzer, formerly with Vosper Thornycroft Shipyard, joined Stork Services as general manager for the U.S. and Canada.

For more information on Stork Services Circle 109 on Reader Service Card
GKN Westland Secures Canadian Hovercraft Order

GKN Westland Aerospace, a division of GKN plc, has recently been awarded a contract by the Canadian government for the detailed design and construction of two new hovercraft for the Canadian Coast Guard. As the primary contractor, GKN will undertake the design and management of the project, while Canadian shipyard Hike Metal Products Ltd. will perform vessel construction, and Isle of Wight supplier Hovertravel Ltd. will provide proprietary components and consultancy advice during the manufacturing process.

The new craft, designated AP1-88/400, is an enlarged version of the model acquired in 1987. The AP1-88/400s freight deck is longer, and at approximately 20 tons, its payload capacity has almost doubled. The first hovercraft is due for completion in March 1998, after which time it will begin operation on the St. Lawrence, along with two SR.N6 GKN Westland-built hovercraft already positioned in the area.

For more information on GKN Westland Aerospace, Circle 138 on Reader Service Card.

People & Company News

Kvh hires new Marketing Manager

With more than 10 years of sales and marketing experience, Cindy Russell has joined KVH Industries as the company's new Marketing manager. Prior to accepting her new position, Ms. Russell was employed by AIRMAR Technology Corp., where she was responsible for developing, marketing and selling transducers to KVH and marine and commercial electronic manufacturers.

Black Sea Shipyard Names U.K. Agent

The Black Sea Shipyard Rom SA, based at Mola Harbours, Constanta, Romania, recently appointed AFJ Marine Services Ltd., of Wimbledon as its U.K. agency for promoting company services in Great Britain. The yard undertakes major repair work, ship conversion and shipbuilding projects for all vessels up to 60,000 dwt. According to John Taylor of AFJ, "The scope of work possible at the yard with respect to the popular panamax and handy-max vessel size provides AFJ with the ability to widen its service provision to vessels in Eastern Europe.

Raytheon Names Duffy Marketing Communications Manager

Raytheon Marine has announced the appointment of Patricia Duffy as the company's new Marketing Communications manager. According to Keith Wansley, Raytheon Marketing manager, "Patti's strong graphic design background will be a tremendous addition to the Raytheon Marine marketing group." Ms. Duffy has owned her own graphic design firm since 1992, serving the creative demands of New England businesses. Raytheon, headquartered in Lexington, Mass., is a $12-billion company operating in four businesses: commercial and defense electronics,
Crusader Names Marine Marketing/Sales Director

Chet Janssens has announced the appointment of Tom Calhoun as the company's new director of Marine Marketing and Sales. In his new position, Mr. Calhoun will be responsible for marine sales management, marketing and advertising programs and trade show exhibits. In the past, he has been employed as the director of Marketing for several yacht companies, including Mainship/Luhrs, Baron Yachts and Stamas Yachts.

JJMA Opens New Technical Support Office

John J. McMullen Associates, Inc. (JJMA), a firm of naval architects, marine engineers and transportation support specialists, has recently opened a new office in Pittsburgh, Pa. This new office is designed to provide the company with additional expertise in the field of machinery design, operation, maintenance and repair, as well as machinery component design. The newly acquired professional staff of 60 engineers are experienced in control systems; electrical and fluid systems; and marine, mechanical, naval and structural engineering — complementing the firm's already established capabilities in ship design and integration.

ACBL Announces New Appointments

American Commercial Barge Line Co. (ACBL) has hired Diane Blank as the company's new Director of Marine Engineering. Diane M. Blank was also recently named to the position of Professional Development manager.

Mike Lang has been appointed the position of vice president of operations at DEL NORTE Technology Inc.'s U.S. affiliate, here he will oversee production, engineering, sales and international activities of the organization, a leading manufacturer of precision positioning systems for marine applications.

Nothing but the best for your passengers

The safety and comfort of your passengers are important to you. And to us. Because only satisfied guests come again.

Onboard comfort involves many things, not the least of which is an advanced diesel-electric drive system. One that makes ship operations particularly comfortable and provides distinct advantages in terms of economy, quietness, and environmental compatibility.

And, if the system is from Siemens, then you can be sure that it’s especially safe. In guaranteeing excellent availability through redundant subsystems, we equip each drive unit with its own open-loop and closed-loop controller. Moreover, we take the time and effort needed to keep your onboard network “clean” by minimizing undesirable phase effects in the drive.

Standard components, well-proven in everyday use, make our systems particularly reliable. And standard drive/automation interfaces do the rest for operating convenience. Not to overlook the fact that we assume system responsibility for the entire facility.

That’s why a growing number of shipowners and operators place their trust in our technical capability, including F&O, DFO and the Washington State Ferries Corporation.

For more information, simply fax your inquiry to: +49-40-28 89-23 27.

Mr. Lang served as a radio/electronics specialist in the Royal Navy, and worked for several navigation-related companies before setting up the DEL-NORTE company in the U.K. nine years ago.

Moran To Direct AWO's Legislative Outreach Program

John A. Moran, an attorney with nearly a decade of experience as a congressional staff counselor in both houses of Congress, has joined the American Waterways Operators (AWO) as vice president of Legislative Affairs. Mr. Moran succeeds Curtis Whalen, who has left the agency to pursue advocacy work in the energy field.

During his service as a congressional staff counselor, Mr. Moran's position in the marine transportation industry.

IN A SENSE, the safety and comfort of your passengers are important to you. And to us. Because only satisfied guests come again.

Onboard comfort involves many things, not the least of which is an advanced diesel-electric drive system. One that makes ship operations particularly comfortable and provides distinct advantages in terms of economy, quietness, and environmental compatibility.

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- Shaft twist at all speeds. Two sensors (white pieces) are [[SNIP]]
- RPM are measured using fiber optic sensors. It will measure &[[SNIP]]
- The fact is, authentic De-Bug Products are unique, [[SNIP]]
- Damaging effects of nasty diesel "bugs" that others are trying to copy us. There is only one De-Bug, the original and the best.
- Our De-Bug Products work so well protecting fuel systems from the damaging effects of nasty diesel "bugs" that others are trying to copy us. Yup, even used our name if you can imagine that!

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Improved Operation. Increased Reliability. Reduced Costs.

Austal Opens Tokyo Office

Australian fast ferry builder Austal Ships has announced the opening of a regional office in Tokyo, marking the name of delivering its first high-speed passenger ferry to Japan. The 30.9-meter Drill Vessel, built by Austal, was launched in August, 1994. According to Chairman and Managing Director John Rothwell, "Austal has dedicated great time and resources to understanding and working with Japanese regulatory authorities. The market is substantial and the new office is already proving an important link in promoting Austal's business in the Pacific region."
opportunities for further export sales to Japan.”

Toyohiko Kobayashi, a former director of the Marubeni Machinery & Engineering Corp., is managing Austal’s Tokyo office.

Jastram Engineering Relocates

Jastram Engineering, a Canadian manufacturer of marine hydraulic steering systems, has relocated to new premises. The company now resides at 467 Mountain Highway, North Vancouver, B.C., Canada V7J 2L3. The telephone and fax numbers remain unchanged: tel: (604) 986-0714; fax: (604) 986-0334.

Selber Joins Newport News Nuclear

Newport News Nuclear, a division of Newport News Shipbuilding, announced that Arlene B. Selber has joined the division as vice president of Business Development. Newport News Nuclear is pursuing commercial nuclear projects and involvement in international projects, as well as expanding its existing commercial nuclear power plant repair and maintenance business.

Selber has a strong background in environmental remediation and waste management, as applicable to Department of Energy projects. Her most recent position was with Parsons Engineering Science, Inc., where she served as vice president of Commercial Systems Integration.

Marine Electronics Solutions To Rep For Six Companies

Marine Electronics Solutions, Inc., based in Jacksonville, Fla., have been named the manufacturer’s representative for the southeastern and Gulf regions of the U.S. for six companies, namely: Paruns Magen, Inc.; Merlin Engineering, Inc.; Able Marine; Adaptive Systems; Seiko Marine Clock; and Harland & Wolff Nautronics. The company supports electronics requirements of the marine industry, offering systems integration, bid preparation, procurement and technical support.

Southwest Marine Promotes Two Top Execs

San Diego-based yard Southwest Marine Inc. (SWM) has promoted Herb Engel to the position of executive vice president of Continental Maritime of San Diego — expected to take place this summer — he will also serve as president and COO of this neighborly facility.

After serving as SWM’s president and COO, Herb Engel has been named vice chairman of the board of SWM. He will also act as president of San Francisco Drydock, an affiliated repair company in the Engel family.

AOTS Award Recipients Announced

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AOTOS) Award recipients for 1996 were recently announced. Vice Admiral Albert J. Herberger, administrator of the Maritime Administration, and C. Bradley Mathiasthal, president and CEO of Matson Navigation Company, were selected to receive these honors at a gala event to be held at the Sheraton New York Hotel and Towers in New York City on November 8.

This announcement was made by John Bowers, chairman of the AOTOS Committee, and president of the International Longshoreman's Alliance, AFL-CIO, on May 22 — Maritime Day. Last year's award recipients were Senator Trent Lott and James Barker, principal owner of Interlake Steamship Co., Moran Transportation Co. and Mormac Marine Group.

Top Execs Named At OMI Petrolink

On May 24, Jack Goldstein, chairman and CEO of OMI Corp., announced the election of Robert W. Carson to the presidency of OMI Petrolink. Mr. Carson was previously employed by McDermott as president of Odyssey Shipping Company. He is also chairman and CEO of Spars International Inc., a joint venture between J. R. McDermott and Aker Technology, which has been awarded a contract by Chevron U.S. Production Company for the fabrication and installation of the Genesis spar platform, a deepwater development in the Gulf of Mexico. The contract is valued at approximately $300 million with McDermott and Aker each responsible for approximately half of the project under subcontract to Spars International. McDermott will fabricate the hull in Morgan City, Louisiana, with engineering being provided by McDermott Engineering. Aker will fabricate the platform in Finland.

Peter A. Barton has been elected to the position of executive vice president of OMI. In his new position, Mr. Barton, a former vice president of Government Relations, is now senior vice president for the organization. In addition to his role as a lobbyist representing the interests of OMI at the Federal Trade Commission and before Congress and the Clinton Administration, Mr. Barton is also responsible for corporate communications.

Tony Macdonald, former director of Environmental Affairs, was promoted to the position of special counsel and director of Membership Services. He will administer the wide range of membership services activities, including membership development and marketing programs, spring conferences and annual conventions.

Chevron Awards Contract For Platform Construction And Installation

Chevron International Inc., a joint venture between J. R. McDermott and Aker Technology, has been awarded a contract by Chevron U.S. Production Company for the fabrication and installation of a deep-water spar platform for the development of a large gas field in the Gulf of Mexico. The contract is valued at approximately $300 million with McDermott and Aker each responsible for approximately half of the project under subcontract to Spars International. McDermott will fabricate the Genesis spar platform, a deepwater development in the Gulf of Mexico, valued at approximately $300 million.

Kurt J. Nagle, president of the American Association of Port Authorities (AAPA), recently announced the promotions of three staff members. Jean Godwin, former vice president of Government Relations, is now senior vice president for the organization. In addition to her role as a lobbyist representing the interests of U.S. ports before Congress and the Clinton Administration, Ms. Godwin is also responsible for corporate communications.

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Cegelec To Install Winch Control System On USCG Cutter

Vicam Fast Ferry Order

Vosper Thornycroft Secures Alsthom Contract

Global Response To Environmental Threat

Vasper Thornycroft Controls Secures Vicam Fast Ferry Order

Mustang Wins Contract

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DRBA Invests Millions To Revamp Ferry

By Nina D. Miller, assistant editor

After a $27-million, 15-month refurbishment project, M/V Twin Capes, an important ferry service between Cape May, N.J., and Norfolk, Va., now offers two levels of dining, a gift shop, children's play area, sun deck, and a tour of the vessel. The first customers rode the vessel on May 20, and on June 14, Twin Capes recommenced seven-day per week service.

Delaware underwent less extensive renovations in 1990, which preceded the ferry with a lido deck, full air-conditioning. According to Mr. Salmon, the next vessel due for renovation is Cape May, which will undergo a $13-14 million revitalization in October, putting Delaware in a class between Twin Capes and Delaware.

According to Mr. Salmon, public information officer at DRBA, the organization realizes the operation of the ferry is very seasonal — generating most, if not all of its profit between Memorial Day and Labor Day. "The response has been good, but we won't realize the full magnitude until the busy season," said Mr. Salmon. Nonetheless, 1,200 reservations were made for Twin Capes within a two-day period following these excursions. In all, 300 guest were invited to attend the inaugural voyage on May 20, including local officials, corporate affairs, weddings and other catered events.

On May 18-19, after the evacuation chute system passed U.S. Coast Guard testing, Twin Capes sat on trial voyages which carried a combined total of 1,500 passengers, for both morning and afternoon sailings. "The boat only worked during the two days until the busy season," said Mr. Salmon. Nonetheless, 1,200 reservations were made for Twin Capes within a two-day period following these excursions. In all, 300 guests were invited to attend the inaugural voyage on May 20, including local officials, corporate affairs, weddings and other catered events.

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Hopewell, Virginia (Manufacturing)

On the InfoBahn
Customers can link to the Global Polymer Resource Center site at Akron, Ohio USA. For a full listing of our products and their properties visit: http://polysort.com/allied/
Wärtsilä Engines To Power New Alaska Ferry

Wärtsilä Diesel received an order from Trinity Marine Group's Halter Marine Inc. for a pair of Wärtsilä 32DF main engines to power a new RoRo (roll-on/roll-off) ferry for the Alaska Marine Highway System. Wärtsilä will also provide project management and support from its offices in Annapolis, Md., and Vasa, Finland, which also includes performing design and developing the engineering package, as part of the contract. The engines, to be built at the company's Vasa facility, are due for delivery in December. The new Alaska ferry is the first conveyance passenger vessel to be built in the U.S. in more than 40 years. It will measure 380 ft. (116 m) long and will have a capacity for 120 passengers and 200 vehicles. The ferry also has a RoRo capability, able to carry 120 vehicles. According to the Alaska Department of Transportation and Public Facilities, Alaska's governor is committed to investing $120 million for the Marine Highway system. Wärtsilä will also provide the engines for the 12 new diesel-electric chemical tankers that Stolt is having built at three European shipyards.

PC Maritime Launches PC-Based Training Programs

The second version of Navmaster, an electronic charting system — being used onboard vessels as an aid to navigation and as a passenger information system — is also reportedly attracting interest from land-based organizations. The second version of Navmaster, an electronic charting system — being used onboard vessels as an aid to navigation and as a passenger information system — is also reportedly attracting interest from land-based organizations. The second version of Navmaster, an electronic charting system — being used onboard vessels as an aid to navigation and as a passenger information system — is also reportedly attracting interest from land-based organizations.

PC Maritime, in conjunction with the Royal Australian Navy, and contains an automated depiction of all 37 Rules, brought to "life" via 50 movie clips and voiced-over instructions. From software developer PC Maritime, Safe Passage is a precursor to its companion "Rule of the Road" simulator — "Officer of the Watch" — a program which requires users to put knowledge of rules into practice. Two additional programs — "Stability for Ship Operations" and "Stability for Naval Vessels" — are computer-based training programs designed to teach and test users on the subject of stability. Developed at the U.S. Coast Guard's training center, the programs use interactive graphics, animation and questioning routines to deliver an effective training package. Structured exams are given based on the U.S. Coast Guard's criteria to obtain a license, with the addition of computer-based exercises included in the program for 500-yard waterways.

Wind-Driven Turbine Generator Installed On Offshore Platform

Finnish turbine manufacturer Vergnet has produced and installed what is reportedly the first wind-driven turbine generator on an offshore platform. Two Vergnet GEV 5.5 wind turbines were installed on each of two unmanned gas recovery platforms in the North Sea environment reportedly with the purpose of providing power for the platforms to only twice a year. The Vergnet turbines were produced and installed in a wind farm 40 miles off Great Yarmouth, England. The use of wind turbines to power these remote platforms in the North Sea environment reportedly has been done to cut the cost of providing the power to operate the platforms through battery storage. Consequently, reducing and maintenance frequency has reportedly been cut in half, reducing required visits to the platform to once twice a year. The Vergnet turbines were produced and installed in a wind farm 40 miles off Great Yarmouth, England. The use of wind turbines to power these remote platforms in the North Sea environment reportedly has been done to cut the cost of providing the power to operate the platforms through battery storage. Consequently, reducing and maintenance frequency has reportedly been cut in half, reducing required visits to the platform to once twice a year.
ECDS With Radar Overlay
Available From PinPoint

PinPoint Systems has launched ProPoint, a PC-based IMO/IHO compliant electronic chart display system (ECDS) system designed for commercial and military vessels. It is reportedly the world's first ECDS system to simultaneously display both raster and vector data in real-time on a PC platform. The ProPoint system is not limited geographically, as it reads both raster and vector formats: Canadian Hydrographic Service (CHS), NOAA/BSB, ARCS (British Admiralty) raster charts, CMP-93 (Cmap's vector data) and the IHO SP-57 data format, formerly referred to as US46. Reportedly, the system is also not limited functionally, as it reads radar input, raster symbols with text data, river window, an automated deck log and the R3000 enhanced radar overlay. Other options available include ASIS single-beam and multi-beam sonar display, dynamic search and rescue pattern generator, and many more.

The navigation system includes a voyage manager with built-in data log for recording voyage data, an unlimited route creation, unlimited waypoint per route, route creation across multiple charts, a route monitoring system, and extensive route and waypoint editing facilities and chart ranging facilities. The system is equipped with ARPA radar input, marker symbols with text data, river window, an automated deck log and the R3000 enhanced radar overlay. Other options available include ASIS single-beam and multi-beam sonar display, dynamic search and rescue pattern generator, and many more.

EPCIDA Toxic Release Inventory (TRI) Reporting Guide for the Shipbuilding Industry:

• Environmental Protection Agency, Toxic Release Inventory (TRI) Reporting Guide for the Shipbuilding Industry;
• Definition and Procedures for Reporting Toxic Substances Report under the Emergency Planning and Community Right-to-Know Act (EPCRA) Toxic Release Inventory (TRI) Reporting Guide for the Shipbuilding Industry;
• Methodology of Part Standardization;
• Flux-Cored Welding with Low Spatter Using CO2 gas;
• Best Approach for Simulation Combined with Best U.S. Shipbuilding Industry;
• Occupational Safety and Health Administration Technical Advisory Committee Phase II;
• Methodology of Part Standardization;
• Flux-Cored Welding with Low Spatter Using CO2 gas;
• Best Approach for Simulation Combined with Best U.S. Shipbuilding Industry.

In addition to the selection of projects for FY '97, the ECB addressed the concept for a so-called "super project" which could involve participation by several NSRP panels operating under the direct supervision of the ECB.

Circle 211 on Reader Service Card
280,000-dwt tanker measures

Mobil Commissions Double Hull Supertanker

Mobil Corporation has commissioned its second double hull tanker, VLOC Raven. Naming ceremonies were held on May 31 at Oppama shipyard in Japan. The 280,000-dwt tanker measures 1,089 x 190 ft. (317 x 58 m), and will carry a cargo of 2.2 million barrels crude oil. 

"The Raven's advanced design demonstrated Mobil's commitment to the safe operation of all our vessels," said Gerard Formes, president of Mobil Shipping and Transportation Company (MOSAT). "The ship incorporates the latest double-hull technology and vessel navigation systems for an added margin of safety for the transportation of crude oil. The supertanker's design features exceed the stringent tanker safety standards set by OPA 90 and IMO rules. Mobil developed and patented the design for the first double-bottom tanker in 1968. The company reports that there are 10 ships in 15 feet have double bottoms." 

The missions are specific but the propulsion choice is universal... 

Hamilton Jet

With over 20,000 installations worldwide, it's not surprising that HamiltonJet has links with most of today's hull forms. Whether a sophisticated military attack craft or a hard working crew boat, HamiltonJet will have a suitable waterjet propulsion system in their extensive range to help you achieve optimum propulsion coefficients. 

Experience based and after sales services support all projects, ensuring a continuous connection between your hull and its destination, wherever the mission.

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Livestock Carrier Conversion
For Kuwait

Meyer Werft of Papenburg, Germany, has received an order for the conversion of a car carrier into a livestock carrier. The order was placed by the Kuwait Livestock Transport and Trading Co. (KLLT). It is the twenty-sixth Meyer Werft conversion for the shipyard. Meyer Werft reportedly competed with Southeast Asian shipyards for the contract; there were reportedly no European shipyards among the competitors. The conversion of Al Mezainah will be carried out under the management of Meyer Werft in cooperation with a shipyard in Klaipeda/Lithuania and Motorenwerke Bremerhaven (MWB), Germany. The final outfitting work — installation of pens, fodder, drinking water and ventilation systems — will be completed in Papenburg. The total conversion period will be approximately 11 months. With a length of 610.2 ft. (186 m) and a breadth of 104.3 ft. (32 m), the ship will be capable of carrying 80,000 sheep or 75,000 sheep and 500 cattle.

Gardy McGrath Produces Video Detailing Environmental Systems On 21st Century Navy Ship

Using state-of-the-art 3-D animation and digital technology, Gardy McGrath has completed a video describing environmental systems on the Navy's 21st Century destructor. The video is being deployed today in preparation for these designs. The presentation has attracted the attention of the cable television network Home Box Office (HBO) as well as the 21st Century destroyer is utilized to "clean-wake" ships of tomorrow. The focus of Gardy McGrath's work is to produce a segment that will address the Navy's environmental program technology as it relates to the "clean-wake" ships of tomorrow.

Marine Electronics Solutions Named Manufacturer's Rep For Six Companies

Marine Electronics Solutions Inc., based in Florida, has been named the manufacturer's representative in the Southeast and Midwest regions for the following companies: Transcom Marine; Mariney; Mini-Marine Adaptable Instruments; Lakeshore; Solas; Marine Clock Systems, and Sonar Communications.

For more information on Marine Electronics Solutions Circle 104 on Reader Service Card

Libyan Shipowners' Council Opposes IIT "Week of Action"

Faced with stepped-up efforts by the International Transport Workers' Federation (ITF) to combat the rise of "flag of convenience" shipping, the largest association of owners and operators using Open Registry, the Libyan Shipowners' Association, has issued a statement: "We are facing yet another attempt by the ITF to influence our ship operators in the wrong direction. This is not a fight, it's an action," said Democracy M.S. Smith, general secretary of the

The Cincinnati Gear Company

State-of-the-art engineering and manufacturing capabilities have made The Cincinnati Gear Company a leader in the power transmission industry. Cincinnati Gear offers a full line of high performance marine reduction gearing, designed for high efficiency, minimum weight and low maintenance. Our marine propulsion experience ranges from mega yachts, hovercrafts and high speed passenger ferries, to fleet oilers and military support ships. High power density gearing for transmitting gas turbine and diesel engine power, is one of our specialties. CINCI's extensive experience developing state-of-the-art gear designs enables us to develop custom gearboxes for specialized applications, including parallel shaft, epicyclic and hybrid gearbox arrangements.

For more information on how CNTI can transmit power for your application, contact...

America's Leading Gear Manufacturer

The CINCINNATI GEAR COMPANY

Circle 317 on Reader Service Card
is in the context of a confused number of accu-
rations about the wellbeing of seafarers employed
on open registry vessels.
Recent international conventions on labor rela-
tions for seafarers is certainly important,
but the ITF says it is not enough to adopt any
international conventions that maritime
nations the world over — including open reg-
isters — have vigilantly supported. "Respon-
sible shipowners have long been rec-
dering efforts to maintain high labor relations
standards for seafarers, regardless of flag," said
Mr. Smith. "The best thing we as an industry
can do is to improve working conditions for seafar-
ers is to get substantial ships to comply. The
ITF should turn its considerable power and
attention to improving conditions onboard sub-
sequent vessels. We need to ensure that there is
no way to comply with international labor stan-
dards."

The ITF signifies national unions in all
branches of transportation. In the case of open
registrations, the ITF enforces its policies by threat-
ening a shipowner with boycott action if there is
no agreement with the crew on conditions that
are acceptable to the ITF.

Inbro Citygate Offers Offshore
Standard Insurance Package For ROVs

London insurance broker Inbro Citygate is offering a standard cover reportedly suited in all types of sub-
marines from the smallest survey to the largest undersea 
submersible and piling pushing vessels.

According to Inbro Citygate's Chairman Danny Graham, the intro-
duction of this cover has been made easier because the company has spe-
cialized in this sector for a number of years: "We now have several years of 
documented claims experience with ROVs working in various parts of the 
world including the North Sea, the Middle East, Southeast Asia, South 
Africa, Australia, and the U.S. Gulf. We have taken the initiative to cap-
writers with detailed statistics which, in turn, has made possible the estab-
ishment of a placing facility tailored specifically to the needs of ROV oper-
ators."

The Inbro Citygate cover applies to all offshore equipment anywhere in 
the world, including within-in-ice transit and storage for all risks of 
physical loss or damage.

The cover is placed 45 percent at Lloyd's with the remainder carried by
major international reinsurance companies operating on the London 
Market. The remainder is carried by Lloyd's with the remainder carried by
major international reinsurance companies operating on the London 
Market.

For more information on Inbro Citygate
Circle 103 on Reader Service Card

Bisso Completes Salvage Operations On Offshore
Tug Mac Tide 63

Bisso Marine Company, Inc. completed salvage 
operations on the 7,000-hp offshore tug Mac Tide 
63. The tug sank in 60 ft. (18.2 m) of water, 20
mi. off the Louisiana coast in South Timbalier 
Block 96 after striking a submerged object. A 
100-ft. (30.5 m) length of the engine room was 
lost through the starboard side, becoming embed-
ded 15-ft. into the natural bottom.

Underwater repairs were made using wet weld-
ing techniques and the vessel was re-purged for 
lifting. Diving services and a liftboat were pro-
vided by Nippon International of Belle Chasse, 
La. Bisso's 600-ton derrick barge Kari Basso arrived 
on the scene, anchored into lifting position and 
brought the vessel to the surface in two hours. 
Mac Tide 63 was towed into Fourche, La. where the 90,000 gallons of diesel fuel 
that remained aboard the vessel during the salvage 
disposal. The vessel was then released to its owners, Tidewater 
Marine, Inc.

For more information on Bisso Marine
Circle 101 on Reader Service Card

Ingalls Commissions USS Cole

DDG 67, the eighth DDG 51 Class Arleigh 
Burke guided missile destroyer to be built for the U.S. Navy by Ingalls 
Shipbuilding, was commissioned USS Cole, and reported for duty 
during ceremonies on June 8 at Port 
Riverview, Fla. Commander M. Stewart O'Brien, USN, will assume com-
mand of the new ship which will be homeported in Norfolk, 
Va.

For more information on Ingalls
Circle 99 on Reader Service Card

To find out more about

John Deere diesel 
engines for marine applications, contact our 
Customer Service Department at: (319) 283-1663.

Maritime Reporter/Engineering News
I communications coverage for the AMSC telephone service, American ultra-wide area talk zones. The Dispatch Service — a satellite-delivered voice service — offers SKYCELL Satellite Mobile Satellite Corporation throughout the Caribbean.

SERVICE PROVIDERS

AMSC

AMSC offers SKYCELL Satellite Dispatch Service — a satellite-delivered digital voice dispatch service. Customers can reportedly create multiple talk groups within any one of the SKYCELL coverage areas. SKYCELL Service satellite coverage area includes virtually all of North and Central America and surrounding waters, from Alaska down to the Panama Canal and throughout the Caribbean.

AT&T

AT&T Mobile Satellite Services delivers quality, reliable shore-to-ship and new ship-to-shore international satellite services. With the addition of AT&T Mobile Satellite A, B, C and D services, AT&T now offers its Inmarsat A, B, R, M and B voice, fax and data services. AT&T also offers its Inmarsat A, B, R, M and B voice, fax and data services. AT&T has introduced OceanMail, North American telephone services which promise to serve maritime users with up to 80 percent of available time.

British Telecom

British Telecom Inmarsat provides satellite communications coverage for the Atlantic Ocean Region. BT has joined forces with Norway’s Telekom and Singapore Telephones, offering satellite mobile direct dial telephone, fax and data services to more than 200 countries worldwide. BT SatMail is a new managed mailbox service which allows ships access to the Internet and X.400 networks for electronic mail and messaging services. Other BT Inmarsat services include: BT Inmarsat A, B, M, R-M, and M-Dep.

IDB Mobile Communications

IDB Mobile Communications is a global provider of Inmarsat A, B and C voice, fax, data and shore-to-ship services. IDB offers its Inmarsat A, B, M and R voice, fax, data and data services. IDB has introduced OceanMail, North American telephone services which promise to serve maritime users with up to 80 percent of available time.

IDB Communications

IDB Communications is a global provider of Inmarsat A, B and C voice, fax, data and shore-to-ship services. AT&T Inmarsat A, B, M and R voice, fax and data services. IDB has introduced OceanMail, North American telephone services which promise to serve maritime users with up to 80 percent of available time.

FOR MORE INFORMATION ON IDB
Circle 22 on Reader Service Card

Inmarsat

Inmarsat A3 FL, the first of a new generation of commercial mobile communications satellites, entered service on May 11. The satellite will serve the Indian Ocean Region at 64 degrees east longitude. It is reportedly eight times more powerful than its predecessor, the Inmarsat F1 Indian Ocean Region satellite, which now becomes a spare for the Inmarsat B satellite. Inmarsat expects to eventually comprise five satellites by the third quarter of 1997, and is reportedly expanding the availability and usefulness of global satellite communications by making possible lower cost communications with even smaller, more economical mobile and transportable terminals.

For more information on Inmarsat
Circle 27 on Reader Service Card

KDD

KDD will complete its global coverage of Inmarsat services by the end of 1996, when its Inmarsat A and C services are scheduled to be available in all four ocean regions. KDD will also be able to access KDD’s land base station anywhere on the world by entering ID number “001” for Inmarsat A service. KDD’s Inmarsat B and M services can already be used in any ocean region which has KDD’s KDD-3 satellite, which promises to serve maritime users with up to 80 percent of available time.

For more information on KDD
Circle 30 on Reader Service Card

IDO Maritime Network

IDO Maritime Network is a subsidiary of IDB Mobile Communications, providing digital voice, data transmission and digital messaging service to the maritime industry using small, low-cost, powerful communications with semi-directional antennas.

For more information on IDO
Circle 32 on Reader Service Card

PTT Telecom

PTT Telecom will reportedly complete the world’s first commercial two-way satellite communications service in the fourth quarter of 1996. The service will be available in all four ocean regions (POR and IOR).

For more information on PTT Telecom
Circle 34 on Reader Service Card

ORBCOMM

ORBCOMM is reportedly the world’s first commercial two-way satellite communications service. The service is available as a multi-constellation-based global communications service.

For more information on ORBCOMM
Circle 37 on Reader Service Card

PTT Telecom

PTT Telecom will reportedly complete the world’s first commercial two-way satellite communications service in the fourth quarter of 1996. The service will be available in all four ocean regions (POR and IOR).

For more information on PTT Telecom
Circle 38 on Reader Service Card

IN CRANE BARGES.

"Very little maintenance." Jim Sahl, a K30 Maintenance Service employee, says a K30 container is a tough cargo with two swing-gate engines. It also uses two 120-horsepower compressors sterilize the cargo.

"Two years old and the engines run with no problems." Smith likes the way even older three engines keep delivering the performance he needs. "The air conditioning system has been in service for two years, and they still work like new cars. They keep running. They give us a lot of plant work and they’re very reliable. We see them on most of our projects as well."
SatCom Review

SatCom Review allows you to call via any Inmarsat A, B, M telephone or any destination worldwide via various LEOs.

Circle 36 on Reader Service Card

**Seven Seas**

Seven Seas Communications provides satellite communications services to maritime and land mobile customers. The company provides Inmarsat services including Inmarsat A, B, and C services through its partnership with ZIB Radio Communications, owners and operators of coast earth stations.

For more information, circle 144. Reader Service Card

**Telecom Italia**

Telecom Italia is controlled by STET, which in turn is owned by the Italian Ministry of Post and Telecommunications for handling maritime communications, including installations, operation and maintenance.

**COMSAT Offers Cruise Lines**

COMSAT Corporation, a global provider of communications and entertainment services, provides satellite services for ship's business and all aspects of radio room operations.

For more information on COMSAT, circle 26. Reader Service Card

**Telenor**

Telenor has decided to restructure its Inmarsat activities and has reached an agreement in principle with NewEast Telemedia to create a joint venture to develop and provide satellite communications services.

For more information on Telenor, circle 33. Reader Service Card

**Teleglobe**

Teleglobe has decided to restructure its Inmarsat activities and has reached an agreement in principle with NewEast Telemedia to create a joint venture to develop and provide satellite communications services.

For more information on Teleglobe, circle 35. Reader Service Card

**Telstra**

Telstra Satellite Services has introduced its broadcast, data and high-speed services to cruise ships in the Pacific region. Telstra Satellite Services is a joint venture between Telstra Satellite and Telecommunications Corporation, a large Australian communications company.

For more information on Telstra, circle 37. Reader Service Card

**BIMCOM**

BIMCOM is a joint venture between Telespazio and BIMCOM Satellite Communications, a company that provides earth station services to maritime and land mobile customers.

For more information on BIMCOM, circle 39. Reader Service Card
Mackay Communications - The First Full-Service Marine Equipment and Communications Provider

Mackay Communications is proud to announce the addition of satellite air-time to our formidable list of services, making us the first full-service marine provider. The dependable quality you’ve come to expect from Mackay for over 100 successful years, can now be found when making Inmarsat A,B,M,C and AMSC calls.

For more information on our brand new satellite air-time services, or any other Mackay product or service, call Mackay at (919) 850-3000.
No one in satcom has so much experience at sea.

Ships at sea aren’t ordinary telecom customers. At Station 12®, we’ve known that for 90 years.

Since 1904, when our people sent their CQs from an old doghouse on the Dutch coast, sailors have staked everything on our reliability. First as Scheveningen Radio—and today as Station 12, one of the world’s top providers of satellite communications.

Simply use our worldwide “12” access code. You’ll get ultra-reliable phone, telex, fax and data services. Plus round-the-clock monitoring, so your calls get through fast. All at the affordable prices you need.

And there’s even more.

Including a free worldwide helpdesk staffed by real maritime experts. An ISO 9002 certificate. And a leading role in the Inmarsat quality workgroup.

So take a moment and compare Station 12 to your current satcom provider. Which would you rather have on board?

Station 12 satellite communications.

Extending your reach worldwide.

I want to know more about Station 12.

☐ Give me a call at the number below.

☐ Send me free information on Station 12 satcom services (Inmarsat-A, -B, -C, -M) and charges.

Name
Title
Company
Address
City State Postcode Country
Phone Fax

In the U.S., call us toll-free at PTT Telecom Netherlands: 1 800 111 6842.

Or fax this coupon to Station 12 Customer Services: +31 255 545 100.

Outside the U.S., call: +31 255 545 111. Or post this coupon to Station 12 Customer Services, PO Box 468, 1970 AL IJmuiden, The Netherlands.
Satellite Communications Review

— which represents more than 60 percent of the world’s gross tonnage. BIMCOM, with Mercury Communications Ltd., provides telecommunications and messaging services to the maritime industry. In 1993, Cable & Wireless PLC, the owner of Mercury, became a shareholder, giving BIMCOM the opportunity to increase coverage and add other C&W telecommunications products. BIMCOM offers international messaging (telex, fax, e-mail, EDI and X.400); Virtual Private Networks (VPN); gateways to internet via modems and in C, X, and Ku-band (4-17 GHz) frequencies.

For more information on BIMCOM
Circle 43 on Reader Service Card

Birgers Marinteknik
Birgers Marinteknik, Stockholm, Sweden, has developed a cost-effective antenna stabilization system, MAPS, based on an advanced nano-pulse tracking technique and real-time processing. MAPS works with the C, X, and Ku-band (4-17 GHz) frequencies.

For more information on Birgers Marinteknik
Circle 73 on Reader Service Card

BOATRACS
BOATRACS, Inc. is the U.S. marine market distributor of the OmniTRACS System, a satellite-based messaging system manufactured and marketed by CP Communications Inc. (CPCI) — a division of CruisePhone, Inc., a provider of cruise ship communications services — and an affiliate of Mobile Satellite Company (AMSC) MSAT service.

For more information on BOATRACS
Circle 30 on Reader Service Card

Commercial Satellite Systems Inc.
CSSI is the North American distributor of Inmarsat M Terminals. These products include the

For more information on Commercial Satellite Systems Inc.
Circle 50 on Reader Service Card

SP4600B Briarglen Terminal
SP4600M Maritime Terminal and SP4800T Fixed Terminal. The Alpha terminals are provided with voice, facsimile and data transmission capability as standard features. Alpha has also designed and built an optional Class II requirements data service. CSSI is also a provider of integrated C-Band and Fk-Band trailer-mounted, transportable and maritime systems. A recent product introduction is the CSS5200 Transportable C/Band communications system.

For more information on CSSI
Circle 44 on Reader Service Card

CP Communications, Inc.
CP Communications Inc. (CPCI) — a division of CruisePhone, Inc., a provider of cruise ship communications services — is a full-service mobile satellite communications company for commercial and recreational maritime markets, offering complete turnkey solutions from cellular telephone and telex to satellite-based messaging systems.

For more information on CP Communications
Circle 43 on Reader Service Card

Furuno
Furuno’s new Falcon 80 Satcom B system was developed for commercial and leisure private vessels, meeting stringent Class I requirements of GMDSS, as well as the Class II requirements for future phone and fax services at sea.

For more information on Furuno
Circle 47 on Reader Service Card

IN-SNEC
IN-SNEC is a designer and supplier of Inmarsat Satellite communications terminals for both land and sea applications. Both M and C terminals are available. The Create unit is suitable for GMDSS applications.

For more information on IN-SNEC
Circle 46 on Reader Service Card
Mail owners can now send and receive data, due to a new 2.4 kbps data option being offered by the company. The terminals offer a full range of voice, fax and data devices provided by Inmarsat M. Maganavox’s data option is type approved by Inmarsat for the MX3000 marine terminal and the MX2000 portable telephone. It reportedly provides real-time digital data transfer through the Inmarsat M satellite system, anywhere in the world.

The MX3000 Maganavox M is a briefcase satellite telephone that includes an internal power supply and replaceable battery pack.

For more information on Maganavox Circle 49 on Reader Service Card

OGM Communications

OGM Communications was created to provide solutions for the growing maritime communications market. OGM offers a wide range of mobile satellite communication equipment, including Inmarsat and terrestrial communications equipment, as well as complete licensing, commissioning and billing services. Inmarsat M, B and A services are provided worldwide.

For more information on OGM Circle 39 on Reader Service Card

OSN

O’Gara Satellite Networks (OSN) reportedly introduced the world’s smallest lightweight Inmarsat M terminal. The Compact-M weighs 5.5 lbs. and measures 11.3 x 6.8 x 2.8 ft. (3.4 x 2.1 x .8 m).

For more information on OSN Circle 40 on Reader Service Card

Philips Navigation AS

Philips offers marine and land-based satellite communications systems. The Safecom CMX and CM2 use Inmarsat C satellites and comply fully with GMDSS requirements. The Safecom CL2 is a land mobile Inmarsat C transceiver. The briefcase-sized Safecom MP weighs 6.4 lbs. and measures 13.8 x 8 x 2.9 ft. (3.4 x 2.1 x .8 m).

For more information on Philips Circle 41 on Reader Service Card

Scientific-Atlanta

Scientific-Atlanta’s Inmarsat M systems offer a single, two-way voice, fax and data satellite communications system for vessels 35 ft. (10.6 m) or longer. The single-channel Marlink-40 offers an active, stabilized antenna payload which reportedly provides increased call reliability and lower power consumption with automatic changeover to VHF in case of satellite failure. The Marlink Multi-M can support up to 16 simultaneous voice/fax calls. A complete range of Inmarsat B requirements, this system can be integrated with an Inmarsat B.
Inmarsat M Scansat-M, consisting
SKANTI AS
voice prompts, access control and
features include multiple language
credit card capability.

MariStar-M and MariStar Multi-M
SKANTI AS has introduced the
MARINE SOFTWARE
INTERNATIONAL
the US Navy and leading
concept to final fairing by
IMSA & CAD programs,
lines update while editing,
designing any hull,
and flexibility when
surfaces to assure fairness
NURBS
uses
Circle 24 on Reader Service Card
from Proteus Engineering
• 24 hour customer support and a help-desk.
• 24 hour communication in all Ocean Areas.
• A variety of ship-to-shore services via telex or text-telefax.
• Two-way messaging via BIMCOM Electronic Mail.
• Shore-to-ship messaging via telex or dial-up modem - with
Telia Mobilel AB, Maritime Telecom Services, P O Box 2004, S-421 02 V Frolunda
MARITEX offers the following features:
Discover the World of MARITEX
a computer controlled world-spanning MF/HF network for
maritime text communication - with outstanding qualities.
MARITEX. Non-GMDSS ships, too, very often carry the
single point access and optional Delivery Confirmation.

For more information on Skanti-AS
Circle 48 on Reader Service Card
Trimbkle
Trimbkle is a leader in GPS
satellite-based navigation, positioning
and communications data prod-
ets. The company holds patents
on many GPS technologies, and these products are sold worldwide
for diverse applications, including
marine navigation; helicopter, marine
vehicle tracking; vehicular and
marine GPS.

For more information on Trimbkle
Circle 45 on Reader Service Card
Watercom Appointed Dealer
For KVH Industries, Inc. has
appointed Watercom as a dealer for
its new TracVision stabilized
satellite antenna system. TracVision is an
actively stabilized antenna system
which keeps a 24 m. diameter Ka
fiber satellite antenna precisely
pointed at new high-powered
satellites. As the boat turns, pitchs
and rolls. TracVision senses the
boat’s movement and moves the
 antenna system. TracVision is an
integral part of the boat’s stabilizing
system. Single point access and optional
Delivery Confirmation.

For more information on Watercom
Circle 31 on Reader Service Card
Globe Wireless Announces
Indian Ocean Node
Globe Wireless has announced an
agreement with
IndusSat to establish an
RF radio node on the Australian
coast. The coastal station,
Perth Radio, will enhance the
coverage of the Global Radio Network
in the Indian Ocean and Far East.
"Perth Radio will improve our
coverage of the Indian Ocean and
Far East," said Dino Martins, general
manager of Globe Wireless. "It will
combine with our other new node,
Bengali Radio, to provide a wide
service to the southern Indian
Ocean and to the southern
continent. The coastal station,
Perth Radio will improve the
coverage of the Indian Ocean
and the Far East. The coastal station,
Perth Radio will improve our
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coverage of the Indian Ocean
and the Far East.

For more information on Globe Wireless
Circle 52 on Reader Service Card
SEA Introduces New
Inmarsat C Satellite
Communications System
SEA Inc. now offers the INMARSAT C satellite
communications system. In 3 days typically
you can establish a full marine satellite
communication system. The system
includes all necessary hardware and
software to provide the user with
uninterrupted satellite television
reception on a boat.

For more information on SEA Inc.
Circle 51 on Reader Service Card

For more information on KVH Industries, Inc.
Circle 50 on Reader Service Card

For more information on Trimble
Circle 49 on Reader Service Card

For more information on KVH Industries, Inc.
Circle 50 on Reader Service Card

For more information on Skanti-AS
Circle 48 on Reader Service Card

For more information on Trimble
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For more information on KVH Industries, Inc.
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For more information on KVH Industries, Inc.
Circle 50 on Reader Service Card

For more information on KVH Industries, Inc.
Circle 50 on Reader Service Card
Orders are listed alphabetically, by vessel type. Publisher is not responsible for errors or omissions. For additional information on this, or other ship market information, contact: FERLISHIP, Paseo De San Francisco De Sales, 8, 28003 Madrid, Spain, tel: +34 1 441 4138; fax: +34 1 441 4138.

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(Continued on page 81)
Alfa Laval LEO System Installed In Gulf Of Mexico

This LEO system for crude oil dehydration was installed in the Gulf of Mexico after careful testing by a major U.S. operator. The centrifuge in the center of the photograph completely replaces all dehydration equipment downstream of the free water knock-out tank to its right.

A LEO system for a nominal capacity of 60,000 BOPD weighs approximately 25 tons. A coalescer of an equivalent flow rate designed for 20-min. retention time would weigh approximately 160 tons.

For more information on Alfa Laval
Circle 98 on Reader Service Card

Owen-Short Marine Launches First Buoy Tender

Owen-Short Marine of Bayou La Batre, Ala., has launched the first of four self-propelled buoy tending barges for the U.S. Coast Guard (USCG). Upon delivery, the 64 x 24 x 7.3-ft. 7.3 x 2.1-m vessels will join the USCG fleet in the New Orleans district. Options for a fifth vessel were included in the contract.

Owen-Short Marine’s parent company — Dohrman Machine Production Inc. of West Point, Neb. — has received a U.S. Army Corps of Engineers contract for the fabrication and delivery of 12 Spillway Gates for the Mobile, Ala. district.

For more information on Owen-Short Marine
Circle 102 on Reader Service Card

MAN B&W Delivers L32/40-Type GenSets
To Danish Interest

MAN B&W Diesel, Halden has delivered a total of 5,700 GenSets to Odense Steel Shipyard Ltd. in Denmark for installation in the world's largest order of container vessels.

The GenSet is based on the MAN B&W Group’s L32/40 medium speed, four-stroke engine developed in Augsburg, Germany.

For more information on MAN B&W
Circle 12 on Reader Service Card

Caterpillar 3500 Series B Engines Gain Marine Society Type Approval

Caterpillar Engine Division announced that the Cat 3500 Series B marine engine has become the first unit-injected, electronically-controlled marine engine to receive marine society type approval from Lloyd's Register of Shipping and Bureau Veritas. Type approval was previously granted by the American Bureau of Shipping and Det Norske Veritas, and is pending with additional societies worldwide. The recent approval process focused on the electronic control system used by the Cat 3500 Series B engines, since type approval was granted primarily for the engine mechanical design, electronic control system capability, and emissions control, as well as increased output.

For more information on Caterpillar
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For more information on Caterpillar
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Maritime Reporter/Engineering News
### Principal Contracts Recorded, May 1996

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Maritime Reporter introduces MarineLink, its new Internet World Wide Web site and information resource. For more information, call (212) 477-4700 or surf to http://www.marinelink.com.

Atlantic Completes Trump Casino

Atlantic Marine Inc. of Jacksonville, Fla., has finished construction of Trump Casino, built for Trump Indiana, Inc., for operation Trump Hotel & Casino Resorts Inc. The triple deck gaming vessel was scheduled to begin operation in May on Lake Michigan in Gary, Ind.

Designed by Rodney E. Lay & Assoc., Inc. of Jacksonville, Fla., Trump Casino is powered by two Detroit Diesel 1,200-hp DDDE main engines. Two Detroit Diesel 1,360-kW generator sets provide electrical power. Bow and stern thrusters, each powered by a 530-hp DDEC engine, are also incorporated.

At 288 ft. 157 T. 35, Trump Casino has 17,000 sq. ft. of gaming space in its two main decks, accommodating 2,000 passengers. The interior was designed by Interior Design International and installed at Atlantic Marine.

Atlantic Marine, Inc., is a builder of custom-designed vessels for domestic and international markets. In recent years, the company has been a leader in the construction of gaming vessels. Trump Casino is the eleventh casino boat built by Atlantic.

For more information on Atlantic Marine
Circle 311 on Reader Service Card

Pathway Offers New Line of Fluoroelesterom Expansion Joints

Pathway Bellows has started manufacturing and shipping its new product line of fluoroelesterom expansion joints. Ultraflex Ev4 expansion joints are produced using computer controlled processes with a high level of quality control built into through each stage of manufacture. Traceability of materials is maintained from the beginning Screaming major assembly throughout the manufacturing process.

For more information on Pathway
Circle 97 on Reader Service Card

Rice Granted Patent Pending Status Of Speed Nozzle

Rice Propellers, located in the North Pacific coast of Mexico, is a major supplier of propellers and nozzles for U.S. shipyards and fishing fleets. The company has recently developed the Rice Speed Nozzle Design and the Skewed Kaplan Propeller. Rice has been granted the Patent Pending Status from the Patent and Trademark Office of the U.S. Department of Commerce.

The Rice Speed Nozzle is reportedly a completely new design. The inside and outside shells are chamfered and rounded. With these nozzles, users can reportedly obtain maximum thrust without losing free running speed.

In 1995, Rice Speed Nozzles were installed on 140 boats in the U.S.—mainly in the Gulf of Mexico and the East Coast. So far, in 1996, the nozzles have been installed on more than 80 boats.

For more information on Rice Propellers
Circle 92 on Reader Service Card

Maritime Reporter/Engineering News
Austal Delivers Ferry To China

Zeng Chen Yi Hao is the name of the latest ferry vessel completed and delivered this month by Austal Ships, western Australia, to its Chinese owners. The delivery also marks the twenty-sixth fast ferry built by the Australian vessel builder for Chinese owners. The delivery also marks the twenty-sixth fast ferry built by the Australian vessel builder for Chinese owners.

The vessel was built for the Zeng Cheng City Port Construction Development Co., and is to enter service on the Zeng Cheng-Zhuhai route, which connects the western coast of mainland China and Hong Kong.

The vessel's lightweight aluminum construction and twin diesel engines provide a fully loaded service speed of 24 knots.

Zeng Chen Yi Hao

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diesel engines, marine

design and construction.

Auxiliary engines MTU 10.3000,000 kW Z-drive Tug

Main engines MTU 12V 60, developing 1,980 kW at 1,940 rpm, with two ZF BU755 gearboxes. Propulsion is provided by twin MTU MT200 (1,900 kW) diesel engines developing 1,800 kW at 1,800 rpm, each driving KaMeWa jet through 2F 300F propellers. The vessel was built in the China Classification Society standards.

For more information from Austal Ship

Circle 314 on Reader Service Card

U.S. Yard Sought To Harbor, Convert 5 U.S. States

The U.S. has seen its dependence on foreign ships for its energy supplies expand. This is due to the shortage of U.S.-flagged vessels in the U.S. The shortage has been brought back by its owner, Marine Master Inc., which purchased the ship in 1996 and renamed it in honor of the Zdenka.

The Zdenka is now being built with three large ships, each one having a capacity of 800 passengers. The ship was designed to meet the needs of the U.S. market.

The vessel was built on the Port of Xin Tang in Zeng Cheng City Port Construction Development Co., and is to enter service on the Zeng Cheng-Zhuhai route, which connects the western coast of mainland China and Hong Kong.

The vessel's lightweight aluminum construction and twin diesel engines provide a fully loaded service speed of 24 knots.

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July, 1996

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The directory section is an editorial feature published in every issue for the convenience of the readers. It includes equipment, supplies, and services. A listing is provided, at no cost for one year of issue, up to a company with a catalog or a company who has an advertisement active in every issue of the magazine. A listing is only for the company's name and address. The directory section is not a complete listing of all companies that manufacture equipment, supplies, and services.
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Crane Consultants, 15301 First Ave S Seattle WA 98148
John W. Gilbert 8 Assoc., Inc., 199 State St., Boston, MA 02109
Ocean Motions Co., P.O. Box 130,  49 Shore Drive, Barrington, Rl 02806-0130
CDI Marine Co., 4040 Woodcock Dr., Suite 200, Jacksonville, FL 32207
Alan C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063
MGI International, 119-225 West 1st St., North Vancouver, B.C. CANADA
King Engineering Corp., P.O. Box 1228, Ann Arbor, Ml 48106
Midland Mtg. Corp., 7733 Gross Point Rd., Skokie IL 60076-0226
Del Gavio, 619 Industrial Rd., Carlstadt, NJ 07072
Scientific Marine Services, Inc., 101 State Pl Suite F, Escondido, CA 92029
Saab Marine Electronics AB, Box 13045, 402 51 Goteborg, SWEDEN
Marine Gears, P.O. Box 689, Greenville, Ml 38701
Maritech, Seacliff, Bay Road, Newmarket, NH 03857
MCA Engineers, Inc., 2960 Airway Ave., #A-103, Costa Mesa, CA 92626
IMSA 20 Ridgely Ave., Annapolis, MD 21401
Marine Management Systems Inc., 102 Hamilton Ave., Stamford CT 06902
Hydro-Alumunium, Vik Verk, N-5880 VIKISOGN, Norway
Insulations, Inc., Rt. 5, 12360 Leisure Road, Baton Rouge, LA 70807
Insulations, Inc., Rt. 5, 12360 Leisure Road, Baton Rouge, LA 70807
Hiller Systems, 3710 Lakeside Court, Mobile, AL 36693
OIL/WATER SEPARATORS
PRODUCTS/MARINE SERVICES
PLASTICS
PIPE FITTINGS/CUTTINGS/CONNECTING SYSTEMS
TIMSCO, P. O. Box 91360, Mobile AL 36691
World Trade Network, Ltd., 16920 28th Ave. N., Minneapolis, MN 55447
Siemens Electric Ltd., 1180 Courtneypark Rd., Mississauga, ONTARIO
American Industrial Plastics, 724 Fentress Blvd., Daytona Beach, FL 32114
ABB Industry Oy, P.O. Box 185, 00381 Helsinki, FINLAND
Aquamaster-Rauma Ltd., Box 220, SF-26101, Rauma, FINLAND
M, Rosenblatt & Son, Inc., 350 Broadway, New York, NY 10013 and 620 Fulsom St., Philadelphia
Karl Senner Inc., 25 W Third, Kenner LA 70062
MAN B&W Diesel GmbH, Stadtbachstrasse 1, D-86153 Augsburg 1 GERMANY
Predict/DLI, 253 Winslow Way West, Bainbridge Island, WA 98110
Royal Chemical, 2705 Concord Road, Belle Chasse, LA 70037
National Fluid Separators, 827 Hanley Industrial Ct St. Louis, MO 63144
Holset Engineering, Inc., 1320 Kemper Meadow, Ste. 500, Cincinnati, OH 45240
Fincantieri, Diesel Engines Div—GMT,  Bagnoli della Rosandra 334, Trieste, ITALY

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Cunningham Marine Hydraulics Co., 201 Harrison St., Hoboken, NJ 07030
Via Nova Engineering Solutions, Via E. Toti, 20, 34074 Monfalcone ITALY
Skipperliner Shipyards, 621 Park Plaza Dr, Dept 21, LaCrosse Wl 54601
Thomas Marine, 37 Bransford Street, Patchogue, NY 11772
Chris-Marine AB, P.O. Box 9025, S-2000 39, Malmo, SWEDEN
Atlantic Marine, Inc.,P.O. Box 3202, Mobile, AL 36652
Astilleros Espanoles, S..A. Ochandiano, 14-16 28023 El Plantio SPAIN
Stidd Systems, Inc., 220 Carpenter St., Greenport, NY 11944
Kvaerner Masa-Yards Oy, Box 132, SF-00151, Helsinki, FINLAND
Capt. E.S. Geary, P.O. Box 1246, Fajardo, Puerto Rico 00738
American Mobile Satellite Corp., 10802 Parkridge Blvd., Reston, VA 22091
Mackay Communications, 2721 Discovery Dr., Raleigh, N.C. 27604-1851
Scale Reproductions, 16346 County Road 13, Fairhope, AL 36532
Singapore Telecom, 15 Hill Street, Telephone House, 2nd Storey, Singapore 0617
Donjon Marine, 1250 Liberty Ave., Hillside, NJ 07205
RTF Mfg., RD #1 Route 66, Hudson, NY 12534
Kvaerner Masa-Yards Oy, Box 132, SF-00151, Helsinki, FINLAND
Capt. E.S. Geary, P.O. Box 1246, Fajardo, Puerto Rico 00738
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The listings above are an editorial service provided for the convenience of our readers.
The Barreras yard has also signed contracts with Spanish owners Almacenes y Navegaciones Almefin and French owner Saupiquet for the construction of four additional fishing vessels — purse seiners ranging from 344.4 ft. to 354.3 ft. (105 to 108 m) in length. These vessels will reportedly be the largest of their type in existence, and one ship will contain a complete factory, with the capability to complete all the steps of freezing and producing tuna fillets. Bureau Veritas has been named as the classifying society by Furuno.

Caterpillar, propellers by Navalips SA, gearboxes by Renk Tacke and navigational systems by Furuno.

Willem Pot has invested in a software program to assist in anchoring decisions. This program is ideally suitable for checking whether the anchoring program will be supplied to you free of obligation.

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This report, compiled by Shipping Intelligence, Inc., a New York maritime consulting firm, tracks sale prices of secondhand bulk carriers and tankers. For more information, call (212) 997-0966.

<table>
<thead>
<tr>
<th>Reported Name</th>
<th>Type</th>
<th>Vessel</th>
<th>DWT</th>
<th>Year</th>
<th>Sale</th>
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<tr>
<td>5/20/96 Caribou</td>
<td>Bulker</td>
<td>85,410</td>
<td>74</td>
<td>1996</td>
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<tr>
<td>6/7/96 Reliable</td>
<td>Bulker</td>
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<tr>
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<td>Tanker</td>
<td>30,289</td>
<td>71</td>
<td>1996</td>
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<tr>
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<td>Tanker</td>
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<td>77</td>
<td>1996</td>
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<tr>
<td>5/20/96 Kithinos</td>
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<td>71</td>
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</tr>
<tr>
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<td>Tanker</td>
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<td>1996</td>
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<tr>
<td>6/3/96 William</td>
<td>Bulker</td>
<td>15,328</td>
<td>78</td>
<td>1996</td>
<td>$3.3</td>
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<tr>
<td>5/28/96 Meltemi</td>
<td>Tanker</td>
<td>36,981</td>
<td>76</td>
<td>1996</td>
<td>$5</td>
</tr>
<tr>
<td>6/7/96 Reliable</td>
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<tr>
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<td>78</td>
<td>1996</td>
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</tr>
<tr>
<td>5/28/96 Valeric</td>
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<tr>
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<td>71</td>
<td>1996</td>
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<td>16,540</td>
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<td>85,410</td>
<td>74</td>
<td>1996</td>
<td>$4.6</td>
</tr>
</tbody>
</table>

Asfor Ailsa Craig, the tanker 240,260 DWT of 1976, was sold for $8.6 million on May 20, 1996.

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