

MARINE LOG

Reporting on marine business and technology worldwide

MARINE LOG

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Reporting on Marine Business and Technology

MARINE LOG

NOVEMBER 1996

**CAD/CAM/CIM:
Taking the next STEP**

OFFSHORE
DEEPWATER BOOM HAS
GULF YARDS BUSTLING

**WORKBOAT
SHOW
PREVIEW**



This month's cover shows the offshore rig *Ocean Quest* at Texas Drydock, Inc. as it nears completion of upgrading for deeper water operations (p. 25)

The first post-panamax cruise ship, *Carnival Destiny*, was delivered last month (p. 53)



25 As OSV orders roll in, potential for rig newbuilds is growing

With Gulf of Mexico offshore activity continuing to accelerate, U.S. yards have orders on the books for an estimated 40 offshore service vessels. Meanwhile, rig upgrade activity has reached a level where few rigs are available for conversion and there are prospects for orders for a broad range of other floating equipment

PLUS: Aker-Omega introduces a "fab friendly" FPS design (p.26)

41 CAD/CAM/CIM: taking the next STEP

Computerized ship design and production systems are being used by more shipyards and their capabilities are increasing. But one problem lies in transferring data between different programs, different generations of the same program and different platforms. That's where STEP enters the picture

53 Cruising enters the post-panamax era

The *Carnival Destiny*, delivered last month, is the first cruise ship that's too wide for the Panama Canal. Ships of this size have been designed for a U.S. market that will hit 4.6 million passengers by the end of this year, but other markets call for other types of cruise vessel

61 Preview: International Workboat Show

This year's show, being held at the Ernest M. Morial Convention Center, New Orleans, December 5-7, 1996, promises to be the most upbeat in more than a decade

DEPARTMENTS

- 1 Editorial
- 5 Watching Washington
Questions as MSP sets sail. FMC penalties set to rise.
- 7 Marine Update
Crisis looming in ship scrapping. Tougher shipboard labor conventions. Halter Marine lists on AMEX. OECD shipyard deal on hold. Ship managers plead for administration uniformity on ISM. New COFR facility.
- 12 Offshore Update
Conoco and Reading & Bates joint venture orders a giant drill ship. Rowan to build second and third Enhanced Gorilla class jack-ups. Seacor unveils new generation platform supply boat.
- 14 Coastal & Inland Update
Halter Marine building tractor tugs and towboats. Bisso busy with new vessel and salvage operations. Marco building tractor tug for Hawaii. Northwind offers SAFE boats. New Washington ferry service under study. PLUS: Coastal and Inland news in brief.
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- The Green Issue
- Innovative Marine Product Awards
- Deck Machinery

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MARINE LOG

OCTOBER 1996

FERRY DEMAND SPEEDS AHEAD



**THE TRUTH ABOUT
ANTIFOULING**

**ATLANTIC COAST
MARINE INDUSTRY**

**DESIGN FIX DEMANDED
FOR TILTING TANKERS**



FBM Tricat design, powered by Solar gas turbines is being built under license by new Pequot River Shipworks in New London, Conn., one of several U.S. yards offering established international designs to meet a growing demand for fast, high passenger capacity ferries capable of open-water operations

- 21 Demand for ferries speeds ahead**
Operators are looking for higher speed, larger passenger capacities and better open-water capabilities, prompting more U.S. yards to take licenses for established international high speed designs
- 31 The truth about antifoulings**
According to a report presented to IMO's influential Marine Environmental Protection Committee, tin-free "green" antifoulings still don't offer quite the same bang for the buck as self-polishing TBT copolymer paints—which actually deliver sizeable environmental benefits of their own
PLUS: Are bugs eating some double-hulled tankers? p. 31; Chemical tanker recoats two tanks with advanced coating, p. 32; Waterjetting: Pressure is not the only consideration, p. 35
- 40 Busy times at Atlantic yards**
New construction and repair contracts are keeping business humming at many yards along the U.S. Atlantic seaboard
- 47 Offshore gaming grows as demand for riverboat casinos slows**
Though a few orders for riverboat casinos are still being placed, the offshore day cruise market now seems to generate more business for gaming boat builders and designers
- 54 IMO moves on tilting tankers**
An IMO working group is proposing a design solution to the intact stability problems of certain double hull tankers

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- 7 Watching Washington**
U.S. ratification of OECD shipbuilding agreement dead—at least until the next Congress. MSP is passed ... and so is Coast Guard Authorization Bill
- 9 Marine Update**
Wartsila Diesel, New Sulzer Diesel and Grandi Motori operations to be joined. First U.S. Navy "Smart Ship" incorporates Sperry Marine IBS to cut manning. MARITECH awards focus on tankers.
- 13 Offshore Update**

- Shell in deepwater drilling Spar deal. Two more Seacor AH/TS orders for Halter Marine. Supply boat backlog builds at Halter. McDermott wins design and fabrication contract for Texaco compliant tower. DIAB and TBS team to develop lightweight offshore modular housing units
- 15 Coastal & Inland**
Westport delivers fiberglass passenger vessel. Marinette launches its second Keeper class coastal buoy tender. Dejong & Lebet designs dinner boat. Bisso Marine introduces Versatruss.
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- 72 Opinion:** Joseph E.M. Hughes, Chairman and CEO, Shipowners Claims Bureau, Inc., Manager, The American Club, New York

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- **Cruise Ships: The Next Generation**
- **Offshore Rebound Opens New Opportunities for U.S. Shipyards**
- **International Workboat Show Preview**

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MARINE LOG

SEPTEMBER 1996

Electronics

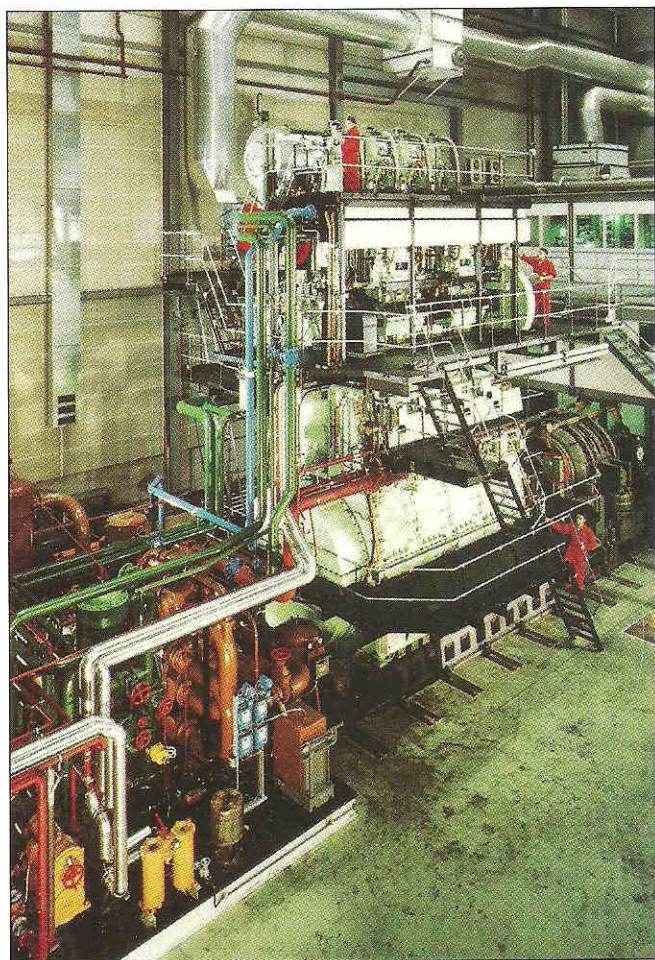
**SNAME & SMM
SHOW PREVIEWS**

**Pacific Northwest
Marine Industry**

A detailed photograph of a marine engine room. The scene is filled with a complex network of pipes, valves, and machinery. In the foreground, there are several large yellow cylindrical components. The background shows a multi-level structure with railings and a person in a red uniform standing on an upper level. The lighting is bright, highlighting the metallic surfaces and the intricate layout of the engine compartment.

DIESEL

**RESEARCH GOALS:
MORE POWER
LOWER EMISSIONS**



ON THE COVER: Facilities at New Sulzer Diesel's Technology Center in Winterthur, Switzerland, include this 4RTA58T research engine

27 Propulsion: More power, lower emissions

Market trends have led to the development of the world's most powerful diesel engines. Meanwhile, manufacturers of medium and high speed diesels are also offering engines with higher ratings and the focus of R&D is increasingly on emissions reduction. **PLUS:** Specifying propulsion plant to meet service conditions, (p. 27); Germany's CLEAN R&D program (p.29); Controls for electronic engines, (p. 34); Propeller selection software, (p. 38); Fast ferries open door to more gas turbine applications, (p.42), New waterjet control technology for fast ferries, (p.44)

49 Electronics: When regulation lags innovation

Regulators are having trouble keeping pace with the progress of marine electronics innovation

62 Pacific Northwest: High hopes, varied workloads

Yards and design firms in the Northwest are involved with vessels ranging from super ferries through futuristic gaming boats to barges and utility boats

72 SNAME returns to New York

SNAME's Annual Meeting and International Maritime Exhibition is back in the Big Apple, October 2-5

79 U.S. on center stage at SMM

The U.S. is the partner country at Europe's largest marine exhibition in Hamburg, Germany, October 1-5

88 Portable tank gauging benefits

New generation portable tank gauging equipment brings time and labor savings and other advantages

90 Chinese shipbuilding: A view from Japan

A Japanese assessment of Chinese shipbuilding finds that profits can be paper-thin

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5 Watching Washington

Breaux attempts an OECD rescue

7 Marine Update

First Double Eagle nears completion. Atlantic converts tanker to asphalt carrier. Brighter tanker spot rates ahead? Alameda yard installs automated plate cutter. Stena goes to Finnyards for four more cats.

10 Offshore Update

Trinity will hang on to most of Halter, for now. Semisub upgrade

brings big thruster order for Ulstein. Aker-Omega emphasizes deepwater. Trico to build SWATH crewboat.

15 Coastal & Inland

Halter designing E-cat. Tippet refurbishes Seattle fireboat. Seacraft completes dive yacht. Seabourn Cruises expands fleet. Alaska Dive Boats orders third Nichols cat. Willard delivers RIB. MarAd funding high-speed craft.

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116 Opinion: Tim Colton, president, Colton & Co.

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EXIM 1996

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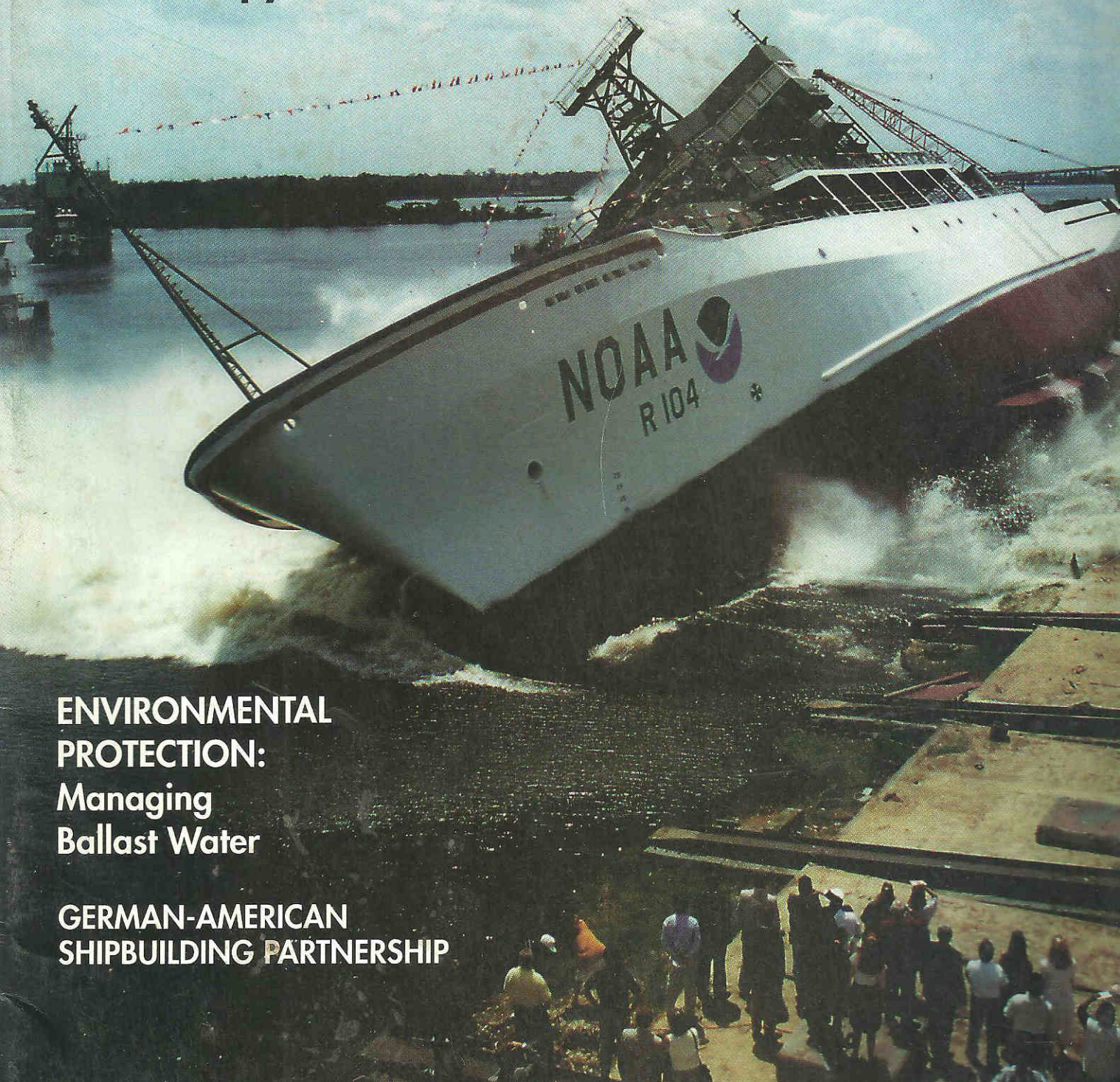
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AUGUST 1996

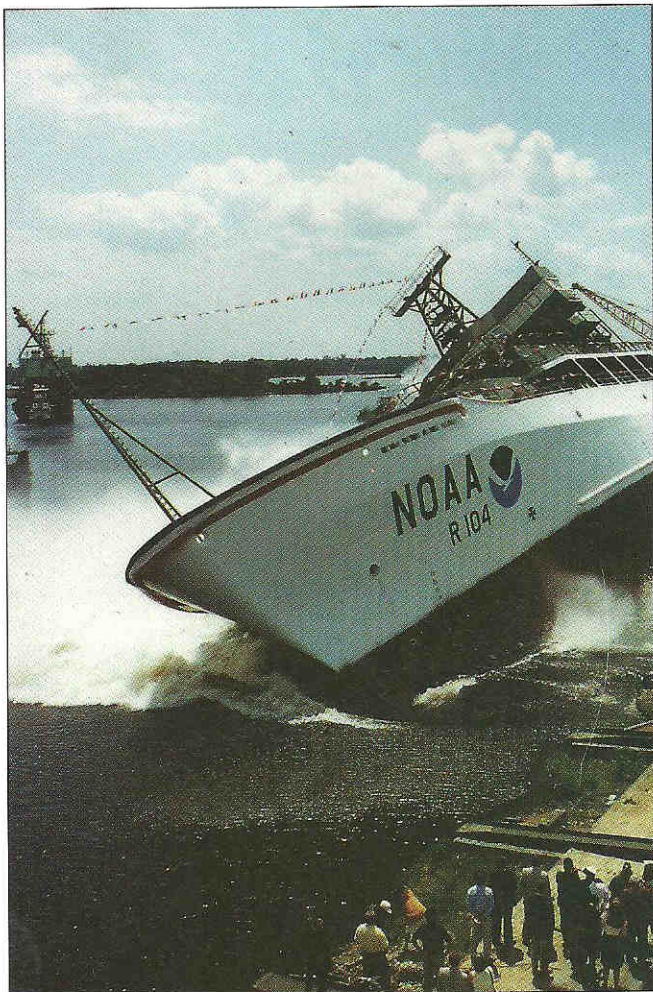
U.S. MARINE DIRECTORY

Shipyards, Vessel Owners & Operators



**ENVIRONMENTAL
PROTECTION:**
Managing
Ballast Water

**GERMAN-AMERICAN
SHIPBUILDING PARTNERSHIP**



ON THE COVER: Recently launched by Trinity Marine member Halter Marine Inc., the oceanographic research ship *Ronald H. Brown* will join the NOAA fleet in August 1997

15 On the international environmental agenda: Garbage, ballast water and engine emissions

When IMO's influential Marine Environmental Protection Committee met in London last week, it made significant progress on a new requirement for ships to carry an approved manual dealing with garbage disposal, got nearer agreement on limitations on sulfur in fuel and took another look at ways to prevent "aquatic nuisance" organisms from hitchhiking around the world in ships' ballast tanks.

38 German-American shipbuilding partnership

As American shipbuilders start booking commercial orders again, German marine equipment suppliers are hoping to play a key role in supplying them with world-class, internationally-recognized products and systems

U.S. MARINE DIRECTORY LISTINGS

22 U.S.-based shipowners

Names, flags, capacity, horsepower and year of build of oceangoing merchant vessels of 500 gt and above owned or controlled by U.S. entities, listed by owning company.

46 U.S.-based ship operators

Alphabetical listing of U.S.-based operators of oceangoing vessels of 500 gt and above, showing number of vessels operated

52 U.S. shipyards

Alphabetical listing of U.S. shipbuilding and repair yards with details of capabilities, labor force and key management personnel

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5 Watching Washington

Parting shot from Schiavo muddies waters of MSP debate. Coast Guard set to crack down on sub-standard tank barges? AIMS becomes the U.S. Chamber of Shipping.

7 Marine Update

Rhode Island legislature passes controversial spill bill. Carnival orders two ships for HAL. Sonat

goes to AESA for largest drill ship ever. Drewry sees "fundamental upheaval" possible in market for large bulkers. Paris MOU countries detain more ships.

10 Coastal, Inland & Offshore

Seacor orders new-generation AHTS from Trinity. Mashantucket Pequots open ferry building yard. Passenger version of M-10 hovercraft

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- Pacific Northwest Marine Industry

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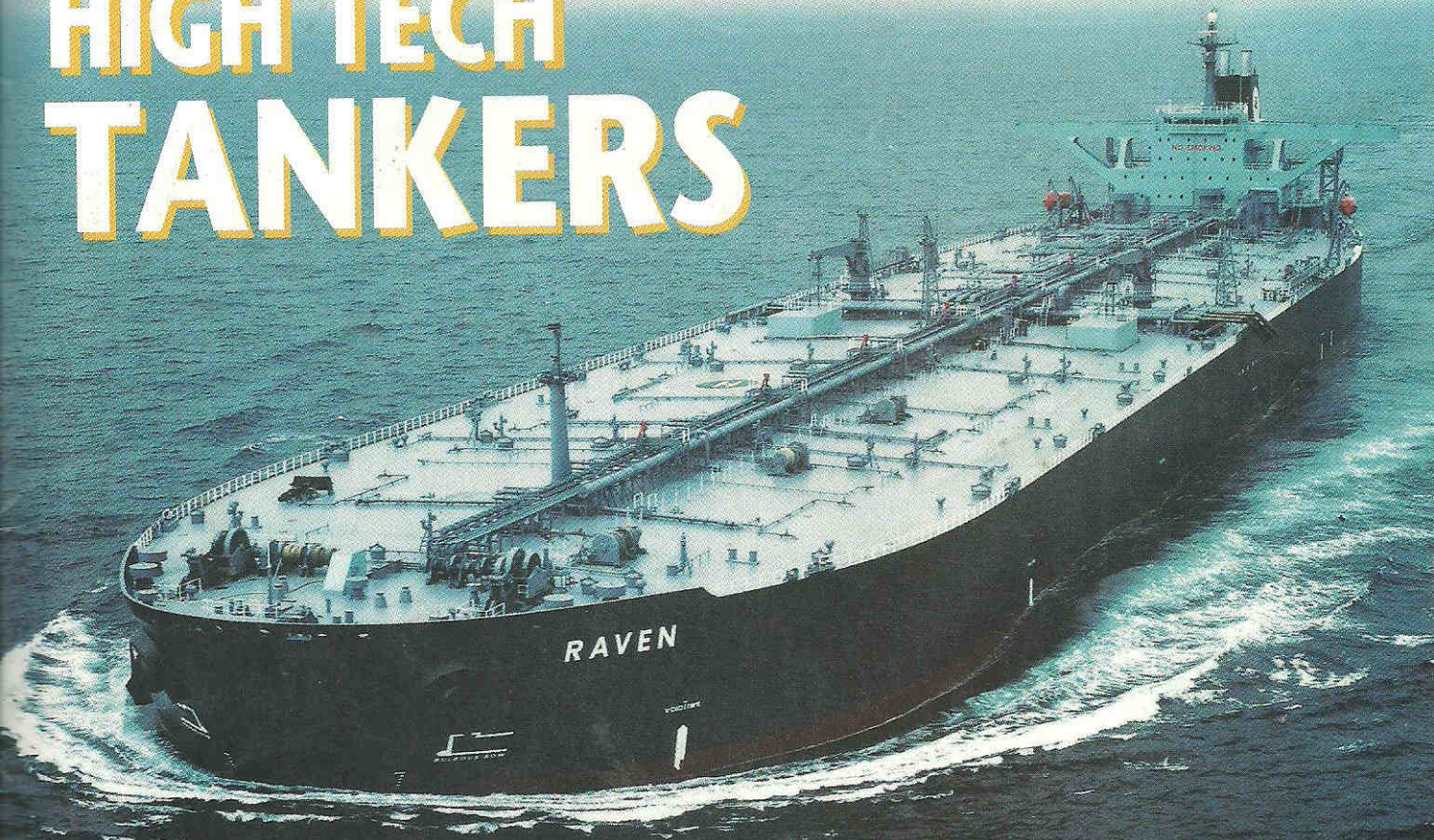
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MARINE LOG

JULY 1996

HIGH CLASS
OWNERS
OPT FOR

HIGH TECH TANKERS



RENEWED OFFSHORE ACTION BOOSTS
GULF COAST MARINE INDUSTRY



ON THE COVER: Mobil's *Raven* is an example of the type of advanced double hull tonnage being delivered to leading owners by world class shipyards



SPECIAL REPORT

U.S. GULF COAST MARINE INDUSTRIES

The Gulf of Mexico is again the center stage of world offshore activity and shipyards are already feeling the benefits

18 Building tankers for the post-OPA '90 era

Though newbuilding prices remain soft, tanker designs are becoming more complex

29 Time for a fresh look at OSRO classification?

Rear Admiral Joel D. Sipes USCG (Ret.) argues that safeguards and incentives are needed to foster development of a viable oil spill response industry over the long haul

33 Contaz units selected for Danish double-ended ferries



Azimuthing propulsors with contra-rotating propellers allow two train/ auto ferries to have an optimized hullform that promise to deliver fuel and other savings

36 Assessing future barge demand

An analysis of the age profile of the Mississippi system barge fleet points to the potential for further newbuilding orders

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7 Watching Washington

Congress takes another look at OPA. OECD anti-subsidy agreement suspense continues

9 Marine Update

New cruise ship from Kværner-Masa. Big new Keppel dry dock starts operations. Optional modules for Fantasy class cargo ships. More powerful Cats

13 Coastal, Inland & Offshore

Bay Fabrication modernizes ferry. Boston excursion boat. New dinner cruiser. SeaArk delivers fire-boat

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64 Opinion Edward W. Repa:

Networking the key to a successful OSRO program

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- Environmental Regulation Updates

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MARINE LOG

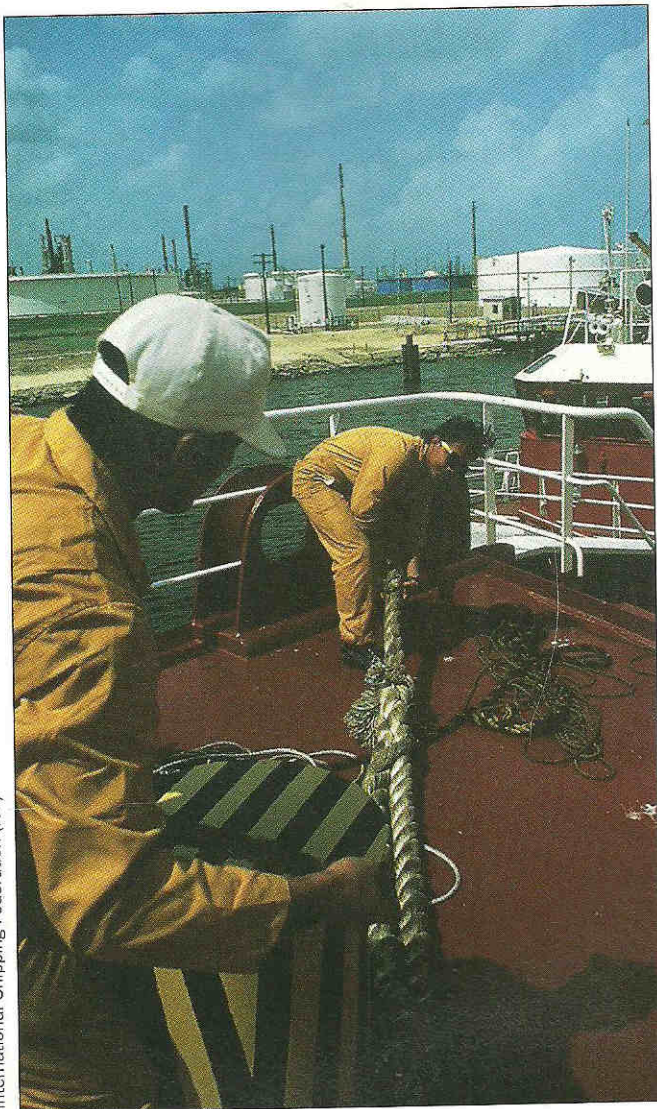
JUNE 1996

55th Annual YEARBOOK & MARINE REVIEW

FACTS & FORECASTS



Offshore
Inland Waterways
Cruise Market
Technology
Casino Boats
U.S. & World Shipping
Shipbuilding & Repair



International Shipping Federation (ISF)

ON THE COVER: As new regulations bite, human element issues will be among the most important facing shipowners in the months ahead. (p. 19)

- 19 Alliances, human factors and flags**
For shipowners, the big issues ahead center on alliances between lines and the impact of tougher regulations—particularly relating to crewing
- 33 Preserving the Navy building base**
America's specialist warship yards must keep busied until the Navy shops for a new generation of ships
- 39 U.S. yards' commercial ship backlog starts to build**
With their first commercial orders on the books, American yards are hungry for more
- 45 Asia's gain is Europe's pain**
Soft prices and rising costs are hurting shipbuilders worldwide, though European yards are hurting most
- 55 Offshore: The move into deeper GOM waters gets started**
A break on royalties in the U.S. Gulf of Mexico is persuading more oil companies beyond the 800 m barrier
- 60 Cruising is still a growth market**
Seven million people annually are predicted to cruise from North American ports by the year 2000
- 62 Ferry operators look for speed**
Established designs are winning out as new high speed routes open up
- 64 Barge fleet still rebuilding**
Replacement of elderly Mississippi system barges is continuing at a steady pace
- 66 Casino boat growth stabilizes**
Fewer new states are opening up for riverboat gaming, but offshore operations are growing
- 68 Technology: A new approach to design and in-service maintenance**
Classification societies are offering owners and designers sophisticated new tools

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5 Watching Washington

Coast Guard targets not-so-classy societies. Pressures mount to sabotage cabotage. Down to the wire on OECD anti-subsidy agreement.

7 Marine Update

Casualty figures rose in first quarter. Avondale launches AHL tanker. Wärtsilä Diesel develops big new engine. Telstra expands services. New role for *USS Inchon*. Independents now control 72% of tanker fleet.

11 Coastal, Inland & Offshore

Atlantic Marine busy with Indiana gaming boats. Aker completing upgrades on two MODUs. Delaware River & Bay Authority receives improved cruise-like ferry. Elliott Bay wins contract for Spirit of Endeavour. Trinity completes modifications to President riverboat. Gladding-Hearn set to deliver new Fire Island ferry. Bisso Marine salvages offshore tug.

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- TANKER TECHNOLOGY

Reporting on Marine Business and Technology

MARINE LOG

MAY 1996

PROPELLERS &
THRUSTERS

U.S. MARINE
INDUSTRY
EXPORTS

Affordable **BOATS**

Standard utility designs can adapt
to many duties

Long-lasting **COATS**

The secret: surface preparation
...and surface tolerance



Cover photo: Kvichak Marine Industries, Seattle, delivered this 34 ft vessel for fast-response duties with Clean Rivers Cooperative of Portland, Ore. (p. 41)



One of a pair of 1 m diameter CLT propeller units fitted to the 34 knot hydrofoil *Barracuda*. Owner Trasmediterranea now intends fitting CLTs to its other hydrofoils (p. 27)

17 Coatings and surface preparation

The role of coatings in preventing corrosion is more crucial than ever. Meantime, coatings manufacturers are devising new means of assessing life cycle costs, surface-tolerant paints that can be applied to hydro-blasted surfaces and shop primers that promise to meet shipbuilders' prayers

27 In pursuit of the "perfect" propulsion solution

Powerful computer programs are helping designers of propellers and thrusters nearer to the goal of optimal efficiency

33 Taking U.S. marine equipment into world markets

Though exporting may be new to some American vendors, many firms have long ago realized that the commercial marine market is a global one

41 Utility boats: Standardized workhorses adapt to many duties

Demand for utility boats is being helped along by orders for environmental protection vessels

47 Gas turbines for new fast ferries

Two 76-m ferries will become the first in their power range to use gas turbines

50 SMATCO develops mega winch

A double drum anchor handling winch delivers a 2,000,000 lb line pull

52 Ship repair market is set to grow

A report on *MARINE LOG's* annual Ship Repair & Marine Maintenance conference and trade show, held in Houston

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7 Watching Washington

OECD deal legislation in a Congressional time squeeze. ANS export tankers face environmental constraints.

8 Marine Update

Outstanding year for ABS in 1995. Eleven projects selected for FY'96 MARITECH backing. INTERTANKO study looks for improvement in U.S. port and terminal safety.

11 Coastal, Inland & Offshore

E.N. Bisso & Son christens Trinity-built tugs. Western Geophysical receives survey craft. Cruise-to-nowhere vessel retrofit at Bender. Gladding-Hearn delivers whale-watcher. Freeport delivers transporter boat. SkipperLiner completes entertainment cruiser

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ANNUAL YEARBOOK ISSUE:
FACTS AND FORECASTS

Reporting on Marine Business and Technology

MARINE LOG

APRIL 1996

OFFSHORE

Good times in the Gulf of Mexico



CLEAN-UP

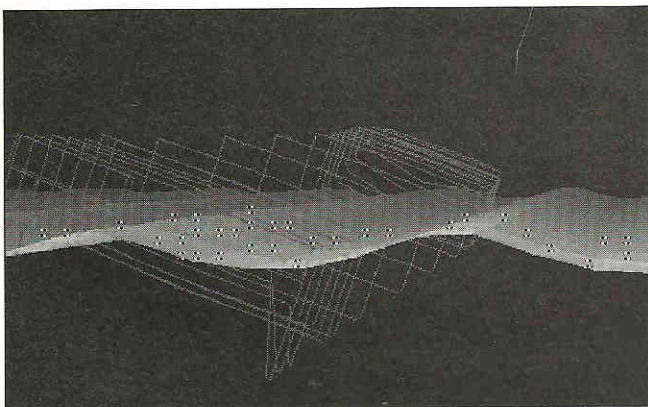
The spills go on, the rules change

SCANDINAVIA:
Providing U.S. shipbuilding with
world-class technology

OTC HIGHLIGHTS



On our cover: Jack-up *Gulftide* was converted into MOPU in just 122 days to meet a gas delivery deadline. The trend to recycle elderly drilling units into production units is keeping rig market tight in U.S. Gulf and worldwide (p 17)



Software from Ocean Motions was used following recent oil barge grounding. Spate of recent spills has refocused attention on spill clean-up regulation (p.23)

- 17 Strong drilling demand as Gulf offshore industry rebounds**
Rig utilization rates are at their highest in a dozen years, with strong signs that they will stay that way for some time
- 23 Spate of spills refocuses attention on response regulations**
Legislators are eyeing oil transportation again, just as the final elements of the OPA '90 regulatory regime are falling into place
- 30 More additions to Europe's fast ferry fleet**
New generation vessels from Sea Containers and Catamaran Lines include both monohulls and catamarans with speeds reaching near 40 knots
- 33 Roundtable: Changes, challenges and trends in casino boat design**
MARINE LOG's discussion with leading naval architects and interior designers reveals the behind-the-scenes work in creating a fun and exciting gaming atmosphere

IN THIS ISSUE



Special Supplement NORDIC MARINE TECHNOLOGY

Scandinavian and Finnish suppliers are used to meeting the needs of the world's most demanding shipowners—and they're very ready to partner U.S. shipbuilders in selling ships to the world market

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First victory for OECD shipbuilding agreement measure. Hopes of action on U.S.-flag subsidy program.
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Tenneco to spin-off Newport News. Study pinpoints where U.S. yards still lag. First steel cut for 104,000 gt cruise liner. Cruise safety task force reports. New USMMA program.
- 11 Coastal, Inland & Offshore**
Florida DOT receives new ferry. Todco wins order for Washburn & Doughty vessel. Federal funds help continue Missouri ferry service. Alaskan tourist operations expand. Halter Marine completes high horsepower towboat.
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- Propellers, waterjet and thrusters
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Reporting on Marine Business and Technology

MARINE LOG

MARCH 1996



**MARINE
COMMUNICATIONS:**
More capabilities at
lower cost

SHOW PREVIEW:
AMERICAN
INTERNATIONAL
SHIPBUILDING EXPO,
New Orleans

SHIP REPAIR

**DEMAND IS HEALTHY, BUT
COMPETITION STAYS HOT**



On our cover: Repairs to the *Alexia* at Bender Shipbuilding & Repair, Mobile, Alabama (p. 21)



U.S. towboat operators have been upgrading their fleets by rebuilding existing boats. But newbuilding orders could be just around the corner (p.67)

- 21 U.S. ship repairers look worldwide**
Competitive labor rates and a soft dollar are helping American yards win more international business
- 31 World repair yards keep busy**
A tougher regulatory climate means that shipowners are spending more on R&M. But worldwide repair capacity is growing, increasing competitive pressures
- 47 Taking the sludge for a spin**
Effective centrifugal separation is a key element in treating today's heavy fuels
- 56 Exploring synthetic lubes**
Western Geophysical has switched to synthetic lubricants for the compressors that power the air guns used in seismic exploration
- 58 Rethinking communications**
Impending regulatory changes are prompting shipowners to take a new look at their communications links
- 67 Latin boost for towboat builders**
Latin American business could help U.S. towboat builders until domestic owners order new boats
- 72 Vapor control and overspill protection with a future**
Fitting equipment that meets only current OPA '90 requirements could prove short-sighted
- 74 Interview: Corrado Antonini**
Fincantieri's CEO talks about cruising and cruise ships
- 78 Shipbuilding show in N.O.**
A preview of the American International Shipbuilding Exposition being held in New Orleans, April 11-13
- 84 Ship Repair & Marine Maintenance '96**
A look at what will be on show at this year's trade show in Houston, March 28 & 29

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A return visit to OPA may be in the cards. Legal challenges on NRDA.

7 Marine Update

Five more Double Eagles ordered. World's first 6,000 TEU container-ship. Problems for Bremer Vulkan. Germanischer Lloyd starts bulker tests. MAN B&W extends MC engine program. Ship Managers' group opens its doors wider.

13 Coastal, Inland & Offshore

Halter Marine launches oceanographic ship. Washington State

receives proposals for ferries.

Gladding-Hearn completes high-speed cat. AlliedSignal to fit *Victoria Clipper IV* with TF40. RTK building passenger ferries. U.S.C.G. and PVA sign safety agreement. Kvichak delivers bowpicker. ACCL orders *Grande Prince*. Intermarine delivers fourth minehunter.

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- Casino boat interior design roundtable
- Scandinavian supplement

Reporting on Marine Business and Technology

MARINE LOG

FEBRUARY 1996

NAVY SHIPBUILDING
Coping with the cuts

MARINE ELECTRONICS
Regulations lag
technology



CRUISING

BIG FLEETS BET ON BIG SHIPS



On our cover: Celebrity Cruises' latest addition, 1,778 passenger *Century*, is the first in a series of three new vessels under construction for the cruise line (p. 28)



Titan Maritime Industries performs salvage operation on containership *Sabine D* in Kiel Canal (p. 7)

21 Cruise market trends: Muscle counts in tough times

Faced with a dip in demand and a spurt in capacity, the North American cruise industry is set for a shake-out that favors big fleets

22 What's ahead for the cruise industry?

A roundtable discussion with industry leaders looks at how the industry is positioning itself to come through a market dip

28 Century: Cruise ship profile

A 70,606 gt, 1,778 passenger cruise ship joins the Celebrity Cruises fleet

31 Navy shipbuilders battle against the "bow wave"

Sometime after 2001, the U.S. Navy will be in the market for about a dozen ships annually. The challenge for America's warship builders is how to get to there from here

37 U.S. warship yards go for a slice of the FMS pie

Some American shipyards see worthwhile opportunities in the Foreign Military Sales market

43 Owners opt for advanced electronics

The latest generation of marine electronics systems promise the shipowner significant advantages—and often further enhancements are simply a matter of downloading new software

52 African Star 2: World's smallest containership?

With a box capacity of just 6 TEU, this 210 dwt workhorse, based on a Trinity Marine crewboat design, promises to open up a new era of reliable freight delivery in parts of Africa

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5 Watching Washington

Budget row sidelines maritime issues. Action in sight on MSP. OECD opponents outflanked?

7 Marine Update

Spectacular salvage by Titan. Ups and downs in U.S. commercial orderbook. Holland America pioneers simulator-based training. OECD study focuses on substandard shipowners. Record-breaking year for AESA. Tougher IACS requirements for bulkers.

12 Coastal, Inland & Offshore

Bay Transportation receives two tanker escort tugs. ACBL launches South American barge service. Greek cat building. Tidewater plans fleet expansion and terminal modernization. Gulf Coast yard opens with Coast Guard contract. Bisso sets production deck. Pollution control craft delivered to Malta.

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JANUARY 1996

DISTINCTIVE PASSENGER VESSELS



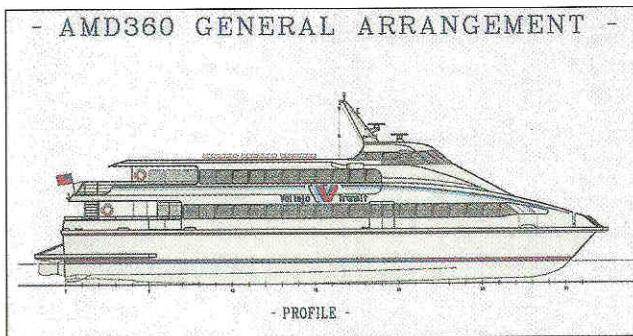
TITLE XI SPURS
U.S. SHIPYARD
BOUNCEBACK

HIGH SPEED CRAFT

PVA SHOW PREVIEW



On our cover: *Kanesville Queen*, recently delivered by Atlantic Marine, is among vessels featured in this year's *MARINE LOG* Portfolio of Distinctive Passenger Vessels



The AMD360 design from Advanced Multi-Hull Design will be used for the City of Vallejo's two new ferries (p. 37)

15 Title XI powers U.S. yards back into the world market

U.S. shipyards have started to build up a creditable back log of orders for commercial ships. Now the challenge is to retain a competitive edge when new OECD rules on subsidies take effect

25 Distinctive Passenger Vessels

MARINE LOG's Annual Portfolio of distinctive passenger boats delivered in the past year:

- American Queen & Casino Rouge* (p. 25)
- Alaskan Explorer* (p.26)
- Kanesville Queen* (p.27)
- Odyssey III & Pocohantas* (p.28)
- Paradise II* (p.29)
- Anticipation IV & Queen of the West* (p.30)
- Showboat Branson Belle* (p.31)
- Cayo Norte & City of Evansville* (p.34)

36 International ferry operators look for speed

As new-generation high-speed vessels enter service with ferry operators around the world, transit times on many routes are being cut in half

43 Ferry services set to expand

Participants in a *MARINE LOG* round table discussion look at some of the issues facing operators as demand for ferry services continues to grow

46 Transom link enhances tanker escort safety

Foss Maritime has developed a system that enables an escort tug to hook-up rapidly to a tanker—with no assistance from the tanker crew

49 PVA show preview

MARINE LOG takes an advanced look at some of the products and services being promoted at PVA's Riverfest '96 in St. Louis, Mo., January 20-23, 1996

Departments

3 Editorial

5 Watching Washington

U.S. moves closer to OECD agreement ratification.

7 Marine Update

Shipowners face threat of an officer shortage. Kvaerner Warnow Werft opening. MarAd backing for high-tech ship to serve lo-tech ports. U.S. shipyards and suppliers eye German market. Cadiz yard to convert drilling platform to production unit. New contracts for Bender.

10 Coastal, Inland & Offshore

Seacor rescue ship undergoing conversion. Elliott Bay designing a pair of ferries for Alaska. Marco Shipyard converts *Vostock Orion*. Gladding-Hearn delivers pilot boat. FBM wins additional TriCat ferries contract. Nichols wins tractor tugs contract. Bird Johnson leads ferry repowering.

13 Business Notes

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72 Opinion: Robert J. Alario, President, Offshore Marine Service Association

Next month

- Cruise Industry Roundtable
- Marine Electronics
- Naval Export Markets

Reporting on Marine Business and Technology

MARINE LOG

DECEMBER 1995

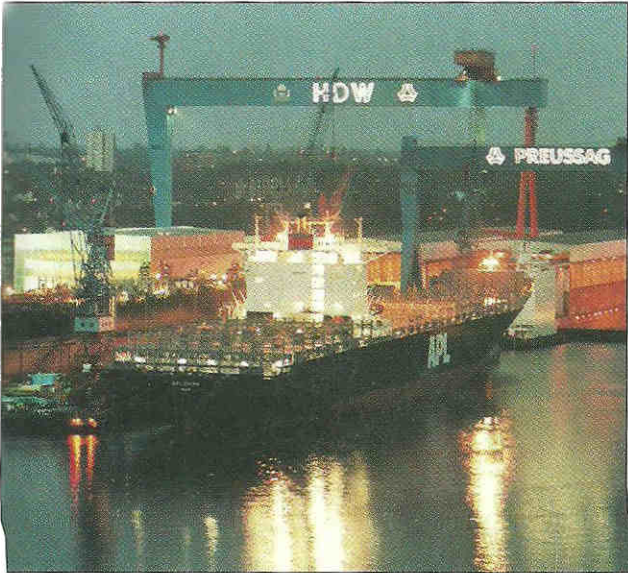
Annual Portfolio

of **D**istinctive
Ships.

ANNUAL INNOVATIVE MARINE
PRODUCTS AWARDS

CHOOSING THE RIGHT
"GREEN" REFRIGERANT

COMMUNICATIONS COSTS
FALL FURTHER



On our cover: Containership *APL China* nears completion at HDW, Kiel, Germany



Ultra high pressure water jetting at Todd Pacific Shipyards, Seattle (p. 22)

15 Competition and technology make communication affordable

Cost-effective communications systems are enabling more owners to plug the ship into the organizational chart as a "floating branch office"

22 More yards turn to hydroblasting

Waterjetting has plenty of pluses as a method of surface preparation, not least the avoidance of air quality regulatory headaches

29 Distinctive Ships of 1995

MARINE LOG's Annual Portfolio of notable ocean going tonnage delivered by world shipyards in the past year:

APL China & APL Korea, IB Rothenstein (p. 29);
Brazilian Venture, Island Commodore, Marion Dufresne (p. 30);
Lowlands Trassey, Robin Hood, Jian She 51 (p. 32);
Heidrun, Superfast I & Superfast II (p. 34);
Murex, Isle of Innisfree (p. 35);
Hanjin Pyeong Taek (p. 38);
Oriana (p. 39);
Legend of the Seas (p. 40),
Obbola (p. 41)

42 Choosing "green" refrigerants

Production of many familiar refrigerants is being phased out, but the most cost-effective replacement choice for one ship could be wrong for others

46 Growing business at "second tier" yards boosts diesel prospects

U.S. domestic diesel manufacturers are benefitting from a growing demand for tugs, towboats and other inland and coastal vessels

50 Innovative Marine Products

MARINE LOG's pick of new or improved products that are contributing to marine industry profitability, safety or environmental friendliness

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5 Watching Washington

Ban on Alaskan crude exports set to end. New rules for OSVs.

7 Marine Update

New Sulzer Diesel extends its medium speed range. Chinese yard prepares to build harsh environment rigs. Kvaerner makes a profit from shipbuilding. Drewry sees upturn ahead in tanker freight rates. EU extends subsidies until October 1996.

9 Coastal, Inland & Offshore News

Dakota Creek wins Vallejo passenger ferries contract. Trinity Marine Group completes security boat. *Escort Eagle* tractor tug delivered by Nichols Brothers. Service Marine wins contract for largest riverboat casino yet.

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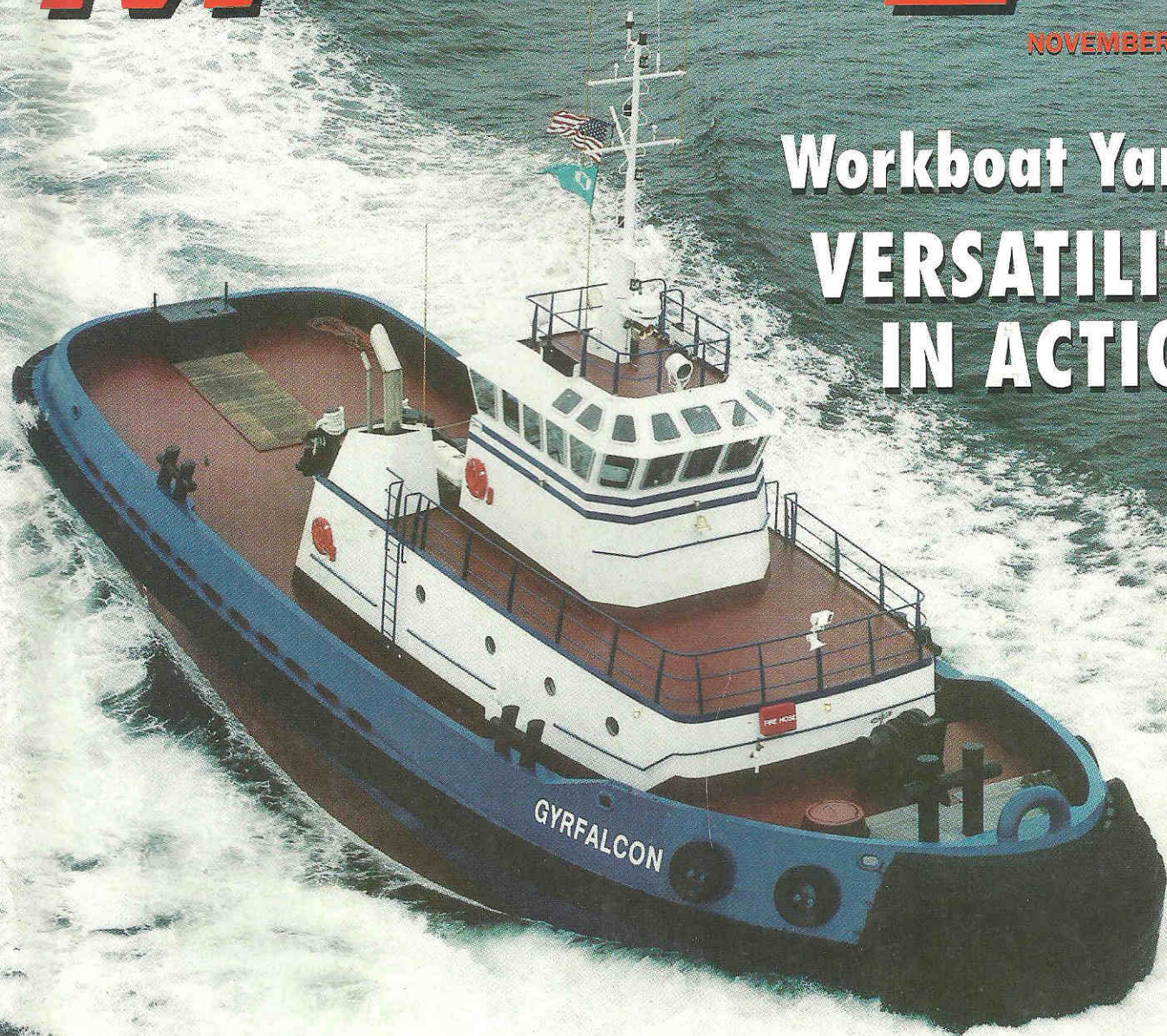
- Distinctive Passenger Vessel's
- U.S. Shipbuilding Outlook
- PVA Riverfest Preview
- High Speed Craft

Reporting on Marine Business and Technology

MARINE LOG

NOVEMBER 1995

Workboat Yards
**VERSATILITY
IN ACTION**



**WHY SOME TANKERS
CAN TILT AT TERMINALS**

**MIDSIZE YARDS WIN BIG IN
SWITCH TO COMMERCIAL WORK**

**NEW DIESELS FROM
MAN B&W AND WÄRTSILÄ**



Cover photo by Lew VanDeMark shows tug *Gyrfalcon*. Escort tugs are among a broad range of vessels under construction at America's versatile workboat yards (p. 31)



Some new-generation double hull tankers have suddenly tilted during operations at terminals. A SNAME panel has investigated why this happens and made recommendations to prevent such incidents in future (p. 40)

18 U.S. shipbuilding reinvents itself

As the U.S. orderbook for commercial ships grows, a surprisingly high proportion of the work is being won by smaller shipyards

31 Workboat yards prove their versatility

No longer dependent on cyclical trends in any one sector, America's workboat yards can build whatever is demanded by the market of the moment

40 Why some tankers sometimes tilt

A SNAME panel investigates why some double-hull tankers have tilted during operations at terminals

43 3-D product modeling is not just for super yards

Even yards with relatively unsophisticated production systems are benefiting from advanced CAD/CAM systems

51 Asian shipbuilding rivalry may mean world shipyard overcapacity

Bidding to dislodge Japan from its leadership position, Korean yards embark on a massive expansion of capacity

56 Fast ferries trim European transit times

A new generation of higher speed vessels means significant orders for MTU diesels

58 Wärtsilä 26: New contender in 2,000-8,000 bhp range

Wärtsilä Diesel's Netherlands unit unveils the successor to the SW28

61 MAN B&W Høleby rethinks the genset

MAN B&W's L16/24 boasts the streamlined, uncluttered exterior characteristic of the latest in diesel design

63 Workboat Show preview

An advance look at what leading suppliers will be promoting at this year's International Workboat Show

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Vital maritime measures face a Congressional time squeeze.

7 Marine Update

Chinese yard starts building new generation of multipurpose cargo ships. Carnival opts for revolutionary podded propulsion for two Fantasy-class cruiseliners. Poseidon poised to succeed Peterson in Sturgeon Bay. Trinity wins \$80 million order for Alaskan super ferry. Lykes files for Chapter XI.

11 Coastal, Inland & Offshore News

AMD and Incat deliver ferry to Korea. Trinity completes ferry for Virginia. Bisso Marine completes bridge removal. Elliott Bay develops spill response program. Stern-wheeler *Branson Belle* starts operation. Wavepiercer nears completion in St. Croix.

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88 Opinion: Penny Eastman, President, Shipbuilders Council of America

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Reporting on Marine Business and Technology

MARINE LOG

OCTOBER 1995

PUTTING IT ALL TOGETHER ON THE BRIDGE



• FERRY SERVICES • CASINO BOATS • DECK MACHINERY

Reporting on Marine Business and Technology

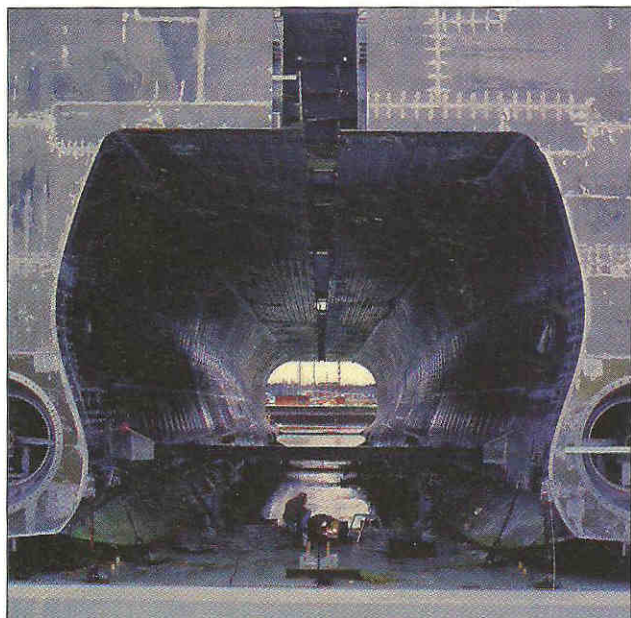
MARINE LOG

SEPTEMBER 1995

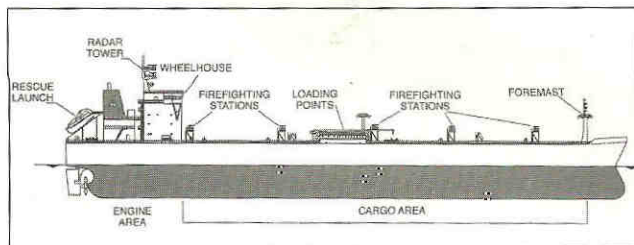
HIGH SPEED CRAFT

**FASTER
IS GETTING
BIGGER**

TANKER TECHNOLOGY • SNAME PREVIEW • COATINGS



Cover photo shows first of a new generation of HSS ferries under construction at Finnyards. As high speed craft get bigger and faster, designers are starting to eye the freight sector as well as ferry routes (p.32)



Avondale Industries has won an order to build seven double hulled products tankers for Primorsk of Russia, subject to Title XI guarantees (p.7)

25 Making double hull tanker designs work

Double hulls promise better protection of the environment, but translating the concept into shipbuilding reality is no easy matter

32 Faster gets bigger

As high speed craft get larger and faster, designers are mounting a challenge to air freight for a whole new cargo market

44 Paint: Laying down the ship's first line of defense

There's a new awareness of the crucial role played by coatings, but environmental constraints limit what can be applied—and how

54 Keeping the cruise fleet in shape

The support infrastructure for the U.S.-based cruise fleet continues to expand its capabilities

58 North Sea operators start boosting supply vessel fleet

Ulstein International is benefitting as operators gear up to meet a predicted upturn in requirements

64 Growing sales for Krupp MaK's new generation of diesels

Designed with the flexibility to meet future operating demands, the M 20 and M 32 feature a long stroke, rugged construction and modular design

67 Design firms flourish in the Northwest

Maybe it's the scenery, maybe it's the rain, but something in the Pacific Northwest helps spark naval architectural creativity

73 SNAME goes to Washington

A preview of this year's International Maritime Expo held in conjunction with SNAME's annual meeting

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5 Watching Washington

NOAA "reproposes" controversial OPA '90 rule. Shipping Act reform steams ahead. OECD: Still waiting for legislation. Hoping BAP won't zap any foreign tankers.

7 Marine Update

Avondale wins seven-ship tanker order from Russia. Double hull inspection guidelines published. Cascade General signed as PSY sole contractor. ISO 9001 for Coast Guard Yard. GD buys BIW. Casualty experience shows a big improvement.

Meyer Werft delivers passenger ship to Indonesia. U.S.C.G. authorizes ABS to type approve key equipment items. Busy times at Bender.

14 Coastal, Inland & Offshore News

Hvide christens tractor tug. McDermott completes repair facility sale to Bollinger. Blount delivers ferry. Marco converts Russian stern trawler. Kværner building second FlyingCat for Bulgaria. TBL upgrading, expanding equipment. Titan develops modular offshore platform crane.

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104 Opinion: Miles A. Kulukundis, Chairman of INTERTANKO

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- Casino Vessels
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Reporting on Marine Business and Technology

MARINE LOG

AUGUST 1995

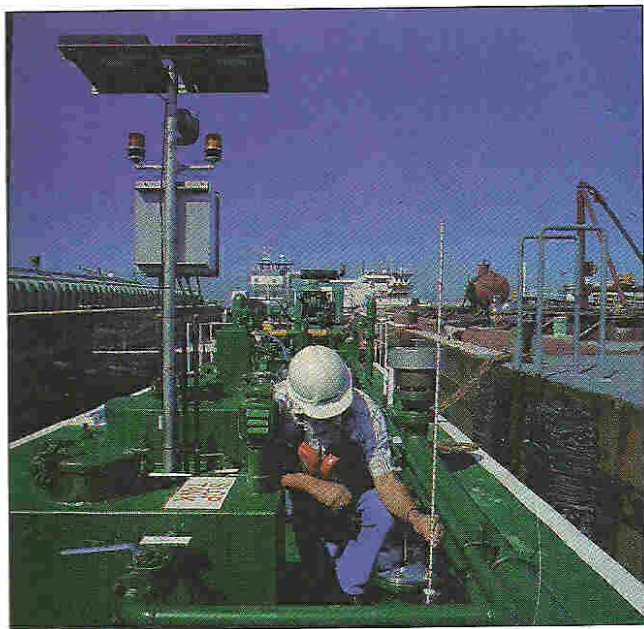
BETTER TIMES *for* BARGE BUSINESS

**DIESEL AND GAS TURBINE
OPTIONS OPEN UP**

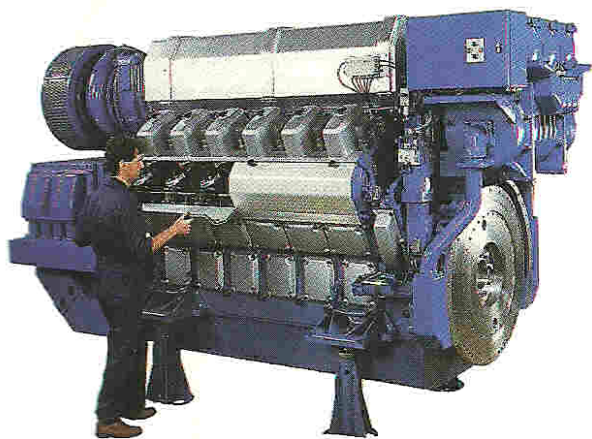
CASINO BOATS GET BIGGER

**WORKBOAT OWNERS UPGRADE
ELECTRONICS OUTFITS**

SPECIAL REPORT: PACIFIC NORTHWEST MARINE INDUSTRIES



Cover photograph shows solar-powered barge simulator operated by Kirby Marine Transportation (p. 17)



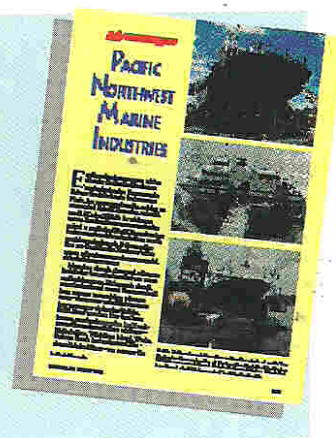
Diesel designers continue to expand their ranges (p. 23)

17 Barge business bouncing back
Freight rates for grain have been high enough, long enough to give operators the confidence to start building again. PLUS: Tank barge operators focus on safety

23 Diesel and gas turbine choices widen
Engine designers and builders continue to refine their product lines.
Low speed diesels, p. 23.
Higher outputs for bigger, faster ferries, p. 23.
Medium speed diesels, p. 24.
High speed diesels, p. 26.
Gas turbines, p. 28

SPECIAL REPORT PACIFIC NORTHWEST MARINE INDUSTRIES

An in-depth survey of trends and developments in what is emerging as one of North America's liveliest centers of ship and boat building and design



31 Gaming boats grow in size, imagination and price
Pursuing the promise of profits, casino operators are buying boats that are bigger, beamier... and costlier

36 Workboat operators upgrade their electronics outfits
Even aging workboats can take advantage of the latest advances in electronics to boost safety and operating efficiency

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- 5 **Watching Washington**
Nibbling at the edges of OPA '90. Ending ban on ANS exports and giving drillers royalty holidays. Turf battle on OECD subsidy deal.
- 7 **Marine Update**
New owner has ambitious plans for Tampa Shipyard. Trinity expands its ship repair capabilities. Update Facts and Forecasts.
- 9 **Coastal, Inland & Offshore News**
Avondale delivers *Belle of Orleans*.

- Trinity completes passenger ferry. Intermarine enters megayacht market. U.S. Navy awards SeaArk Marine a contract for nine patrol boats. Dinner cruise boat design from DeJong and Lebet.
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- 60 **Opinion:** Robert L. Gardner, Vice President, ContiCarriers & Terminals, Inc.

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- High Speed Craft
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Reporting on Marine Business and Technology

MARINE LOG

JULY 1995

U.S. Marine D I R E C T O R Y

SHIPYARDS,
VESSEL OWNERS &
OPERATORS

ENVIRONMENTAL PROTECTION
CAN WE GET GREENER
WITH LESS RED TAPE?

AMERICAN QUEEN
NEW ORLEANS, LA.

SPECIAL REPORT: GULF COAST MARINE SUPPLIERS



Cover photograph shows paddlewheel of *American Queen*, a recent delivery from McDermott Shipbuilding, one of over 300 shipyards listed in this year's U.S. Marine Directory section (p.35)

13 More environmental rules in pipeline
Though there are signs of some relief from federal regulation, shipowners still face more rules implementing the requirements of international conventions and greater regulation by U.S. coastal states

18 Tug and barge operators look for regulatory relief
Operating on 25,000 very visible miles of waterway, the tug and barge industry is particularly exposed to the whims of environmental protection regulators

21 U.S. MARINE DIRECTORY

21 U.S. Merchant Shipping I: Owners
Listings of U.S. and foreign-flag vessels of 500 grt and above owned or otherwise controlled by U.S.-based entities

31 U.S. Merchant Shipping II: Operators
Listings of U.S.-based operators of vessels of 500 grt and above

35 U.S. Shipyards
Listings of U.S. shipbuilders and repairers

SPECIAL PULL-OUT SECTION

GULF COAST HEADLINER

MARINE LOG GULF COAST HEADLINER

IF IT FLOATS, GULF COAST CAN BUILD IT
240 shipyards, backed by a diverse supplier base, have formed a row to meet the challenges of change



I The Gulf Coast shipbuilding industry is a diverse and dynamic one, with 240 shipyards and a wide range of capabilities. From small craft to large commercial vessels, the industry has a long history of excellence and innovation. As the industry faces new challenges and opportunities, it is well-positioned to meet the demands of a changing market.

- III Refrigerator firm sets sights on commercial ships. Container-ship for world market
- IV Coatings for potable water tanks. SMQI moves to Houston. Con-Tech supplies Double Eagle
- VI Versatility at Otech. Heated Mops and robust RIBS. Round-the-clock electronics service
- VII High performance coatings
- VIII Köpcke: European tradition and

- American know-how. Barges to be modified in Louisiana
- IX Azimuthing thrusters with CRP
- X Waterjet propelled to 50 knots. TANO sharpens marine focus
- XI Coatings based on research. Con-Select set for building boom. Cost-effective refrigerator
- XII New generation workwheels
- XIV New uses for old rigs
- XVI From car trunk sales to NASA

- supplier. New Incinolet line
- XVII "Portable" DP. Remanufactured power
- XVIII Zentech active in technical debate. Telescoping boom cranes
- XIX Deep traditions at Bisso Marine
- XX Fire protection for range of vessels. Maintenance products
- XXI Beard Industries
- XXIII Gulf Marine Resource File

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Subsidy deal legislation hits budgetary snag. World City looks for Title XI backing. Reprieve for FMC?
- 6 **Marine Update**
Computerized ship design project. Ship registry statistics. Trinity and McDonnell Douglas team on corvette-size ship with frigate punch. Shipowners as a regulatory target. PBI seeks buyer for Sturgeon Bay yard

- 9 **Coastal, Inland & Offshore News**
Gladding-Hearn to build ferry for Nantucket run. U.S. Incat licensees eye export market. Westport completes *Alaskan Explorer*. Kvichak delivers boom towing boat
- 11 **Business Notes**
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- 64 **Opinion:** R.T.E. Bowler III, President, American Shipbuilders Association

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- **Casino Boats**
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- **Pacific Northwest Special Report**
- **Diesels & Gas Turbines**
- **Workboat Electronics**

Reporting on Marine Business and Technology

MARINE LOG

JUNE 1995

54th Annual Yearbook & Marine Review

Facts & Forecasts



- U.S. & WORLD SHIPPING, SHIPBUILDING AND REPAIR
- OFFSHORE
- INLAND WATERWAYS
- CRUISE MARKET
- TECHNOLOGY
- CASINO BOATS



Sun Princess, one of the latest additions to the world cruise liner fleet, noses out of Fincantieri's Monfalcone yard earlier this year. Cruising has proved one of the most buoyant sectors of shipping, with more—and bigger—ships set to come into service over the next few years to meet a projected continuing growth in passengers (p.50)

- 21 Shipping: More U.S. tonnage is set to flag out**
U.S. container operators are putting themselves on the same playing field as everyone else in world shipping, but in many sectors the prizes don't glitter like they used to
- 29 U.S. shipyards do a balancing act**
U.S. yards must keep the Navy happy, while getting up to speed on commercial shipbuilding in time to benefit from a much anticipated surge in demand
- 37 World newbuilding orders are up**
Newbuilding orders were strong last year, but prices were down and overcapacity fears are growing
- 42 Offshore emphasis is on development**
Until oil and gas prices firm, oil companies will seek to maximize returns from existing offshore fields before exploring for new ones
- 50 Cruise fleet expansion continues**
The leading cruise ship operators keep adding more—and larger—ships to their fleets
- 52 Lakes carriers look for growth**
U.S.-flag Great Lakes carriers hope 1994's record performance will prove a benchmark for future growth
- 54 Gaming boat demand stabilizes**
Lengthy casino licensing procedures could limit gaming boat orders to present levels for a while
- 62 Mississippi barge fleet renewal starts**
Better dry bulk freight rates have given operators the confidence to start ordering again
- 66 Boosting U.S. shipyard technology**
A second wave of projects has been selected for the MARITECH cost-shared R&D program
- 68 MTU increases fast ferry engine ratings**
An increased continuous rating for the 20-cyl. Series 1163 points the way for more 40-knot-plus ferries

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- 5 Watching Washington**
Changes to Title XI. Oil export ban set to end. Problems for MSP.
- 7 Marine Update**
Van Ommen orders Double Eagles. Export order for Alabama Shipyards. Finnish cruise ship delivered to Japan. Gulf Copper busy. Station 12 goes global. IACS and Port States. Where shipowners get COFR's. Type approval seminar.

- 14 Coastal, Inland & Offshore News**
Gladding-Hearn delivers pilot boat to Virgin Islands. Willard Marine building sister pilot boats. Bender proposal wins MARITECH funding. Harvey Gulf repowers rig. Title XI sought for New York ferries.
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- 92 Opinion:** Thomas P. Jones, Jr., Shipbuilders Council of America

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- Annual U.S. Marine Directory
- Environmental Regulations
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Reporting on Marine Business and Technology

MARINE LOG

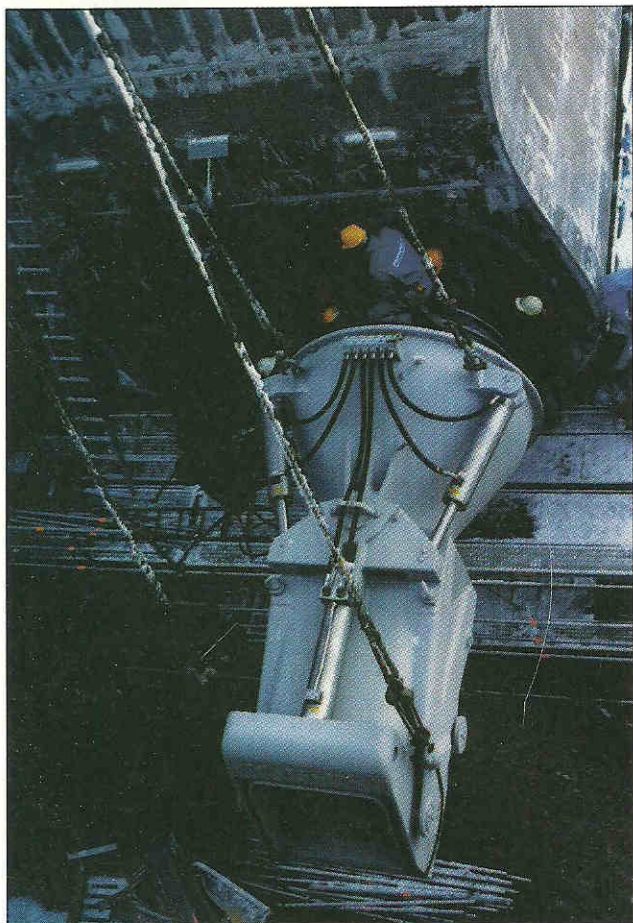
MAY 1995

THE NORDIC CONNECTION

WHY NAVY NEEDS
U.S. YARDS TO BUILD
COMMERCIAL SHIPS

AFFORDABLE
ASPHALT TANKER





Cover photo shows a KaMeWa waterjet being fitted to a giant catamaran at Finnyards. Nordic area suppliers' commitment to advanced technology is helping them win new business from an American shipbuilding industry intent on selling in the world market for commercial ships

25 Why the Navy needs U.S. yards to build commercial ships

Unless American yards can stay alive by building affordable commercial ships for the world market, the U.S. Navy will have no place to construct its next generation of warships

31 Mar Almudena: Affordable asphalt carrier with CLT propeller

A 9,500 dwt double-hulled tanker from Union Naval de Levant, equipped with a fuel-saving tip-loaded propeller, is now in service between Spain and the Canary Islands carrying liquid asphalt at 170°C

34 THE NORDIC CONNECTION

As American shipyards turn their attention to the commercial market, they're finding that suppliers in Denmark, Finland, Norway and Sweden are well-placed to partner them in providing owners with ships incorporating the latest technological advances

35 Blohm + Voss develops a new generation of high speed ships

After years of specializing in naval newbuildings, a leading shipbuilder responds to a renewed market interest in high speed freight with a family of fast monohulls capable of speeds up to 32 knots

38 ISO 9000: More than a trophy

Companies that have made the commitment to Quality Assurance report that ISO 9000 accreditation brings tangible benefits

43 Pump and Valve Buyer's Guide

A guide in chart form to marine market pump and valve suppliers

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3 Editorial

5 Watching Washington

Congress is getting ready for some lively in-fighting on the OECD shipbuilding deal, the fate of the FMC and some aspects of OPA '90, and the USCG plans another "reg neg."

7 Marine Update

Major classification societies take a tougher line. IMO panel reports recommendations to enhance RO/RO safety. Royal Schelde to build high speed ferry. Banner 1994 for ABS. Patent awarded for SKARHAR design. Brothers bid for Tampa Shipyards' assets. Shipbuilding groups hold "summit."

12 Coastal, Inland & Offshore News

Bender delivers twin riverboats. SkipperLiner completes excursion boat. Avondale launches latest New Orleans riverboat. Master Marine and Shearer & Associates complete towboat renovation. New ferry service approved for N.Y. Powerful tug joins Bisso Towboat's fleet. Hvide continues fleet expansion. Reverse tractor tug under construction at Nichols Brothers. Extension for riverboat launched at Service Marine. Gladding-Hearn wins Boston ferry contract.

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68 Opinion: Tim Colton, Colton & Co.

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- Annual Yearbook Issue: Facts, forecasts, analyses and statistics on developments in key U.S. and international marine market sectors

Reporting on Marine Business and Technology

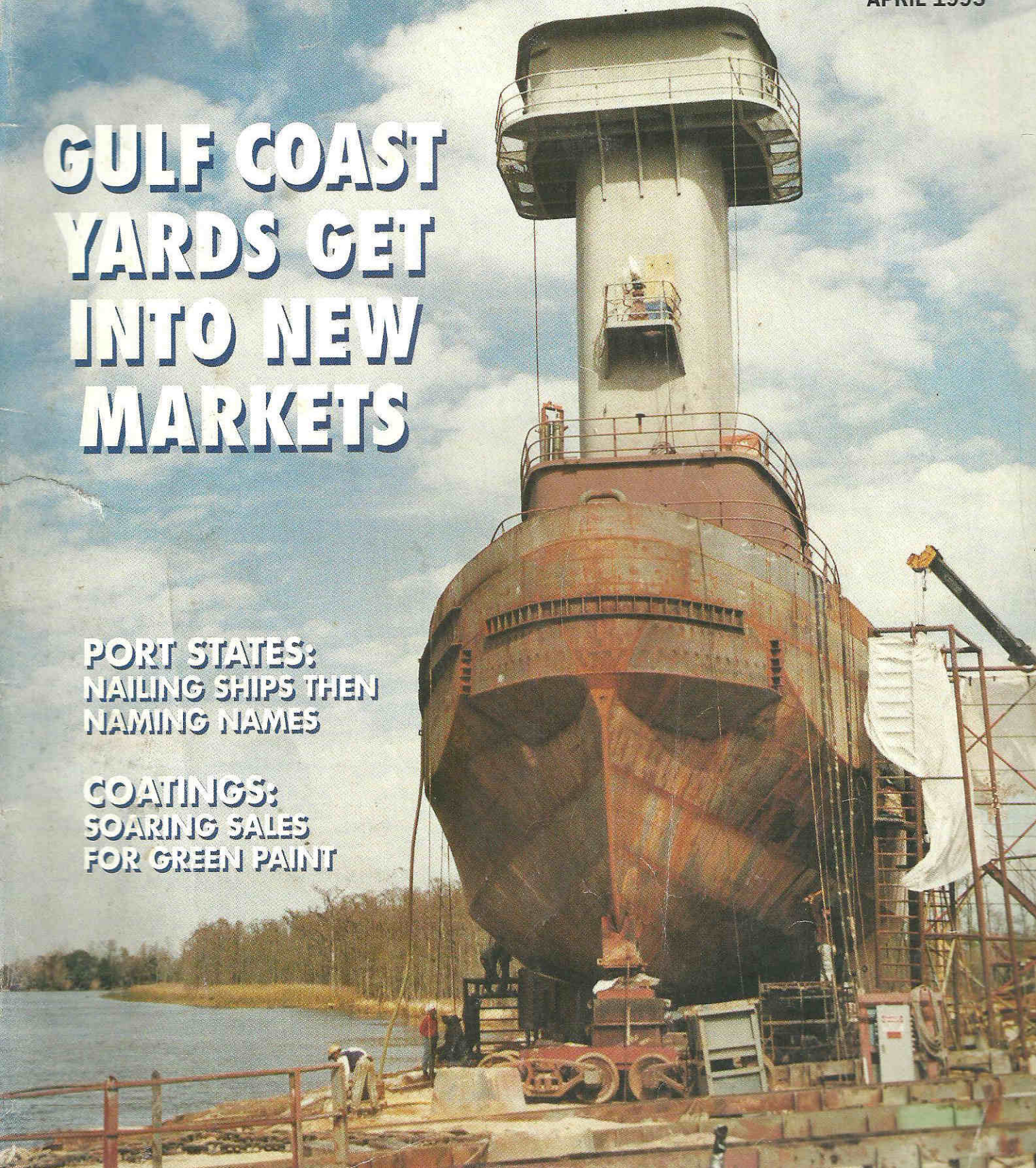
MARINE LOG

APRIL 1995

GULF COAST YARDS GET INTO NEW MARKETS

**PORT STATES:
NAILING SHIPS THEN
NAMING NAMES**

**COATINGS:
SOARING SALES
FOR GREEN PAINT**





Cover photo shows tug element of a tug barge combo nearing completion at a Trinity Marine group yard. Administration incentives to promote development of commercial shipbuilding are helping Gulf Coast yards broaden their product range and add to their orderbooks

17 Why more port states are nailing ships and naming names

Disenchanted with flag states' enforcement of conventions, port states are detaining more vessels, then naming the ships, their owners, their flags and their classification societies. ALSO: Cyprus commits to international network of surveyors. (p. 20), Bureau Veritas boots out more ships (p. 23).

27 U.S. Gulf yards launch into new markets

America's Gulf Coast yards have been quick to take advantage of incentives such as revamped Title XI loan guarantees and the MARITECH program. As a result, both their orderbooks and their design portfolios are looking stronger.

34 Offshore outlook is promising

Offshore industry leaders are optimistic, but see yet more company consolidation ahead in the service sector

41 Study promotes enhanced machinery redundancy

Greater redundancy in ship's machinery arrangements could have economic as well as safety advantages, says a Finnish-Norwegian consortium

45 Soft dollar spurs sales of "green" paint

International shipowners are finding that it makes financial sense to pick up paint in the U.S.—including sophisticated, environmentally-friendly coatings. PLUS: International introduces visual standards for wet blasting (p. 45), Sigma reports success with tank coatings (p. 46), How anticorrosives work (p. 50).

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Clinton promises relief from regulatory red tape. Another salvo from Schiavo. Fight looms over cargo preference. U.S. Coast Guard steamed over VTS plan.

7 Marine Update

Carnival releases first details of post-panamax ship. Newport News books more Double Eagle orders. Vosper Thornycroft unveils new export warship concepts. Dutch yard to stretch gas tanker. Fire damage repair contract for Bazan-Carenas. BT Inmarsat cuts charges. Disney Cruises chooses classification society

11 Coastal, Inland & Offshore News

Gunderson launches first barge in eleven years. Gladding-Hearn delivers its seventh high-speed police boat to New York City. Atlantic Marine wins tug contract from Hvide. Peterson delivers two patrol craft. Jeffboat launches *The City of Evansville*. Halter Marine launches towboat.

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- Quality Assurance & ISO 9000
- Pump & Valve Buyers' Guide


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MARINE LOG

MARCH 1995

**PACKING EXCITEMENT
INTO CASINO BOATS**

**WAITING FOR THE
BARGE BUILDING BOOM
TO BLOSSOM**



SHIP REPAIR

**U.S. YARDS SHARPEN
THEIR PENCILS AS
WORLD DRY DOCK
CAPACITY GROWS**



Cover photo shows removal of the old condenser water box from a foreign-flag cruise ship at Norshipco, Norfolk, Va., prior to fitting new equipment fabricated before arrival of the vessel. U.S. ship repairers continue to report an increase in commercial ship work (p.25)

- 25 American repair yards intensify efforts to win commercial work**
Sharpening their pencils and gritting their teeth, U.S. yards are winning business from price-conscious foreign flag operators
- 37 International repairers go on dry dock digging spree**
Though a depressed tanker market has kept prices soft, many yards believe better times lie ahead
- 50 Fitting a casino-load of excitement into a boat-size space**
Designers use mirrors, lights and whatever else it takes to implement spectacular themes aboard casino boats
- 55 Interview: Restoring faith in classification societies**
As "Mr. IACS," James Bell has to persuade the skeptics that a group of organizations paid by shipowners really can contribute to higher standards of shipping quality and safety
- 59 Deutz MWM unveils 632 engine**
Developed in cooperation with GE, the Deutz MWM 632 covers the 1,958-8,568 horsepower range at 800-1,200 rpm.
- 62 Caterpillar introduces the 3500 Series B**
Advanced electronics help latest version of a long-running design deliver higher ratings and lower NOx
- 64 Barge building recovery gets nearer**
The mood in the barge industry is one of "cautious optimism," but building orders are starting to pick up

Departments

- 3 Editorial**
- 5 Watching Washington**
The maritime sector does quite well in the administration's FY 1996 budget request. Panel members named to the House Special Oversight Panel on the Merchant Marine. Coast Guard subcommittee sets oversight schedule.
- 7 Marine Update**
Meyer and Metro could use Philadelphia Navy Yard. Avondale wins products tanker contract. Norwegian owner plans to order six-ships from Trinity. Flood door for giant ferry. Todd Pacific wins ferry contract. State marine environmental

- agencies under fire. Modernization at Canadian yard. Sweden names advanced sub.
- 14 Coastal, Inland & Offshore News**
Trinity completes North Carolina's latest ferry. AMFELS wins power barge contract, completes drill barges. Steiner delivers towboat. Kvichak Marine completes spill recovery vessels. TriCat reaches 52 knots. Mid-Jet delivers survey vessels. USA Catamarans develops new Cat. Coast Guard contract for Marinette. Tourism coalition formed. Leevac wins casino boat contract.
- 22 Business Notes**
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- 70 People in the News**

- 71 U.S. Shipbuilding Contracts**
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- 74 Marine Industry Calendar**
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- 81 Professional Card Directory**
- 84 Reader Interview: Stefan B. Nystrom, Stolt Parcel Tankers**

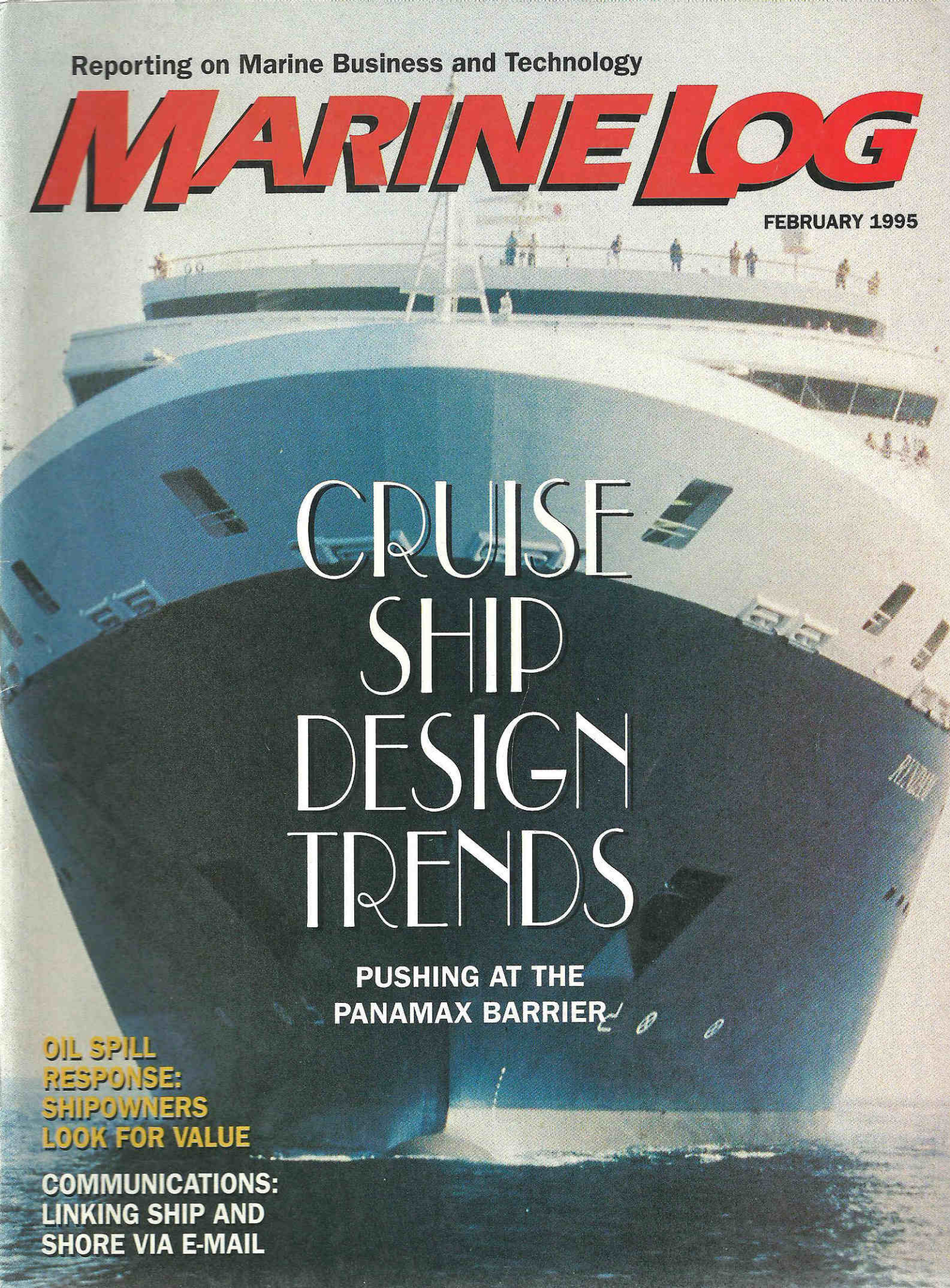
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- Offshore Industry Outlook
- Port State Control & Flag States
- Coatings and Corrosion Control
- U.S. Gulf Coast Marine Industry

Reporting on Marine Business and Technology

MARINE LOG

FEBRUARY 1995



CRUISE SHIP DESIGN TRENDS

PUSHING AT THE
PANAMAX BARRIER

**OIL SPILL
RESPONSE:
SHIPOWNERS
LOOK FOR VALUE**

**COMMUNICATIONS:
LINKING SHIP AND
SHORE VIA E-MAIL**



Holland America's *Ryndam*, featured on the cover, illustrates how much cruise lines tailor the interior ambiance of a ship to its target market. This trend, as well as a market-wide move toward larger, more lavish cruise ships, is discussed in this month's feature on cruise ship design (p. 31)

20 Owners seek sweeter deals from spill responders

Five years after OPA '90, shipowners are starting to question what their retainer fees are buying from Oil Spill Removal Organizations. PLUS: Spill clean-up products and systems (p. 22)

31 Cruise ship design trends: Looking beyond Panamax

Marketing considerations are pushing the major cruise lines to steadily increase the average tonnage and passenger capacity of the latest cruise liners, taking some past Panama Canal size limits.

42 E-mail systems help keep communications costs in line

Managed message services offer shipowners strategic commercial advantages as well as cost effective use of Satcom capabilities. PLUS: Boatracs two-way satellite electronic messaging offers a cost-effective alternative to voice communications (p. 44), AMSC poised to introduce M-Sat service (p. 47)

53 Ambar introduces a new breed of RIBS

Proven in rigorous North Sea service, a new type of multipurpose fast ocean RIB is now available with a "Made in the U.S.A." label

Departments

3 Editorial

5 Watching Washington

Congressional reforms that eliminated the House Merchant Marine & Fisheries Committee have forced House maritime industry interests to regroup as a panel rather than a full subcommittee. Maritime institutions come under fire. OPA re-opening looks likely. U.S. Coast Guard starts at-sea port state controls.

8 Marine Update

Shipbuilding capacity is next OECD target. Coast Guard designates lightering zones. More commercial business for U.S. yards. New president for the Shipbuilders Council of America. Important ABS-USCG agreement.

12 Coastal, Inland & Offshore News

Hvide orders a tractor tug for Port Everglades. Trinity acquires Gulf Coast yard. Gladding-Hearn to build a new pilot boat for the Virgin Island Port Authority. Nichols plans construction of passenger vessel for Columbia River. Art Anderson expands deck on *Pride of Maui*. Blessey increases fleet with three barges and two tow boats. Excursion vessel receives new propulsion system.

18 Business Notes

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72 Reader Interview:

Arcangelo Fragala,
Carnival Cruise Lines

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- World Ship Repair Review
- U.S. Ship Repair Review
- Casino Boat Interior Design
- Classification Society Services
- Barge Industry Forecast

Reporting on Marine Business and Technology

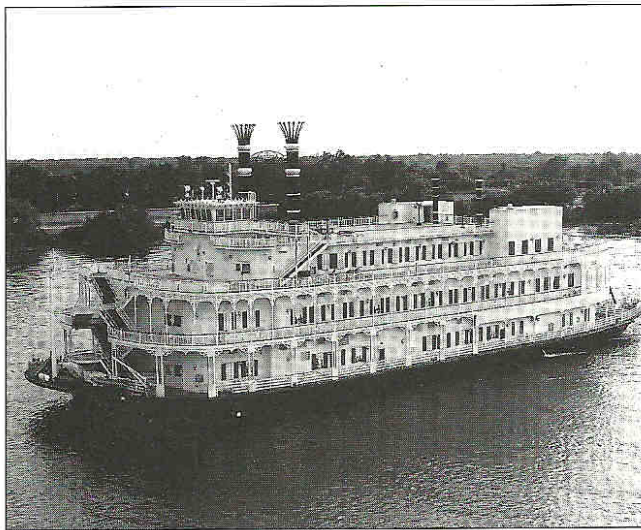
MARINE LOG

JANUARY 1995

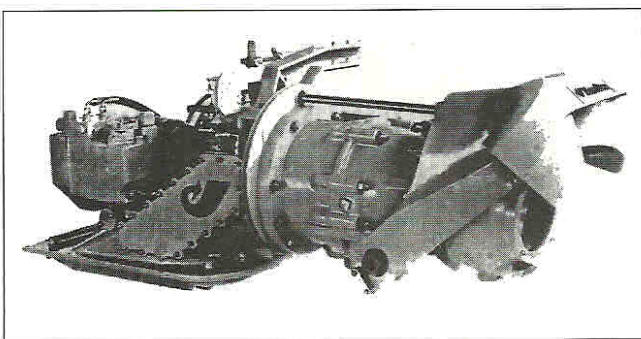
Distinctive Passenger Vessels



**FUELS: GETTING WHAT YOU PAY FOR
FIREFIGHTING AND SAFETY**



Casino boats such as the *Belle of Baton Rouge* (above) continue to figure prominently in recent deliveries of distinctive passenger vessels (p.25)



Products promoted at this year's PVA trade show include Hamilton Jet's model HJ 321 waterjet (p. 54)

18 More new gaming boat orders seem likely

A Missouri referendum result and an Indiana court decision could open the way for orders for 18 new casino vessels

25 Annual Portfolio of Distinctive Passenger Boats

This year's parade of casino boats, dinner boats, ferries and other passenger vessels includes *Belle of Baton Rouge*, *Grand Victoria* (p. 25), *Pride of Key West*, *Catalina Express*, *Par-A-Dice* (p. 26), *Royal Queen*, *Star Gazer*, (p.28), *Argosy IV*, *Garden State* (p.30), *Palau Agressor*, (p.32), *Flamingo Casino* (p.33), *Niagara Prince* (p.34), *Kasuari* (p.35), *Dixie II* (p.38) and *Floyd J. Lupton* (p.40)

42 Tougher firefighting and safety rules are in the works

Recent disasters such as the *Achille Lauro* fire mean that there will be no letting up in authorities' efforts to develop stricter fire and safety regulations and tighten enforcement

46 Bunkers: Getting what you pay for—and finding out what you've bought

Variations in the sources of crude oils mean that the quality of residual fuels and blends can differ greatly—even when they're within specification. PLUS: Fuel treatment system layout (p.47); How lubricants can help reduce costs (p.48); Taking a diagnostic approach to fuel treatment (p.49)

50 PVA trade show preview

An advance look at some of the products and services being promoted at this year's Passenger Vessel Association annual convention and trade show, which is being held at the Fairmont Hotel, San Francisco, January 14-18, 1995

Departments

3 Editorial

5 Watching Washington

The OECD agreement to end ship-building subsidies could come in for close scrutiny from the new Congress. The Shipbuilders Council of America restructures itself

7 Marine Update

Newport News to develop Arab Gulf yard. Bazan delivers first Mestral and books an order for another, larger derivative. Blohm + Voss redelivers QE2. Wärtsilä Diesel and Cummins in high speed diesel joint venture.

ABS awarded worldwide ISO9001 certification.

11 Coastal, Inland & Offshore News

Pilot boat for Miami. Tractor tug for Hvide. Spill response boat from SeaArk. Breaux delivers crew/supply boats. Water Taxi opens Miami service. Bisso Marine sets heavy lift record. More tank barge orders for Trinity Marine.

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72 Reader Interview: Terry MacRae, Hornblower Yachts

Next month

- Cruise vessel design
- Oil spill clean-up
- Communications

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MARINE LOG

DECEMBER 1994



IT'S A DEAL!

**Eletson and Newport News ink
breakthrough tanker contract**

**INNOVATIVE MARINE
PRODUCTS AWARDS**

**ANNUAL PORTFOLIO OF
DISTINCTIVE SHIPS**



Watched by Transportation Secretary Federico Peña (seated, center), Eletson president Captain John Karastamatis shakes hands with Newport News Shipbuilding chairman Pat Phillips after inking a breakthrough export order made possible by the Title XI program (p. 14)



This year's portfolio of distinctive ships includes *Norasia Fribourg*, part open-hatch containership from HDW

14 Title XI: One more option for owners looking for finance

A breakthrough export order for Newport News underlines the fact that there's now a new financial option for owners in the market for newbuildings

20 Canadian yards and owners strive to shape their own destiny

Canada's marine industry learns to live with a minimum of federal government assistance

25 Annual Portfolio of Distinctive Ships

A salute to some of the most distinctive oceangoing tonnage joining the world fleet in the past year: *Sulphur Enterprise*, molten sulphur tanker from McDermott; *Nuevo Leon*, containership from Astilleros Españoles (p.25); *Puteran Intan*, LNG carrier from France (p.26); *Erradale*, bulker from Belfast (p.28); *Red Falcon* and *Red Osprey*, double ended ferries from Scotland; *Karan 8*, survey vessel from Mjellem & Karlsen (p.30); *Nedlloyd River Plate*, containership from Hanjin; *Titus*, car carrier from Daewoo (p.32); *Hyundai Utopia*, first LNG carrier from Korea; *Thalassini Tyhi*, bulker from Samsung (p.33); *Norasia Fribourg*, advanced part open-hatch containership from HDW; *Asean Restorer*, cables ship from Kvaerner Masa-Yards (p.34); *Trade Sol*, first ECOBOX ship; *Al Khaznah*, LNG carrier from Mitsui (p.36); *Paglia Orba*, RO/RO ferry from ACH (p.37)

38 Used oil analysis helps owners avoid engine repairs

Since 1985, Mobil Oil's PFA program has saved international owners an estimated \$10 million in machinery repairs

40 Innovative Marine Products Awards

MARINE LOG's pick of new or improved products that are contributing to improved marine industry profitability, safety or environmental friendliness

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5 Watching Washington

Key congressional maritime panel looks likely to vanish in restructuring of committees. MarAd grants APL permission to put newbuildings under EUSC flag.

7 Marine Update

USCG suspends part of escort tanker rule. New ownership for Port of Portland ship repairer. CEGELEC repairs QE2's AC drive. ILU reports mounting tonnage losses. NASSCO

awarded two more Strategic Sealift Ships. More COFRs issued. IMO to look at stowaway problem.

9 Coastal, Inland & Offshore News
Casino referenda produce mixed results. SeaArk delivers boom barge. Water Taxi starts a limo service. Peterson to build floating crane. Alabama delivers *Argosy IV*. Korean fishboats must fit GPS units.

12 Business Notes

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63 Reader Interview: Jimmy McFadyen, Delta Queen Steamship Company

64 Opinion: Philip J. Loree, Chairman, Federation of American Controlled Shipping

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- Distinctive Passenger Boats
- Fuels and Lubes

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MARINE LOG

OCTOBER 1994

SPECIAL REPORT: THE CASINO BOAT MARKET



SPREADING THE BETS AT GULF YARDS

CRUISE SHIPS: THE INSIDE STORY
KEEPING TANKER SPILLS IN CHECK
WORKBOAT SHOW PREVIEW



Neon palms crown floating casino *Isle of Capri*, built by Service Marine. The gaming boat business has been kind to Gulf Coast shipyards, but now they're looking at wider opportunities, including export ships



Gone with the Wind characters cruise along with passengers in Tara Lounge of Carnival's *Fascination*. Imaginative interior decor is playing an important role in building popularity of cruise vacations (p. 55)

23 Gulf Coast yards look to broader markets

Shipyards on the U.S. Gulf Coast have been among the first to take advantage of initiatives such as the revamped Title XI program

39 SPECIAL REPORT Casino boats: A market assessment

A state-by-state examination indicates that the gaming boat business faces some growing pains, but there are still ample opportunities for expansion

51 Fishboat yards look to diversify

With too many boats chasing too few fish, yards serving the fisheries market are concentrating on repairs and looking for other newbuilding opportunities

55 Cruise ships: The inside story

A cruiseliner's interior decor is even more important than the destinations visited in helping lines win repeat business

58 Ferries and barges speed Boston Harbor clean-up

A "water highway" has helped soften the environmental impact of a major civil engineering project

60 Big moves on Great Lakes

Unusual project cargoes are moving on the Lakes

62 Minimizing oil spills

Underpressure could be the key to keeping cargo oil inside a tanker after a collision or grounding

66 Building a better boom

The Wirkala Environmental Barrier promises to make oil spill clean-up operations much more effective

67 Workboat Show preview

From November 3-5, 1994, New Orleans once again hosts the annual International Workboat Show

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5 Watching Washington

Title XI covers *small* export ships, too. House passes maritime bills. Warning on U.S. salvage capabilities

7 Marine Update

P&I executives float plans to resolve COFRs problem. U.S. shipyard leaders in international talks. Tanker owners increase repair spending. Egyptian yard wants to expand. AESA wins FPSO conversion contract. KaMeWa completes giant jet

12 Coastal, Inland & Offshore News

Avondale delivers casino boat. *Niagara Prince* joins ACCL. Service Marine completes dinner boat. Passenger boat from Kvichak. Bollinger wins tugboat order. AWSC releases yard survey. Spill control boat for Cook Inlet. High speed whale watcher. Trinity wins barge and towboat order. Blount to build ferry

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Riverboat gaming needs *managed* growth, says Harrah's Larry Lcaff

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- Ship design software • SNAME show preview • U.S. shipyards re-enter the commercial market

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SEPTEMBER 1994

GERMAN YARDS

Delivering high-tech
at world prices



Marine Update
TITLE XI PUTS U.S. YARDS BACK
IN THE EXPORT ARENA

Passenger Boats
MAKING A PLACE FOR FERRIES
IN TRANSIT PLANNING

Casino Boats
PICKING THE WINNERS IN THE
GAMING BOAT GAME



ECOBX containership shown on cover is one of several German ships to incorporate elements built in countries with lower cost structures



A new Coast Guard rule for tanker escort tugs in Prince William and Puget Sounds could set the stage for similar requirements elsewhere (p. 44)

- 22 German yards try to trim the cost of high-tech**
Deals with partners in lower cost areas offer a way for Europe's leading shipbuilding nation to hold onto the No. 3 position in the world orderbook
- 32 Newbuilding demand: The question isn't "how much?" but "when?"**
There are too many old ships out there. But forecasting the timing of their "replacement" orders is more complex than it sometimes appears
- 38 Making ferries part of transit planning**
At long last, regional transit planners are starting to take ferries into account when formulating policy
- 44 New Coast Guard rule sets criteria for tanker escort tug capabilities**
A new rule for tanker escort tugs in Prince William & Puget Sounds could set the stage for similar requirements elsewhere
- 48 Tighter towboat safety rules**
In the aftermath of the Sunset Limited derailment last year, the inland waterways industry faces stricter regulations
- 50 Best casino boat bets may be on Wall Street**
Though gaming boat revenues are surging some casino stocks are sagging
- 56 Gulf offshore outlook stays bright**
Oil companies and independent producers plan to increase their E&D spending in the Gulf of Mexico
- 60 Service results from Sea-Land genset engine retrofit**
An MAN B&W Holeby 6L28/32 looks good after 20,000 hours operation on heavy fuel

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- 3 Editorial**
- 5 Watching Washington**
Senate problems with tonnage tax threaten maritime reform. Unsoeld cruise ship bill passes its first hurdle.
- 9 Marine Update**
Title XI catapults U.S. yard into the export market. NASSCO modernizes. Philadelphia pins port hopes on revolutionary containership project. Ingalls delivers Israeli corvette
- 16b Business Notes**
- 18 Coastal, Inland & Offshore News**
Bender delivers *Queen of the Red*. Marco launches oil recovery tug. Aker Gulf Marine gets SWATH order. Cape May ferry opts for Omnithruster. Casino boats keep IDI busy. Another big lift by Bisso. Thrustmasters for flexifloat barges.
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- Casino boat operations
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August 1994

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SLENDER monohull concept from Kværner Masa-Yards would take fast ferries into new territory (p. 20)



GAS TURBINES are being specified for a growing number of commercial vessels (p. 44)

MARINE LOG

August 1994

Vol. 99 No.8



SLENDER monohull concept from Kværner Masa-Yards would take fast ferries into new territory (p. 20)



GAS TURBINES are being specified for a growing number of commercial vessels (p. 44)

20 High speed craft are getting bigger and faster

A new breed of high speed ferries and freight carriers is streaking across the seas

32 Shorter commutes, more comfort

West Coast ferry operators find a formula that's boosting ridership and helping open new routes

35 Staying clean and green

Shipowners who want to stay on the right side of tough new environmental regulation are learning that, to avoid hefty fines, they have to invest in crew training as well as hardware

43 PROPULSION REVIEW: The options get broader

Diesel manufacturers continue to broaden the choices available to ship designers and gas turbines are being specified for an increasing number of commercial vessels

43 Making an exact engine/propeller speed match to optimize big ship efficiency

44 Gas turbines find new commercial marine markets

45 Small-bore two strokes make a challenge in the medium speed diesel's domain

45 More contenders enter the medium speed diesel arena

48 High speed diesel market: More engines, less NOx

52 How diesel designers are bringing down emission levels

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Coast Guard issues tough COFR rule

9 Marine Update

Agreement to end international shipyard subsidies. Chouest to build box ship. Tanker converted to shuttle duties. New OSRO enters market. Finnyards' new building dock

14 Business Notes

16 Coastal, Inland & Offshore News

Latest deliveries from Bender. Trinity buys a barge yard. Moran christens a double-hull barge. Water taxis in San Diego. More Aquamaster Z drives for escorts. NTSB seeks safer waterways

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Admeasurement changes and the offshore service vessel industry

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Reporting on Marine Business and Technology

MARINE LOG

JULY 1994

SATCOM

THE ALTERNATIVES
OPEN UP

**DIESELS:
WHERE TO REPAIR?**

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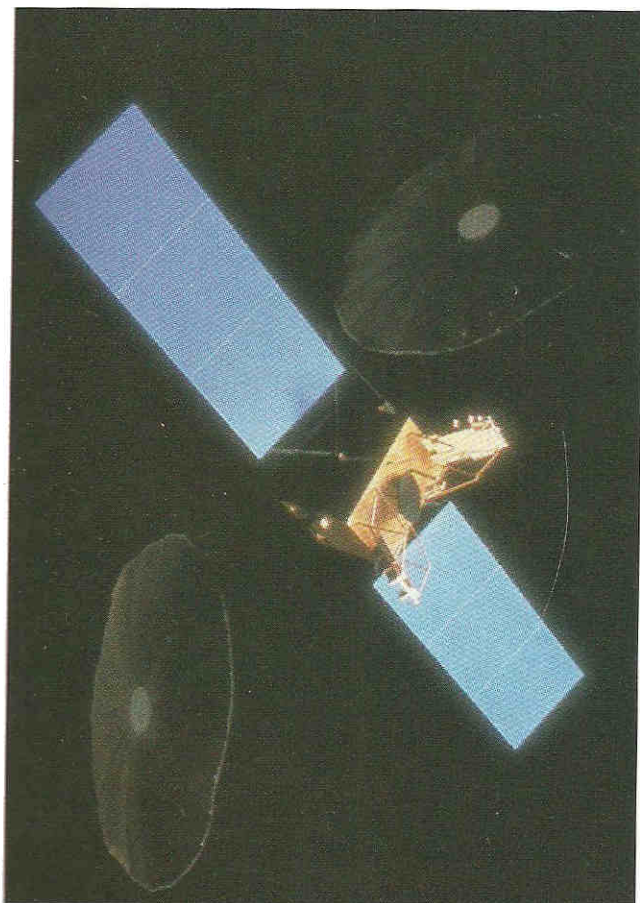
U.S. MARINE DIRECTORY

• OWNERS • OPERATORS • SHIPYARDS

MARINE LOG

July 1994

Vol. 99 No.7



OPERATIONAL NEXT YEAR this AMSC satellite will include 200 miles of U.S. coastal waters in its footprint—opening up new competitive communications possibilities for shipowners (p. 21)

21 SATCOM: The alternatives open up
Shipowners can choose from a widening range of satellite communications services—not all of them provided by Inmarsat

30 U.S. specialists hone their diesel repair skills
Diesel manufacturers have been strengthening their U.S. networks of authorized repairers

38 Catalina Express introduces high speed, high tech boats
Two FRP-hulled ferries offer a 32 knot service to Catalina Island

40 Dubai adds another dry dock
With 1.85 million dwt of dry dock capacity already, the giant Mid East repair yard is adding a 40,000 dwt floating dock

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JUNE 1994



53RD ANNUAL YEARBOOK & MARINE REVIEW

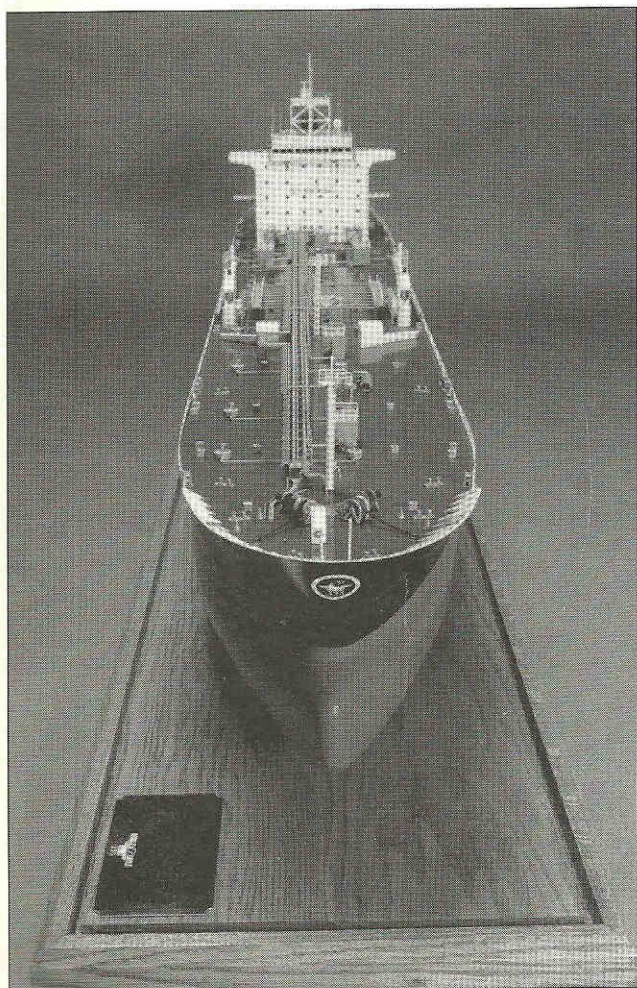
ANALYZING UPS, DOWNS, TURNAROUNDS AND TRENDS IN:

- COMMERCIAL AND NAVY SHIPBUILDING
- DEEP SEA SHIPPING • OFFSHORE • INLAND WATERWAYS
- CASINO BOATS • CRUISING • MARINE TECHNOLOGY

MARINE LOG

June 1994

Vol. 99 No.6



MODEL FOR FUTURE U.S. SHIPBUILDING: As Navy shipbuilding budgets shrink, American shipyards are re-entering the commercial arena with designs like Newport News Shipbuilding's Double Eagle (p 43).

- 25 Clinton's health plan for the U.S.-flag fleet**
A slimmer subsidy plan with fewer strings attached may slow the flow of ships from the U.S. register
- 31 World cargo fleet is growing**
Despite mixed trading results in most markets, new-building deliveries are still outpacing scrapping
- 35 World shipyards increase output**
Improved productivity and planned capacity increases point to softer newbuilding prices
- 38 U.S. Navy starts looking leaner**
Though the CVN-76 survives the Seawolf program's chances seem slender
- 43 U.S. yards win commercial work**
A letter of intent for four commercial products tankers brings new hope for U.S. shipbuilding
- 49 Offshore: U.S. Gulf makes comeback**
There's new life in the one-time "Dead Sea"
- 53 Barge building boom is on hold**
Though the barge fleet is aging, renewal won't pick up until operators' earnings get better
- 57 Needed: More cruise ships**
In one sector of shipping, capacity creates demand
- 62 Casino boat boom leads to more and bigger boats**
Maximizing casino space is the name of the game
- 66 Technology and the environment**
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Reporting on Marine Business and Technology

MARINE LOG

MAY 1994



CLEANING UP AFTER OPA

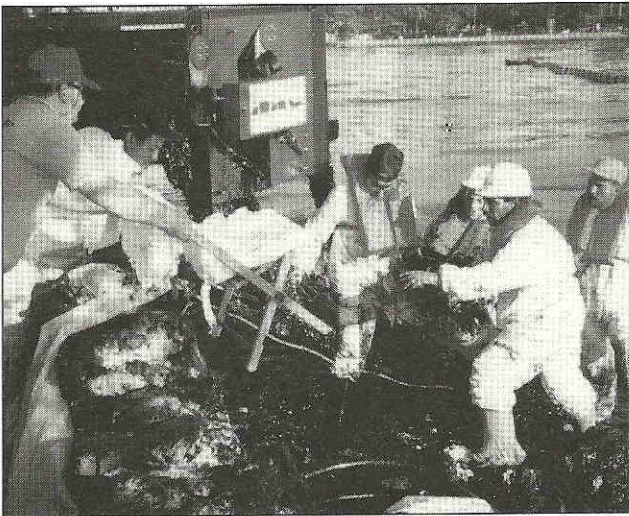
TANKER TECHNOLOGY:
DOUBLE HULLS AND MORE

GREEK SHIPPING: WHAT NEXT?

MARINE LOG

May 1994

Vol. 99 No.5



OPA '90 has encouraged development of a new U.S. oil spill response and clean-up infrastructure. Cover photo shows NRC crew at work in Puerto Rico (p. 32)



Mobil Eagle boasts sophisticated features and systems that go way beyond the minimum standards set by OPA '90 and MARPOL (p. 19)

- 19 Tankers: Beyond double hulls**
Double hulls are just a part of what owners are demanding from the new generation of tankers
- 26 LR launches ShipRight**
A package of new procedures promises "a new dimension in ship safety"
- 32 Cleaning up after OPA**
The Oil Pollution Act of 1990 has led to creation of a whole new oil spill response and clean-up industry
- 40 Greek shipping: What next?**
After sustained buying, Greeks have lately been selling as many ships as they've been acquiring
- 48 Ferries as a tourist draw**
North Carolina is refurbishing and expanding its ferry fleet as a means of attracting more visitors
- 50 Krupp MaK introduces the M32**
The successful M20 now has a 600 bhp/cyl "big brother" that will eventually replace the M453C
- 54 Vasa 46 achieves reliability goals**
Wärtsilä Diesel's 1,230 bhp/cyl diesel has now achieved its design targets for reliability
- 60 Machine tools for ship repair**
Switching a newbuilding yard to repair demands portable and flexible machining capabilities
- 63 What's new in marine electronics?**
A look at new products from leading manufacturers
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SUNY Maritime adds to its training facilities

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- Annual Yearbook & Maritime Review Issue

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Reporting on Marine Business and Technology

MARINE LOG

APRIL 1994



OFFSHORE WHY THE GULF IS LOOKING GOOD AGAIN

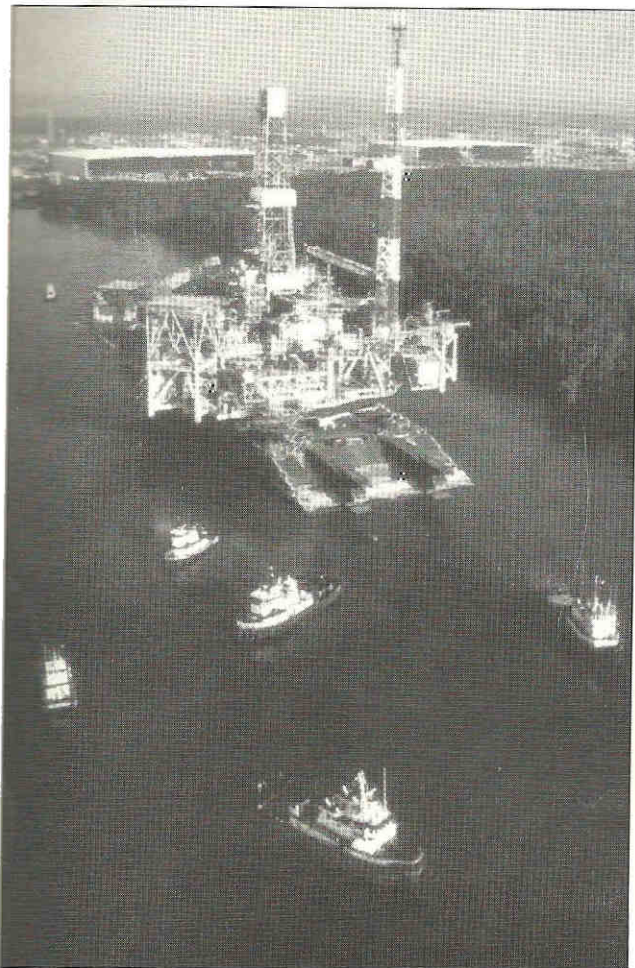
HOW TO BUY SMARTER
IN THE BUNKER MARKET

WHAT'S IN THE
REGULATORY PIPELINE?

MARINE LOG

April 1994

Vol. 99 No.4



Production from deeper waters is helping boost Gulf of Mexico offshore activity. Cover photo shows Tidewater boats moving the Auger field TLP, designed for operation in 2,860 ft waters (p. 16)

- 16 Offshore: The Gulf scene brightens**
Growing gas demand, increased activity by independent drillers and moves into deeper water production will mean happier faces at next month's OTC
- 22 Big barge**
A \$4.5 million, 65,000 barrel double skinned unit launched last month by Zidell is the U.S.'s largest inland liquid barge
- 24 Getting real on residual fuel**
It's what's left over after the good stuff has been sold. But it's cheap and at least it burns.
- 26 Lube program extends diesel life**
Working with Mobil, Liberty Maritime is making big savings on diesel replacement parts
- 27 BP develops new tools for two-stroke diesel research**
BP researchers are gaining new insights into what goes on inside the diesel
- 30 Navy budget: No comfort for yards**
Five year shipbuilding plan won't sustain the war-ship building industry base
- 37 Controlling satcom costs**
Sophisticated messaging systems are one way to manage the cost of satellite communications
- 43 More IMO regulations on the way**
IMO Secretary General William A. O'Neil is pushing for faster passage of changes to conventions
- 47 Navy products in focus**
A preview of the ASNE trade show being held in Washington, D.C., April 27-29

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- Tanker technology

13 HAZIRAN 1994

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March 1994

MARINE LOG

Reporting on Marine Business and Technology

SHIP REPAIR

World yards gear up to meet
increased demand

WATERWAYS

Barge fleets battle
floods, ice ... and
tax threats

FLAGS

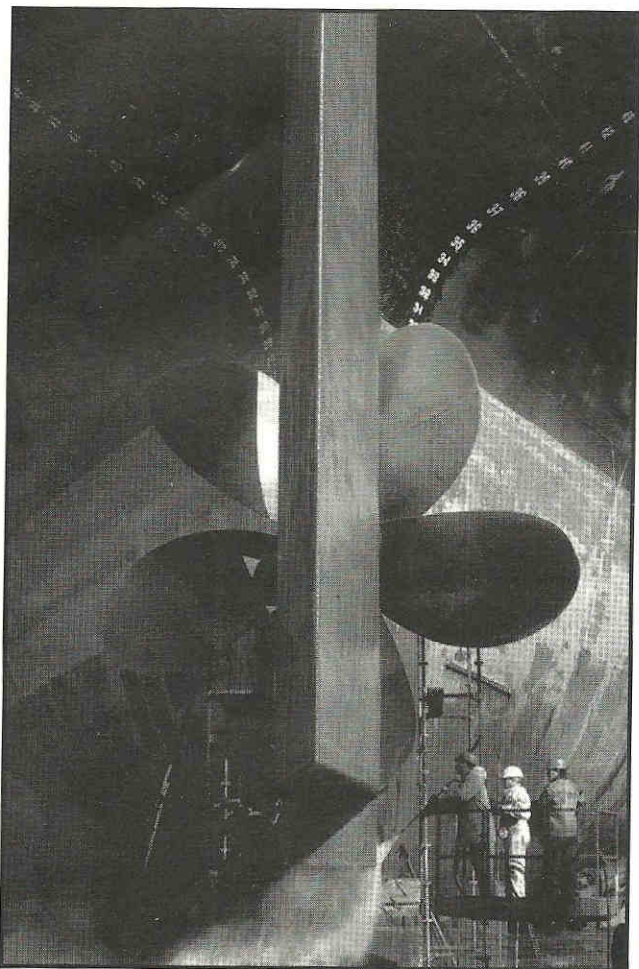
New pressures on
open registries to
enforce the rules



MARINE LOG

March 1994

Vol. 99 No.3



Cover photo by Joe Evangelista shows a VLCC in dry dock at Solisnor, Portugal. World repairers are looking for a growing demand for VLCC dockings to boost industry fortunes

- 18** **Flags: The good, the bad and the so-so**
Not all flags are alike—and these days shipowners have a wide range of ship registry choices
- 29** **World repair yard capacity grows**
With an upturn in business from large tankers soon likely as a result of tougher survey requirements, more repairers are planning to add dry docks
- 41** **U.S. yards show a flair for repair**
American shipyards are continuing to expand their share of the commercial ship repair and conversion market
- 49** **Waterways operators battle back**
After last year's floods and this year's ice, U.S. inland waterways operators are regrouping and looking for better times ahead—and a friendlier attitude from Washington, D.C.
- 56** **Sorting out the Inmarsat satcom choices**
Inmarsat now offers shipowners four very different satellite communications options.
- 62** **Rethinking the rules for older tankers**
The Coast Guard is reconsidering what to do about pre-MARPOL tankers after one proposed fix appears to actually *increase* pollution hazards
- 67** **Making it easier for U.S. yards to buy on the world market**
A study will examine how international standards for shipbuilding components and material match up with Coast Guard requirements

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- U.S. Navy Shipbuilding
- Regulations and Legislation

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February 1994

MARINE LOG

Reporting on Marine Business and Technology

CRUISING THE BIG GET BIGGER

**WHAT CASINO OPERATORS
DON'T KNOW ABOUT RIVERBOATS**

**SHIP MANAGERS: WHICH QUALITY
CODES MAKE SENSE?**



MARINE LOG

February 1994

Vol. 99 No.2



Carnival Cruise Lines has ordered the sixth sistership for its Fantasy (above and on cover) and RCCL has also added to its newbuilding portfolio as the cruise market keeps growing (p.13)



Corrosion in critical areas is a primary focus of tough new surveys being introduced by classification societies and others as the world fleet ages (p. 37)

- 13 Cruising: The big get bigger**
With cruise bookings still rising, both Carnival and RCCL are ordering further newbuildings
- 16 Azipod for icebreaking tanker**
An Arctic tanker is now equipped with the world's largest single azimuthing thruster propulsion system
- 19 Which QA code for ship managers?**
"Quality" is the buzzword in third party ship management. But what's the best way of assuring it?
- 29 Can casino operators learn the maritime game?**
Gaming companies are now a major force in the casino boat business—raising worries about the extent of their marine expertise
- 37 Tough new surveys target corrosion**
Too large a percentage of the aging world fleet is simply rusting away, making corrosion a main focus of new, stricter survey programs
- 49 Fighting rust: A steelmaker's view**
Inexa Profil offers advice on selection, preparation and post-treatment of rolled and welded stiffeners
- 54 Reducing injuries and accidents**
Massachusetts Maritime Academy opens a dialogue on operational safety and health
- 56 Repairing the Noordam**
Avondale Shipyards gets a damaged cruiseliner back to sea in rapid time
- 58 Finding finance for boats and barges**
A look at current lending patterns in the Brown Water market

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- American inland waterways

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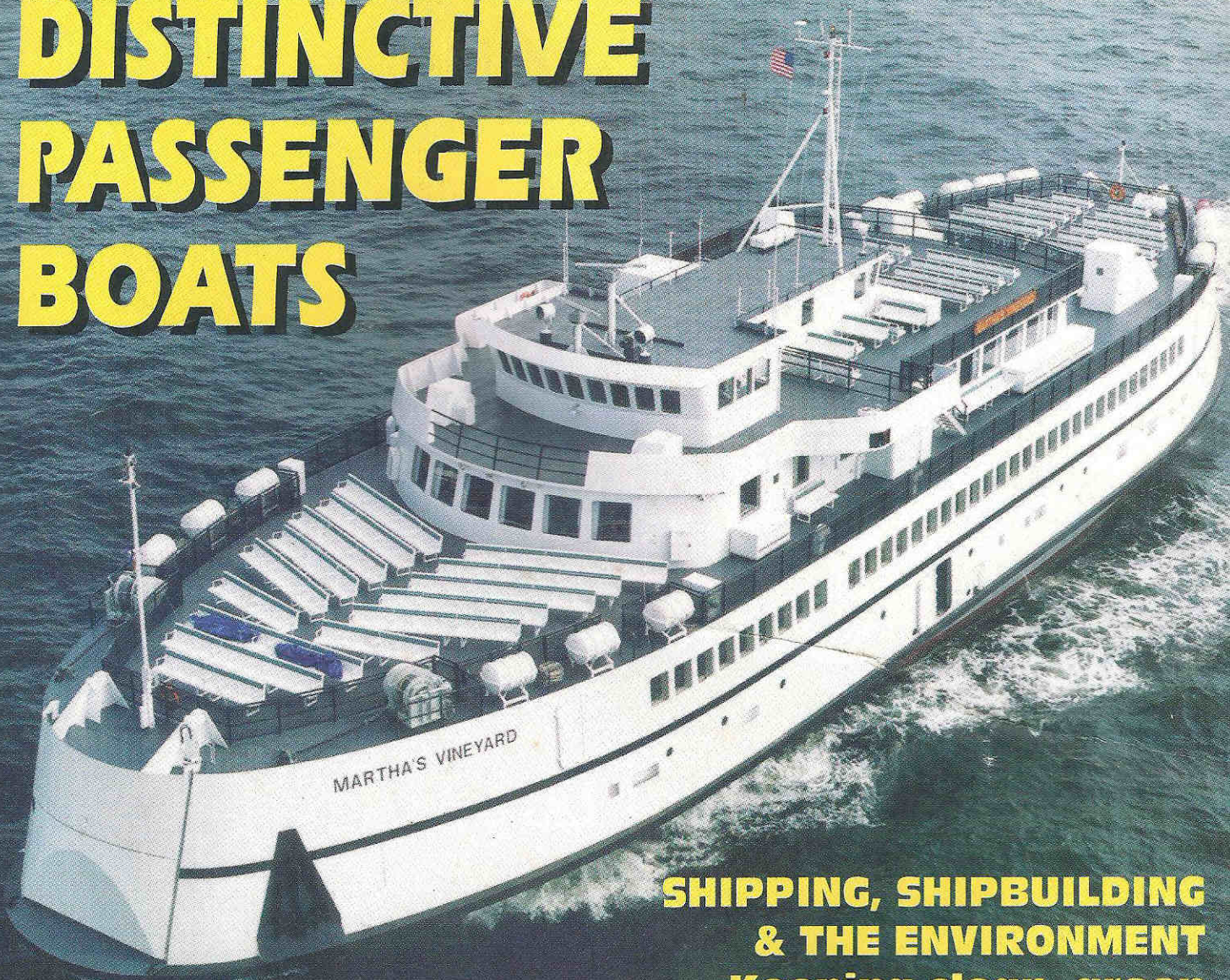
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January 1994

MARINE LOG

Reporting on Marine Business and Technology

DISTINCTIVE PASSENGER BOATS



**SHIPPING, SHIPBUILDING
& THE ENVIRONMENT**
Keeping clean, green
... and in compliance

MARINE ELECTRONICS
What's new in navigation
and communications

MARINE LOG

January 1994

Vol. 99 No.1



Ferry Martha's Vineyard (above and on cover) is among the Distinctive Passenger Boats delivered in the past year (p. 32)



A limited partnership formed by former Navy Secretary John Lehman promises to put Sperry Marine on a new heading (p. 13)

- 13 New course for Sperry Marine**
After an acquisition put together by former Navy Secretary John Lehman, Sperry Marine is poised to enter new market areas with new products
- 15 GMDSS finds a friend in the House**
U.S.-flag operators may soon have good reason to equip their ships with Global Maritime Distress and Safety System equipment
- 18 Electronic charts: Where are we?**
Andy Norris of Kelvin Hughes clarifies which electronic charting systems can do what
- 24 Racal-Decca's latest ARPA**
The BridgeMaster 340 combines an extremely clear daylight display with sophisticated capabilities and ease of operation
- 26 Keeping clean and green**
Environmental regulations are a number one management priority for both shipowners and yards
- 32 Distinctive passenger boats**
Our annual portfolio features gaming boats, ferries, dinner boats and an impressive crewboat
- 44 What comes after casino boats?**
Specialist yards are winning orders for ferries and finding renewed interest from offshore operators
- 48 New 600 hp Cummins diesel**
The KTA19-M3 promises more power, more torque, better fuel economy and lower emissions
- 51 PVA show preview**
An advance look at what's on show at this month's Passenger Vessel Association convention in Orlando

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- Casino Boats
- Coatings & Corrosion Control

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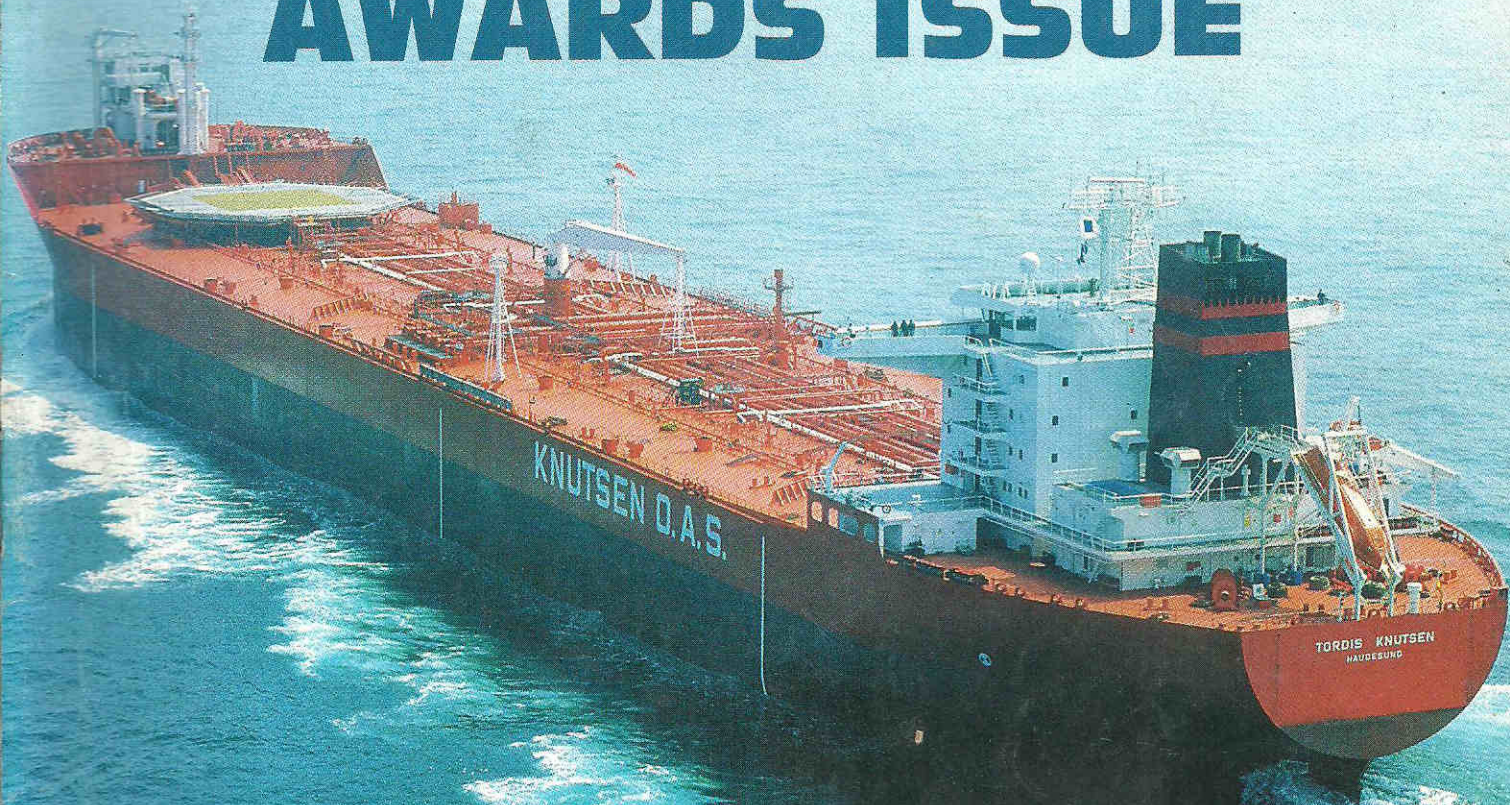
December 1993

MARINE LOG

Reporting on Marine Business and Technology

1993

AWARDS ISSUE



DISTINCTIVE SHIPS

A PORTFOLIO OF IMPRESSIVE DELIVERIES
FROM THE WORLD'S LEADING SHIPBUILDERS

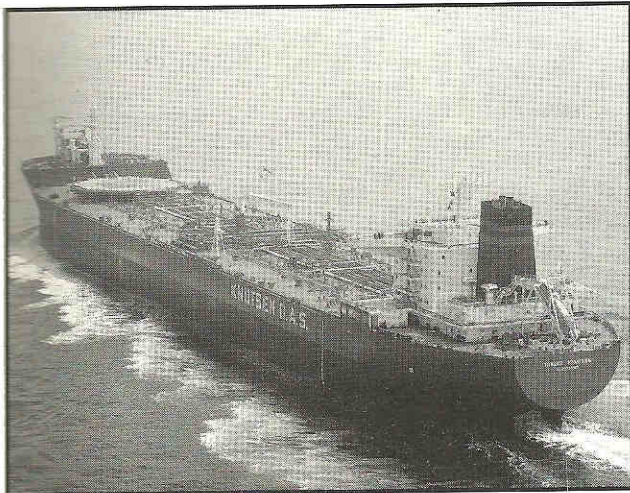
**INNOVATIVE MARINE
PRODUCTS**

TECHNOLOGY TO BOOST PRODUCTIVITY, PROFITS,
SAFETY AND ENVIRONMENTAL PROTECTION

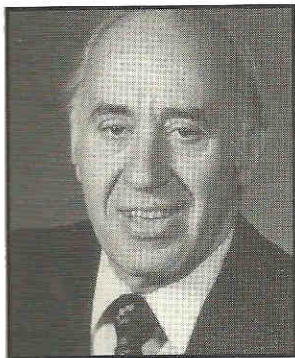
MARINE LOG

December 1993

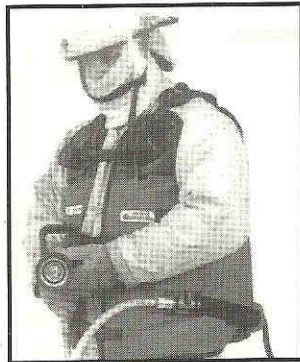
Vol. 98 No.12



Shuttle tanker Tordis Knudsen (above and on cover) leads this year's parade of Distinctive Ships from shipyards around the world (p. 27)



Arthur Imperatore is adding new boats and new routes to his New York ferry system (p. 20)



Innovative Products featured this year include this unique means of dispensing foam (p. 38)

13 P&I prospects are looking brighter
An emphasis on sound underwriting principles by P&I insurers means that quality shipowners may get a pleasant surprise when they renew their P&I cover

18 U.K. offers "official" electronic charts
The U.K. Hydrographic Office is making rasterized Admiralty Charts available on CD-ROM

20 Imperatore plans further ferry routes
The man who "referryed" New York is adding new boats and further services

27 Distinctive Ships
This year's portfolio of memorable tonnage from world yards includes the world's first and the world's largest double hulled VLCCs, the first LNG carrier with the SPB containment system, an ice-breaker with a summer job, a cross-Channel ferry designed as a Chunnel beater, an FPSO and a cement carrier that both have gas turbine power plants, plus other significant vessels

37 Innovative Marine Products Awards
Our annual selection of products designed to enhance productivity, profitability, marine safety and environmental protection includes a system that promises to revolutionize ship design, an antifouling paint with no biocide, a compact gas turbine, night vision equipment, an unusual new way to dispense firefighting foam and oil dispersants, an answer to the problems of dealing with shipboard sludge and a range of other products that demonstrate the resourcefulness of the marine equipment industry

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- Marine Electronics
- Ship Management

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October 1993

MARINE LOG

Reporting on Marine Business and Technology

**A \$200 million-plus a year
American growth industry**

KEEPING THE CRUISE FLEET SHIPSHAPE

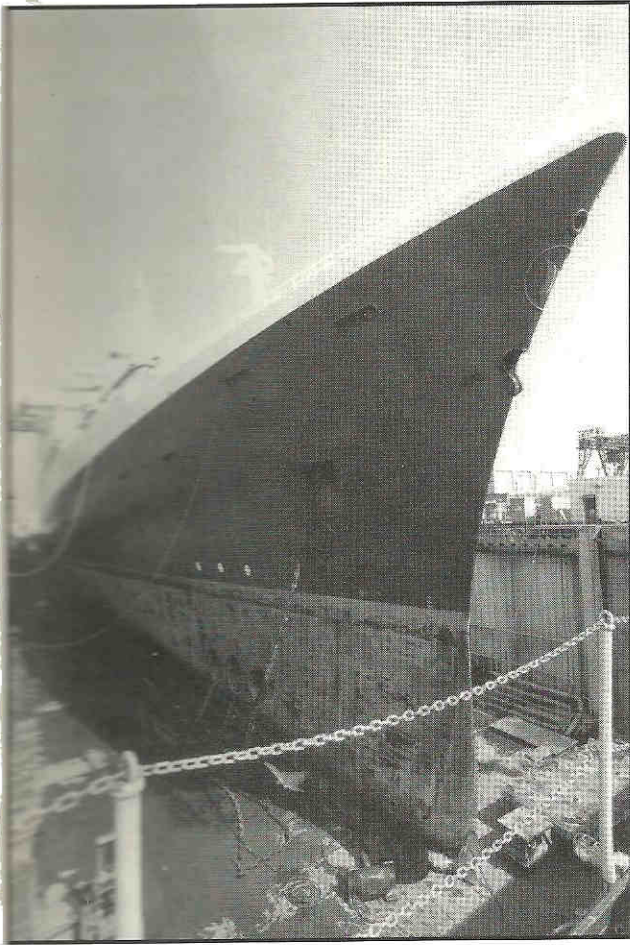
**YARDS AND DESIGNERS
WIN BIG ON CASINO BOATS**

**HOW "ENGINE FRIENDLY" IS
YOUR BUNKER FUEL?**

MARINE LOG

October 1993

Vol. 98 No.10



Seen (above and on cover) in dry dock at Newport News, the Norway is one of the growing number of cruise vessels to undergo repair and refurbishment work in the U.S. Keeping the cruise fleet shipshape is now a \$200 million a year business for U.S. yards and specialist contractors (p.17)

12 How to win on casino boats? Build them!

Shipyards and specialist design firms are among the big winners in a gaming boat building splurge that shows no sign of slowing

17 Keeping the cruise fleet shipshape

Cruise ship repair, maintenance and refurbishment has led to the emergence of a growing infrastructure industry

26 European yards set for order upturn

Europe's shipyards have an impressive portfolio of designs to offer owners once newbuilding demand makes its predicted turnaround, but yards in western Europe face growing competition from their eastern European neighbors

40 How "engine friendly" is your fuel?

New software enables shipowners to assess the quality and consistency of bunker supplies from a new standpoint

43 Gas turbines for fast ferries

A look at the propulsion installations in two important new ferry designs

45 ABS rethinks hull structural design

The SafeHull system takes a "first principles" approach to ship design

47 Cranes, hoists and winches

Deck machinery plays a vital part in ensuring vessel productivity

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- U.S. work boat yards
- Marine heating, ventilating and air conditioning

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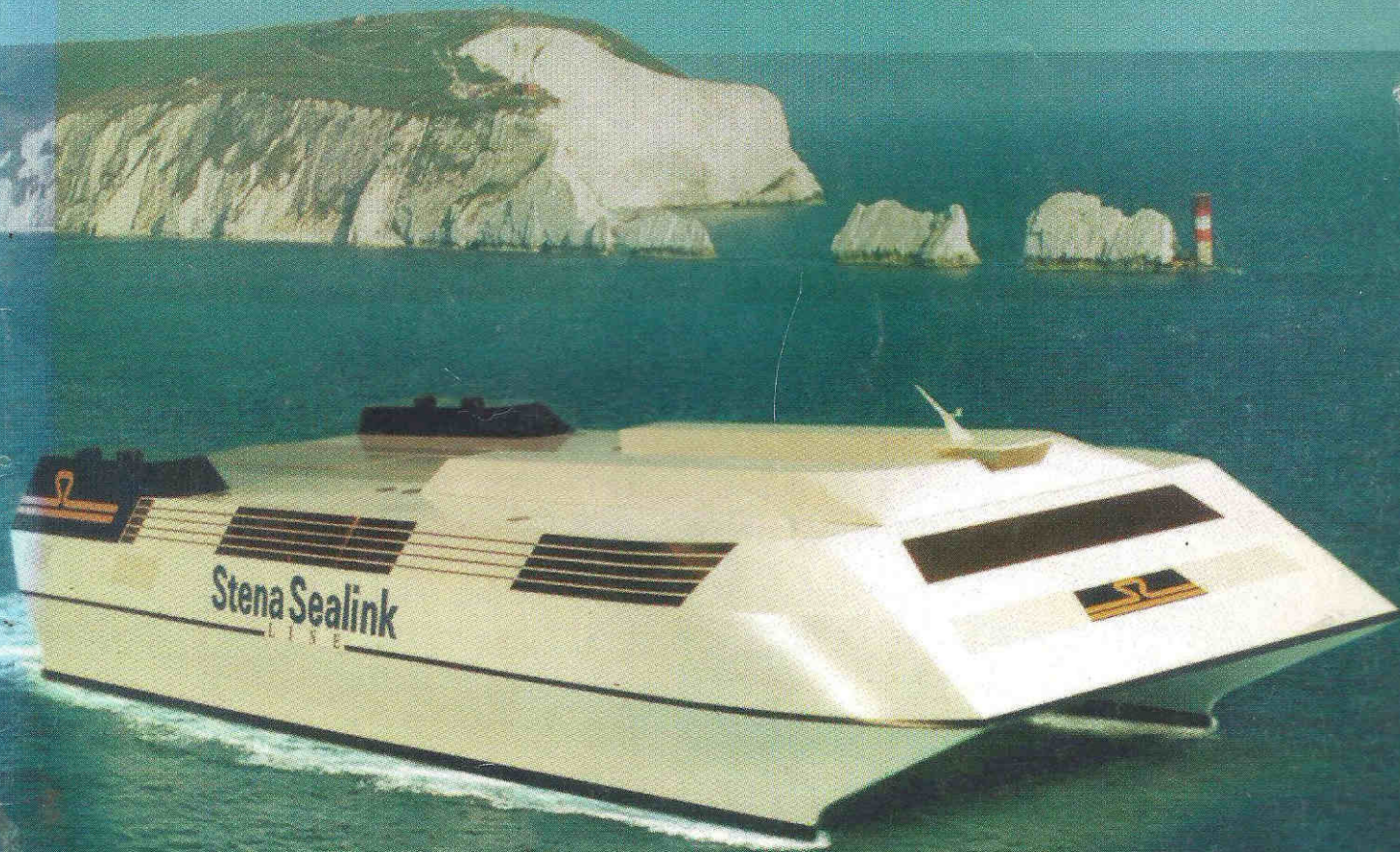
SEPTEMBER 1993

MARINE LOG

Reporting on Marine Business and Technology

ENTER THE MEGA FERRIES!

NEW ERA IN HIGH SPEED SHIPPING



HOW U.S. YARDS CAN WIN COMMERCIAL ORDERS
THE BARGE INDUSTRY AFTER THE FLOODS

1893 • CELEBRATING SNAME'S 100th BIRTHDAY • 1993

MARINE LOG

September 1993

Vol. 98 No.9



New high speed ferries ordered Finnyards by Stena are so huge they would fill a soccer stadium (p. 16)



Ready to start work on waterways renovation following this summer's floods, the Corps of Engineers' new flagship is the largest ever diesel towboat

- 16 Mega ferries promise new era of high speed transportation**
Stena's order for two ultra-large 40-knot ferries could mark a change in shipping as significant as aviation's switch from propellers to jets
- 24 Navatek and Lockheed team up**
Advanced technology developed for the defense industry is a feature of Navatek's latest SWATH
- 26 Getting the U.S. back into commercial shipbuilding**
After decades of warship construction, America's major shipyards have to start competing in the world merchant ship market once more
- 39 Mississippi**
The Corps of Engineers has a new flagship—the largest diesel towboat ever
- 40 Barge business starts on the road back**
The inland waterways industry is picking up the pieces after a summer of disastrous floods
- 47 Cyprus set to greet the world**
A look at the maritime center that's home to the world's third-largest open-registry fleet
- 58 Kværner integrated bridge**
A products tanker gets an advanced "one man bridge" installation
- 62 SNAME celebrates its centenary**
...and MARINE LOG takes a look at the American marine industry of the 1890s and at this year's SNAME trade show

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- How U.S. yards and suppliers support U.S.-based cruise operations
- Propulsion '93

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MARINE LOG

Reporting on Marine Business and Technology

SATCOM/SATNAV: MANAGING THE DATA FLOW

**GMDSS
decisions need
making soon**

**Bunker buying
without tears**

**Valve & pump
directory**



IN THIS ISSUE:

**U.S. MARINE
DIRECTORY**

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MARINE LOG

July 1993

Vol. 98 No.7



Cover photo shows officer making use of one of the latest satcom systems—Inmarsat M. New systems and services make it more important than ever that shipowners pick the satcom installations that best suit their individual requirements (p. 19)



State of the art integrated navigation and control system is fitted in cruise ferry *Silja Europa*. Advances in accuracy, acquisition and display of sat nav data are bringing the biggest changes in navigational philosophy since the 18th Century (p. 11)

11 Satnav: GPS brings navigation into the 21st Century

Today's technology could call for a complete reappraisal of the basic philosophy of marine navigation

16 GMDSS deadlines draw nearer

It's the biggest change in marine communications since radio—and implementation has started

19 Picking the right satcom

New Inmarsat services broaden shipowners' choice of satcom installations

24 Bunker buying without tears

An international bunker trader gives some hints on how to buy the right fuel at the right price

26 Marine valves and pumps

Directory of valve and pump manufacturers

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JUNE 1993

MARINE LOG

Reporting on Marine Business and Technology

52nd ANNUAL YEARBOOK & MARINE REVIEW



WHAT'S AHEAD?

TRENDS AND DEVELOPMENTS IN

- U.S. & WORLD SHIPPING & SHIPYARDS
- U.S. NAVY • MARINE TECHNOLOGY
- MARITIME POLICY

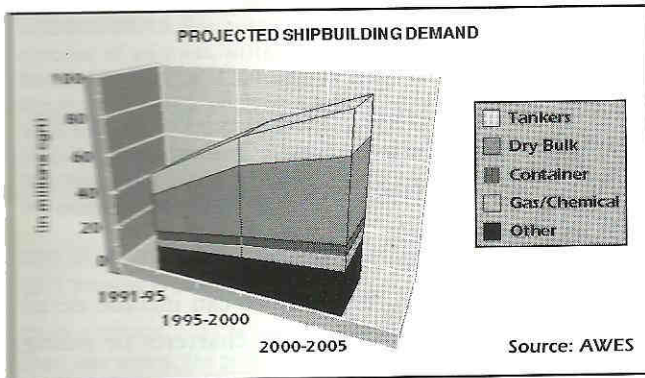
MARINE LOG

June 1993

Vol. 98 No.6



Electronics outfit of ship pictured on our cover includes a Racal Recorders VER (Voyage Event Recorder)—a “black box” that keeps a continuously updated record of radar, gyro heading and other data



World shipbuilding demand is projected to rise dramatically—but right now yards are hungry and offering some attractive newbuilding prices

13 U.S. Navy shipbuilding: Aspin whets his ax

A 340-ship U.S. Navy is beginning to look like a very real possibility

27 Shipowners focus on quality

In a lean market, international shipping faces continuing pressures to improve quality—while U.S.-flag operators look to Washington for a meaningful U.S. maritime policy

35 World shipyards sharpen prices

Though a building boom is widely predicted for the future, yards are currently competing hard to win orders

49 ‘Black technology’ in a green climate

The wraps are coming off previously classified military technology. Some of it could help protect the marine environment.

40 The challenge of defense conversion

Major U.S. yards must make a switch to merchant ship construction to compensate for reduced Navy business

54 Gaming boat revenues soar

In the right market, a casino boat can repay its newbuilding cost in a few short months

62 Offshore outlook brightens

Natural gas demand is encouraging increased offshore industry activity

71 Cruise market faces renewed Washington challenges

Despite its contribution to the U.S. economy, the cruise fleet faces the threat of new restrictions

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- Valves and Pumps

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MAY 1993

MARINE LOG

Reporting on Marine Business and Technology

TANKERS: DOUBLE HULL DELIVERIES START ACCELERATING



**FIGHTING FIRE WITH FOG
SPERRY SYSTEMS ENHANCE
BRIDGE SAFETY**

**MORE GAMING BOATS
REACH THE RIVERS**

**IN THIS ISSUE:
SCANDINAVIAN
& FINNISH
MARINE TECHNOLOGY**

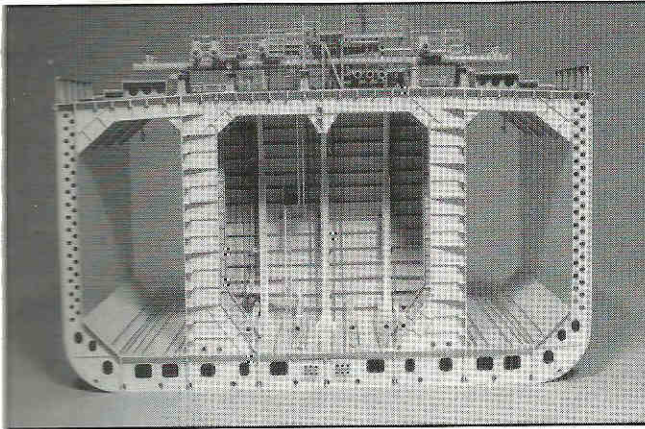
MARINE LOG

May 1993

Vol. 98 No.5



Newbuilding nearing completion at one of Scandinavia's most successful yards—Burmeister & Wain—is as familiar a Copenhagen sight as the famed Little Mermaid (p. 23)



Double hulls are becoming the norm in tanker construction. This is the Lindenau shipyard solution (p. 43)

13 Nordic maritime industries look to world markets

With a wide range of advanced products in their portfolios, Scandinavian and Finnish marine equipment suppliers are competing hard to win export markets—and gaining some major successes. In this issue we take a country-by-country look at some of the region's leading suppliers:

NORWAY	p. 13
DENMARK	p. 23
SWEDEN	p. 25
FINLAND	p. 31

37 Double-hull tanker deliveries accelerate

The "next generation" of tankers is no longer on the drawing board, it's putting out to sea.

45 More gaming boats reach the rivers

The big winners from the casino boat boom are the U.S. shipyards who are revising their estimates for gaming boat demand—upwards.

48 Integrated bridges enhance tanker safety

Sperry Marine reports that tanker owners are opting for sophisticated bridge systems for more than economic reasons alone.

51 Wider options open up for satcom users

IDB and AMSC have teamed up to offer users a new, lower cost digital service within the footprint of AMSC's new MSAT satellite.

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- Annual Yearbook and Marine Review issue

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POSTMASTER: Send address changes to Marine Log, P.O. Box 466, Village Station, New York, N.Y. 10014.

APRIL 1993

MARINE LOG

Reporting on Marine Business and Technology

SHIP REPAIR THE COMPETITION HEATS UP

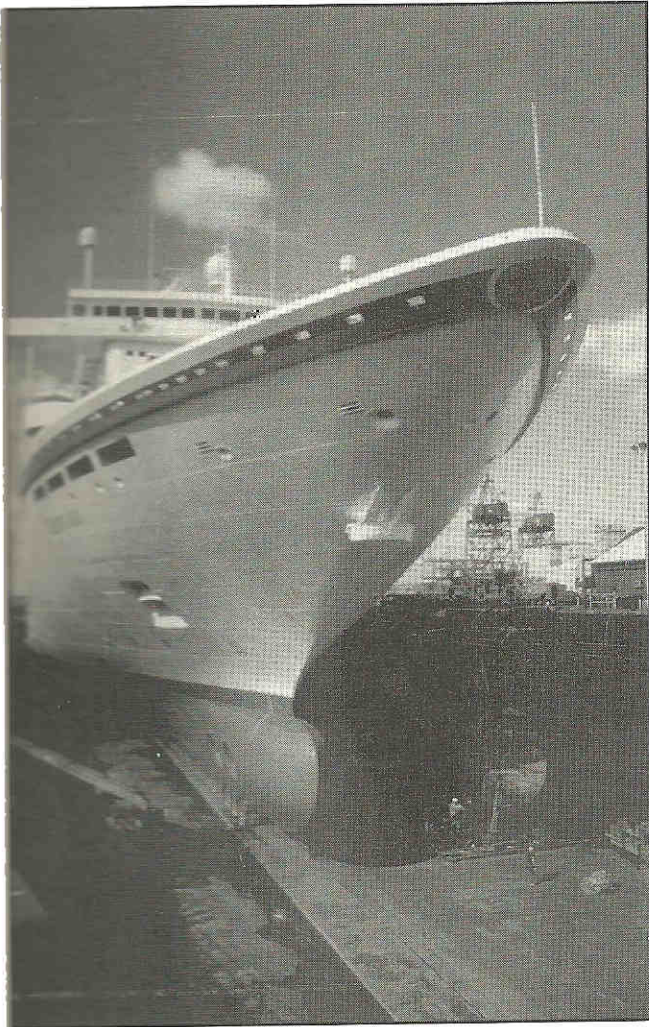
NAVY PLANS FAVOR SEALIFT
AND DEFENSE CONVERSION

DIESEL DESIGNERS CLASH
ON NO_x STANDARDS

MARINE LOG

April 1993

Vol. 98 No.4



Cover photo shows a cruise liner under repair at Newport News Shipbuilding, Newport News, Va.

- 17 U.S. repairers win commercial orders**
U.S. shiprepairers are offsetting falling Navy orders with commercial work—including export business.
- 29 World repair prices soften**
Long-term trends point to firmer prices, but for now, shipowners are in a buyer's market.
- 39 Warship yards think defense conversion**
U.S. yards are hoping defense conversion funds and sealift work will smooth a transition to commercial newbuilding.
- 50 OTC has a global focus**
When offshore professionals meet in Houston next month for OTC, they may be as interested in what's happening in Russia as in Gulf developments.
- 53 Battle looms over NOx limits**
Wärtsilä Diesel is opposing a move to link diesel emission limits to engine speed.
- 54 More flexibility for Foran**
An upgraded version of Senermar's ship design and production software can be run on more platforms.
- 56 Fireboat for New York City**
Gladding-Hearn delivers the *Kevin C. Kane*.
- 61 Previews: Ship Repair '93 and ASNE**
A look at what's being promoted at Ship Repair & Marine Maintenance '93 (p.61) and ASNE Day (p.66).

Departments

- 3 Editorial
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- 73 U.S. Shipbuilding Contracts
- 75 Letters

- 76 Product Literature
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- 77 Marine Buyer's Guide
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- 88 Marine Industry Calendar

Next Month

- Tanker technology
- Marine electronics
- Scandinavian maritime industries

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MARCH 1993

MARINE LOG

Reporting on Marine Business and Technology



HENRY HUDSON

COMMUTER BUSINESS BOOSTS FERRIES

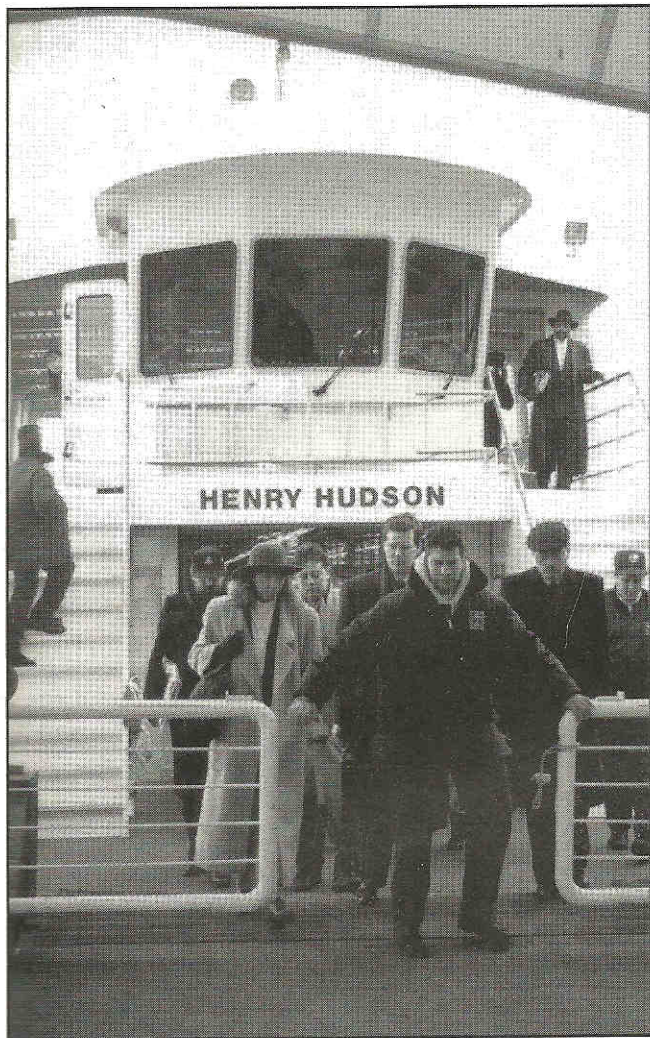
FINDING FINANCE

IMPROVING SHIP SAFETY

MARINE LOG

March 1993

Vol. 98 No.3



Cover photo by Joe Evangelista shows commuters leaving the latest addition to the Hoboken Ferry fleet, the *Henry Hudson*, recently delivered by Gladding-Hearn

17 Commuter boost for ferries
Increased ridership is encouraging ferry operators to expand their fleets.

22 Car ferries that stress speed
A new generation of large, fast ferries aims to take a slice of the long-haul auto/truck ferry market.

26 ISTEA and ferry funding
The Intermodal Surface Transportation Efficiency Act of 1991 is already aiding some ferry projects:

29 Safety: What's going right?
Despite well-publicized recent disasters, statistics show the marine casualty picture is improving.

40 AWO set for regulatory storms
The economic outlook favors waterways operators, but the regulatory situation is horrific.

48 Ship financing in a lean market
When times are tough, bankers favor Blue Chip clients and shy away from speculative opportunities.

53 Some lenders like Brown Water
It can be easier to get backing for U.S. domestic operations than for international deep sea ventures.

56 Croatian yards keeping busy
Despite turmoil in the former Yugoslavia, Croatian yards still have a \$1 billion orderbook.

62 Show previews: FERRIES '93 and SASMEX
What's on view at two upcoming specialist trade shows, FERRIES '93 (p. 62) and SASMEX (p. 66)

Departments

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Next Month

- U.S. and worldwide ship repair
- Navy shipbuilding outlook and the Sealift ship program
- OTC

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FEBRUARY 1993

MARINE LOG

Reporting on Marine Business and Technology

FIGHTING THE WAR ON OIL SPILLS

WHAT'S NEW IN RESPONSE
SERVICES AND TECHNIQUES

**CONTROLLING
CORROSION:
NEW ANSWERS TO
AN OLD PROBLEM**

**CRUISE SHIPPING:
STAYING AHEAD IN
THE U.S. MARKET**

MARINE LOG

February 1993

Vol. 98 No.2



Cover shows advanced spill simulator in operation in Norway. A similar unit will soon be in use at Massachusetts Maritime Academy, helping to train a new generation of spill response professionals.



New 77,000 gt ship for P&O was among orders worth over \$1 billion announced by leading cruise lines last month (see p. 12) The outlook for U.S. cruise market is discussed in feature starting on p. 34.

15 America's spill response industry is still growing

Helping shipowners meet the mandates of tough new federal and coastal state legislation, a whole new oil spill response and cleanup industry is starting to take shape.

25 Corrosion: Battle with a ship killer

Stricter classification society controls mean shipowners must pay even stricter attention to preventing and curing corrosion.

34 U.S. cruise market is booming

Rosy U.S. market projections have led to more major cruise ship orders (see p.12), but carrying American passengers means taking risks as well as reaping rewards.

45 Reader round table: Navigation systems

A panel of shipowners and marine electronics experts look at what's involved in retrofitting the latest bridge systems and at how they fit in with shore-based traffic control systems.

52 New use for old ships

Old tankers could help solve waterfront housing problems by carrying modular accommodation units.

53 Building ferries in modules

How B.C. Ferries split construction of two ferries between three shipyards.

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Next Month

- Marine finance
- Ferries
- America's inland waterways
- Marine safety and electronics

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JANUARY 1993

MARINE LOG

Reporting on Marine Business and Technology

READER ROUND TABLE:

**WHAT OWNERS WANT FROM
MARINE ELECTRONICS**



**THE PICK OF THE
PASSENGER BOATS**
OUR ANNUAL PORTFOLIO
OF DISTINCTIVE VESSELS

WHY LNG TANKERS ARE BACK IN DEMAND

MARINE LOG

January 1993

Vol. 98 No.1



Futuristic casino boat *Empress*, shown on cover, is now cruising on the Des Plaines River (p. 13)



A MARINE LOG reader round table meeting brings shipowners and marine electronics specialists together to discuss the implications of new bridge system technology (p. 38)

13 Annual portfolio of distinctive passenger boats

The versatility of passenger boat designers and builders is attested to by a portfolio of vessels that includes designs ranging from a sleek casino boat for the 21st century to a sidewheel steamer that's actually a tug/barge combination.

22 Kings Point gets a new training ship

The U.S. Merchant Marine Academy at Kings Point, N.Y., is taking delivery of a former Navy vessel.

26 World LNG ship orders set to soar

Growing demand for clean fuel has brought existing LNG ships out of lay-up and promises to prompt a surge of orders for these sophisticated tankers.

38 Reader round table: Bridge systems

A panel of shipowners and marine electronics experts discusses the capabilities of the latest marine navigational equipment.

47 What's on display at the NAPVO trade show

A preview of the exhibits at this month's annual convention of the National Association of Passenger Vessel Operators at the Sheraton Seattle Hotel and Towers, January 16-19, 1993.

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- Oil spill response
- Cruise shipping
- Corrosion control

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NOVEMBER 1992

MARINE LOG

Reporting on Marine Business and Technology

America's Gulf Coast: WORKBOAT WORKSHOP FOR THE WORLD



**VASA 20: HEAVY FUEL AUXILIARY
FROM WÄRTSILÄ DIESEL**

EUROPE'S ENVIRONMENT-FRIENDLY VLCC

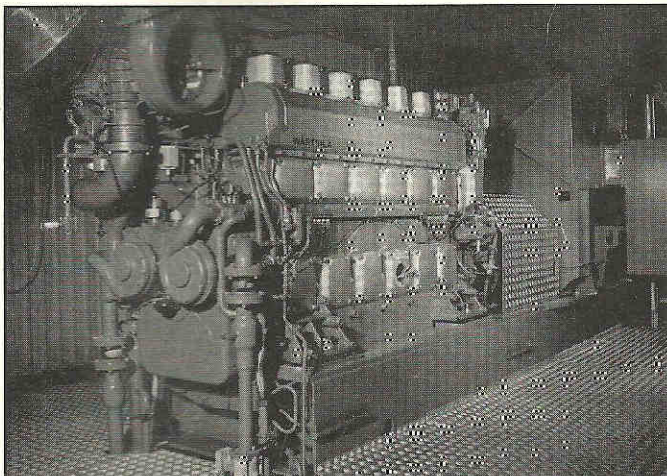
MARINE LOG

November 1992

Vol.97 No.11



Cover shows one of two Fryco-designed and Trinity Marine built fireboats that are now in service in Sao Paulo, Brazil



Wärtsilä Diesel's Vasa 20 has been designed specifically to offer optimum economy in auxiliary applications and to burn heavy fuel

- 17 U.S. Gulf yards break into new markets**
America's Gulf Coast shipyards are busy with a work load that includes significant export orders
- 29 Bunkering trend is to offshore supply points**
It can make sense to bunker at intermediate points where supplies may be more reliable and affordable than at some terminal ports
- 33 Developing lubricants for today's diesels**
Lubricant R&D has to keep one step ahead of designers intent on wringing yet more from the diesel engine
- 41 QA and the ship manager**
Ship managers are facing the challenge of implementing tough new Quality Assurance systems meeting ISO 9000 requirements
- 45 European yards unveil the E3**
Leading European yards are pinning their hopes of tanker orders on an environment-friendly design exceeding some MARPOL/OPA requirements
- 48 Vasa 20: Auxiliary diesel**
Wärtsilä Diesel's latest model is designed specifically as an auxiliary engine offering reliable and economical heavy fuel operation
- 51 Plenty to see at 1992 Work Boat Show**
MARINE LOG previews some of the products and services that will be on show at this year's International Work Boat Show

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- Distinctive ships
- Innovative products
- Military Sealift

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OCTOBER 1992

MARINE LOG

Reporting on Marine Business and Technology

NEW THINKING ON THE BRIDGE

CASINO BOATS A SAFE BET
FOR SHIPYARD BUSINESS

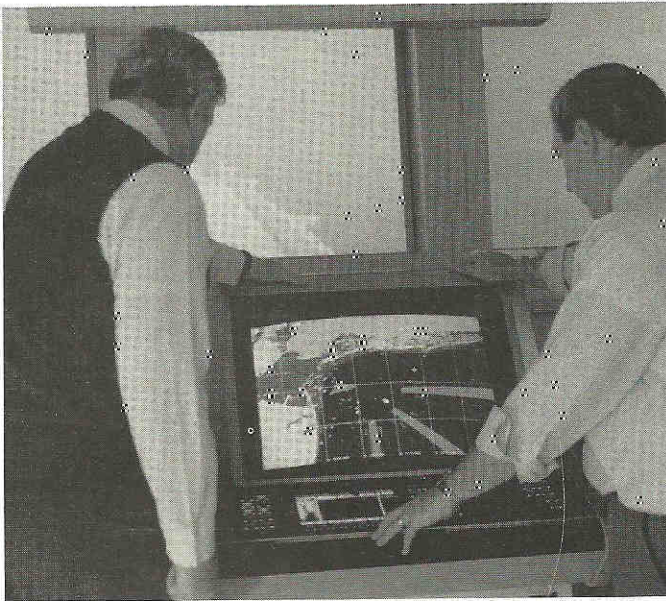
CRUISE LINES SET FOR
CONTINUED GROWTH

IN THIS ISSUE:
NAME SHOW
HIGHLIGHTS

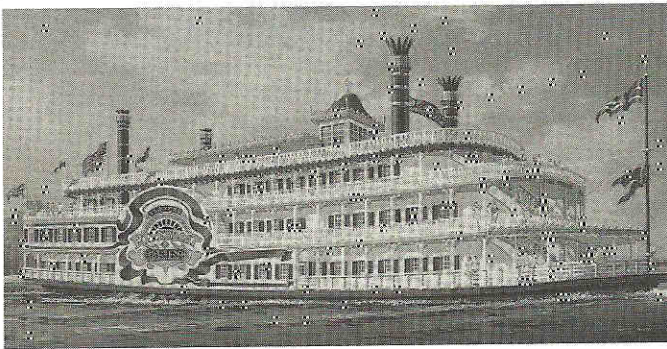
MARINE LOG

October 1992

Vol.97 No.9



Cover shows a Robertson ECDIS unit installed on the MSI-CAORF bridge simulator at the United States Merchant Marine Academy, King's Point, N.Y.



Player's Riverboat Casino is one of a new generation of Mississippi gaming boats.

16 New bridge technology
Soon, ECDIS (Electronic Chart Display and Information Systems) may be as familiar to navigators as the radar

25 Riverboat gaming is back in style
State by state, casino boat restrictions are being lightened opening up a new market for boat operators, designers and builders

33 Cruise fleet adds more ships
Major players are increasing their fleets with ships that push forward the frontiers of both decor and technology

41 Cyprus stresses quality
A new registry fee structure favors younger ships and is funding more technical staff for the world's third largest open register

51 Steady demand for car ferry service
Operators are upgrading their fleets with larger vessels with increased vehicle capacity and improved passenger amenities

59 World's largest tractor tug
The Louisiana Offshore Oil Port has a powerful new defense against the possibility of a pollution disaster

62 SNAME Expo features over 100 firms
A wide range of marine industry hardware and services will be on display at this year's expo

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Next Month

- Gulf yards
- Workboat show preview
- Fuels and lubes

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SEPTEMBER 1992

MARINE LOG

Reporting on Marine Business and Technology

POWER: PICKING THE RIGHT PROPULSION PLANT

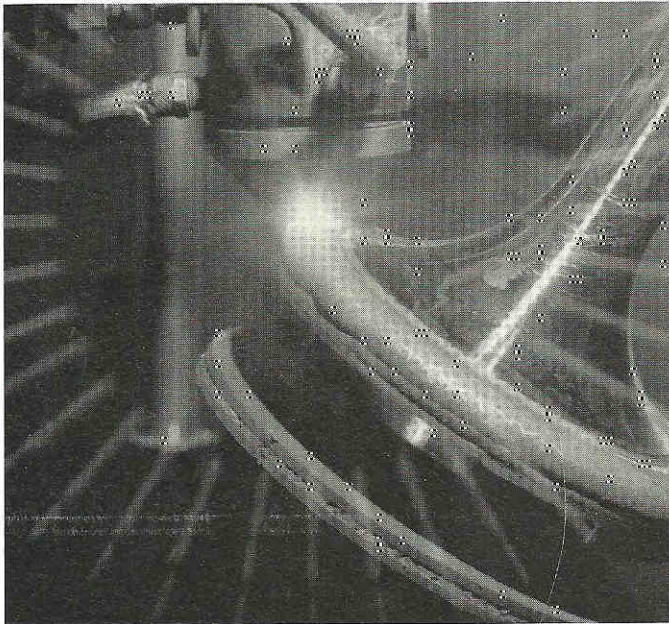
**GERMAN MARINE INDUSTRY
SERVES WORLD MARKET**

**BRIGHTER PROSPECTS FOR
U.S. BARGE BUILDERS**

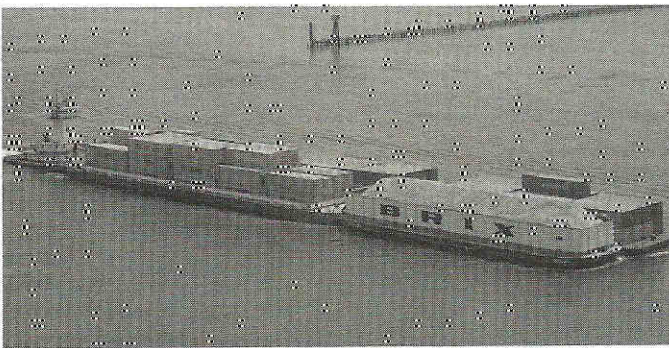
MARINE LOG

September 1992

Vol.97 No.8



Cover shows CNC-controlled plasma arc welding of a diesel engine armored valve cone at MAN B&W in Augsburg, Germany



U.S. barge builders are looking forward to increased demand as the existing barge fleet ages

12 Propulsion: Picking the right power plant

Two-stroke or four, there's a diesel solution out there to fit every marine propulsion need, whether the vessel is a supertanker or a small workboat

22 Barge yards set to meet increasing demand

Nobody is talking boom just yet, but there are some solid signs of a coming pick-up in barge building demand

28 Old ships mean new challenges for coatings R&D

As the world fleet ages, shipowners are looking for coatings that will enhance their image while coming to grips with the never-ending problems of corrosion

40 GMDSS: What's involved?

The Global Maritime Distress and Safety System is up and running, giving shipowners added impetus to leave the days of morse telegraphy behind them

48 Finding world markets for German marine technology

German marine equipment manufacturers and shipbuilders will unveil some impressive offerings at this year's SMM show in Hamburg

62 Mayan Prince: Innovative mini-cruiser

Luther Blount's latest small passenger vessel is packed with big features

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- Riverboat gaming
- Cruise shipping
- Fuels and lubes

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JULY/AUGUST 1992

MARINE LOG

Reporting on Marine Business and Technology



TANKERS: PLAYING BY UNCLE'S RULES AFTER OPA

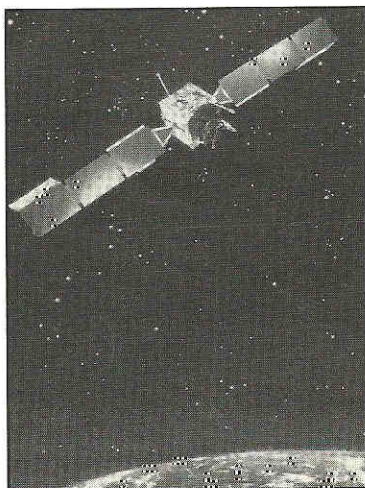
**FINDING NEW ROLES
FOR SATCOM**

**SPANISH YARDS TASTE
PROFITS AGAIN**

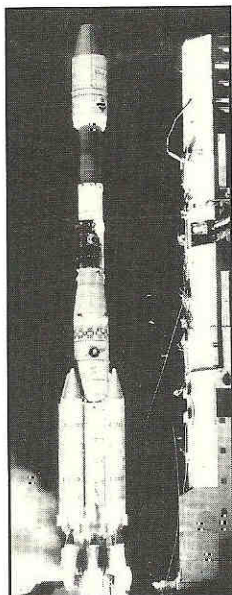
MARINE LOG

July/August 1992

Vol.97 No.7



Lofted by Ariane rockets (right), Inmarsat satellites are now handling communications for half the world merchant fleet (p.14)



14 Satcoms capture half the world merchant fleet

New services, falling costs, GMDSS requirements and big hardware developments all spell continued growth for maritime satellite communications

20 Diesel selection data

Technical specifications of leading marine diesel designs across the complete power spectrum

37 Spanish yards hone their competitive edge

Production rates have risen five-fold and brought profits to AESA's showcase Puerto Real ... now other yards plan to repeat the magic

50 Tankers: Playing by Uncle's rules

OPA has set the stage for the new generation of tankers to have double hulls, wherever they're built and whoever they're ordered by

56 Unitor speeds refrigerant replacement

Unitor is helping ease the transition from conventional shipboard refrigerants to replacements with a less harmful impact on the Earth's ozone layer

57 Staten Island ferries pick Furuno

New York's best-known ferries are being retrofitted with new Furuno 2010 digitized radars

70 Propulsion '92 a success

MARINE LOG's first marine propulsion seminar and show filled an important need



Conoco's *Patriot* is the first double-hulled tanker newbuilding meeting OPA requirements to be delivered to a U.S. owner (p. 50)

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- Marine coatings
- Propulsion trends
- German marine technology

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June 1992

MARINE LOG

Reporting on Marine Business and Technology

51st ANNUAL YEARBOOK & U.S. MARITIME DIRECTORY

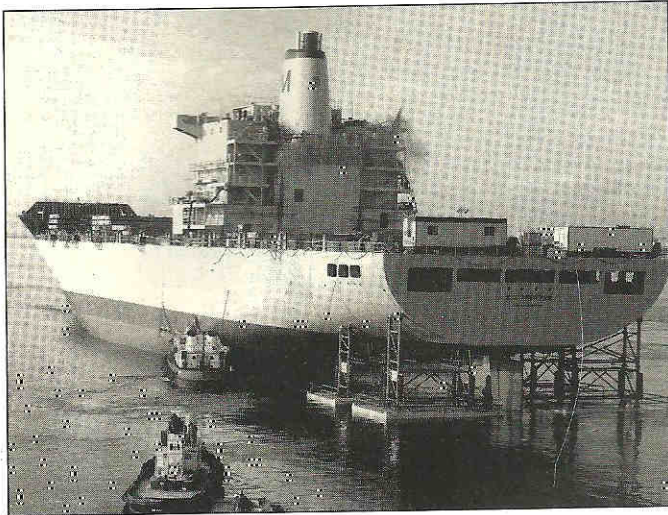
**SHIPOWNERS
ON A QUEST
FOR QUALITY**

**U.S. YARDS HUNT
COMMERCIAL
CONTRACTS**



■ U.S. MARINE INDUSTRY LISTINGS: DEEP SEA, INLAND AND COASTAL YARDS AND OPERATORS

51st ANNUAL YEARBOOK & U.S. MARITIME DIRECTORY



Front cover picture shows containership R.J. Pfeiffer nearing completion at NASSCO, San Diego

17 U.S. yards out to win commercial contracts
America's big-ship yards are striving to emulate the success of "brown water" yards in winning civilian work

27 Navy programs in flux as strategies change
Upheavals in defense strategy mean big changes to Navy shipbuilding plans

38 Prices ease at world yards
World shipyards have a strong backlog, but the pace of ordering has slackened, leading to slightly softer prices

40 Shipowners focus on quality
There's no shortage of new regulatory and other demands for shipowners to think about as they wait for the economy to pick up.

46 Have supply boat, will travel
U.S.-based offshore operators are looking beyond the U.S. Gulf for business

48 Ferry market booms
Buoyed by the availability of new federal funding, ferry operators around the U.S. are planning new services

48 Barge fleet renovation starts
Financing specialists report new interest in barge construction projects

49 U.S. MARITIME DIRECTORY LISTINGS

- U.S. SHIPYARDS p.49
- U.S.-BASED CRUISE SHIP FLEET p.60
- U.S.-FLAG MERCHANT FLEET p.67
- U.S.-CONTROLLED MERCHANT FLEET p.74
- INLAND WATERWAYS OPERATORS p.78
- OFFSHORE OPERATORS p.82

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- Tanker technology
- Power plant selection guide
- Focus on Spain and Portugal

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May 1992

MARINE LOG

Reporting on Marine Business and Technology

SHIP REPAIR FINDING THE BARGAINS

**HUNTING DOWN
FUNDING FOR
REPLACEMENT TONNAGE**

**SWEDISH MARINE
TECHNOLOGY**

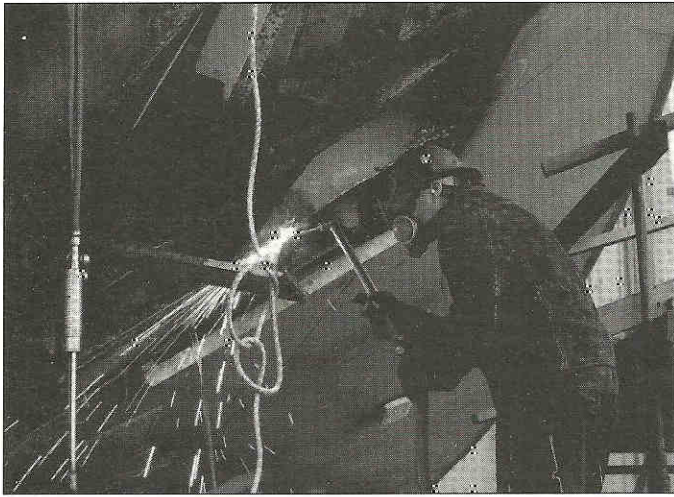
**CABINET-LEVEL REVIEW
OF U.S. MARITIME POLICY**



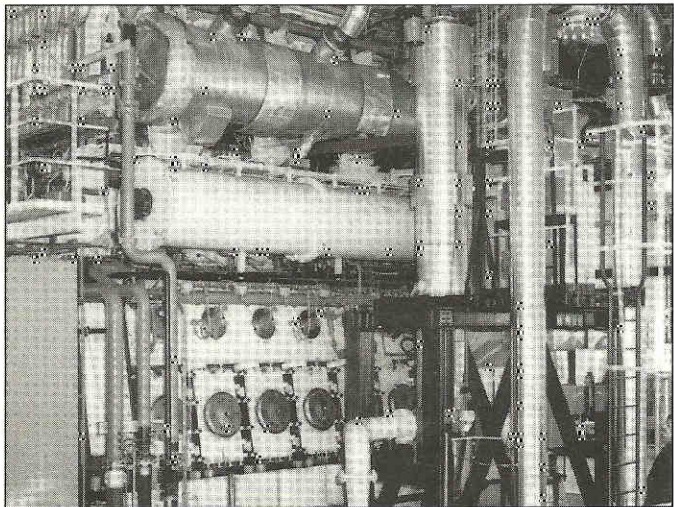
MARINE LOG

May 1992

Vol.97 No.5



Front cover picture shows ship repair work underway at Todd Pacific Shipyards



A Sulzer test engine at a Mobil Oil refinery is fitted with a compact SCR unit to clean up emissions (p. 52)

- 12 U.S. repairers look worldwide**
Increased commercial work is flowing into American ship repair yards, including jobs won in international competition
- 23 Shipowners shop for bargains at world repair yards**
Reflecting softer freight rates, international ship repair prices have eased ... for now
- 36 Finding funding for ships**
Deal-makers are offering innovative ways to help owners acquire replacement tonnage
- 42 Picking the right water maker**
Desalination system makers offer a broad range of products
- 49 Swedish marine technology**
The world is the home market for Swedish marine equipment
- 52 Exhaust emissions research**
A New Sulzer Diesel test engine uses a compact SCR to cut NO_x levels in exhaust
- 53 Cutting NO_x emissions**
Diesel electric installations can produce less NO_x than diesel mechanical systems
- 55 Super-automated bridge**
The latest one-man bridge system from Japan uses artificial intelligence
- 57 Cargo operations on the Mac**
Navis SPARCS program speeds container shipping operations

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- 51st Annual Yearbook and Marine Review
- U.S. Marine Directory

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April 1992

MARINE LOG

Reporting on Marine Business and Technology

Rethinking Navy Shipbuilding



**Offshore operators look worldwide
Fighting vapor spread in onboard fires
New entrant in SWATH market**

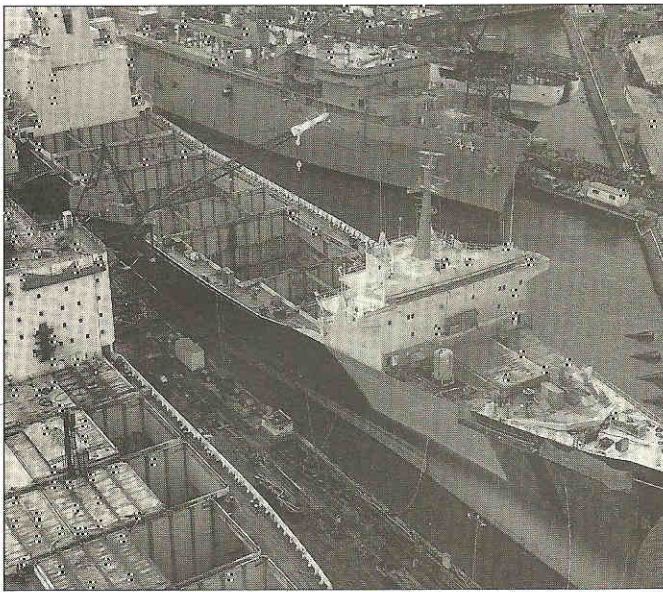
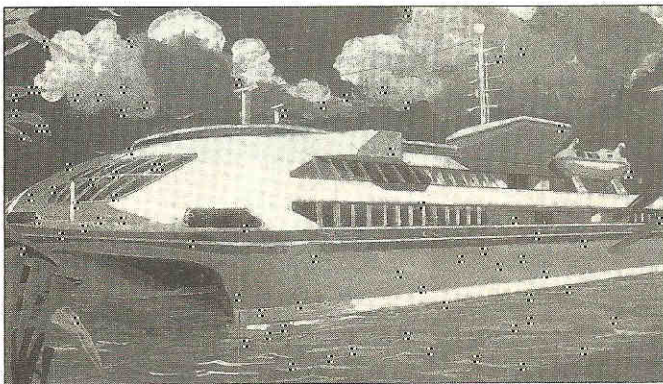


Photo: NASSCO

New sealift conversion orders could soon brighten Navy shipbuilding picture (p.25)



Swattech of America plans to enter the market with four 1,000 passenger vessels from McDermott Marine (p.32)

18 Rethinking U.S. Navy shipbuilding

For the moment, Navy shipbuilding budgets have been severely curtailed. But the Navy's not about to go out of business and there are some bright spots in the picture.

27 Offshore service operators look beyond the Gulf

Opportunities in overseas oil exploration areas are beckoning U.S. operators.

32 New entrant in SWATH arena

Swattech of America plans to build a line of innovative vessels for service worldwide.

38 Passenger ship orders for Wärtsilä Diesel

Vasa engines have been selected for two interesting passenger ship rebuildings.

40 Oil products handling

Crew attitudes to cargo transfer change with the advent of new tank monitoring and gauging technology.

42 Vapor control in ship fires

A water-driven ventilator helps rapidly evacuate potentially explosive smoke and gases.

46 Debugging diesel fuel

HUM(hydrocarbon-utilizing microorganisms) can be hazardous to engine health.

53 What's on show at ASNE

A preview of some of the exhibits at ASNE Day (April 30 & May 1) in Washington, D.C.

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Cover Photograph: Bath Iron Works

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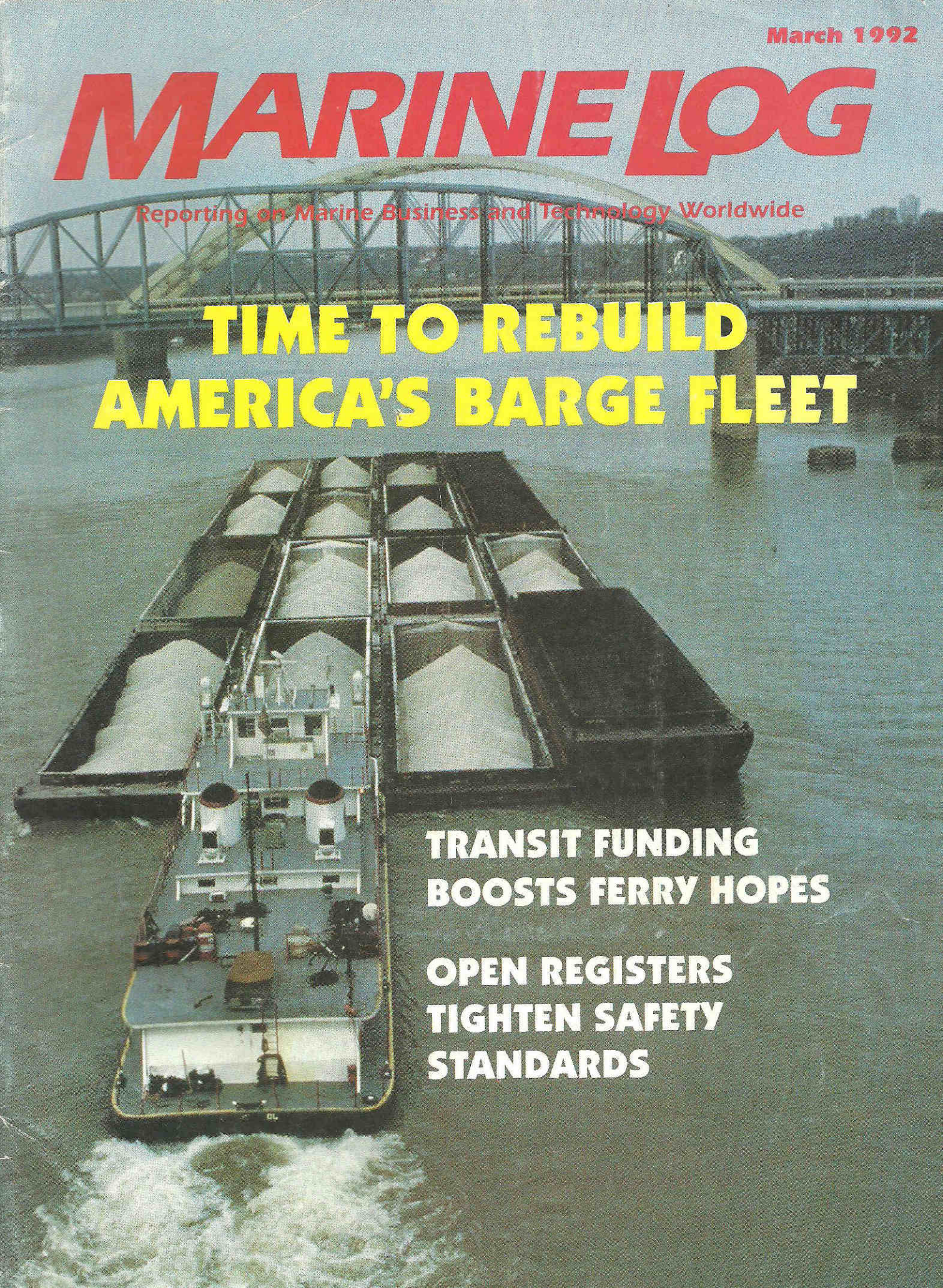
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Reporting on Marine Business and Technology Worldwide

TIME TO REBUILD AMERICA'S BARGE FLEET

**TRANSIT FUNDING
BOOSTS FERRY HOPES**

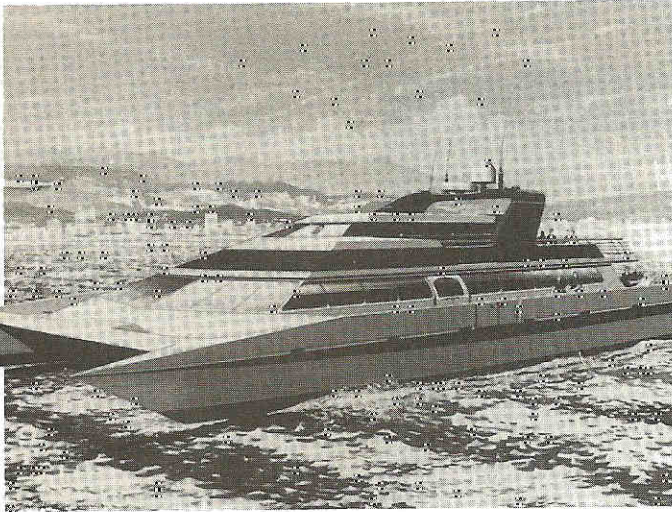
**OPEN REGISTERS
TIGHTEN SAFETY
STANDARDS**



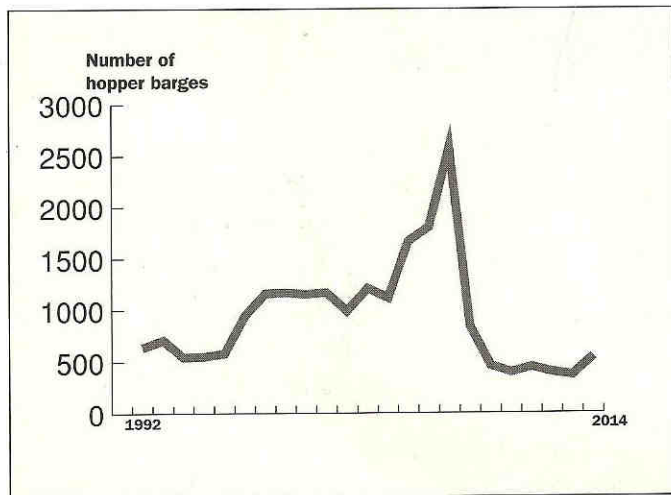
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Ferries can be 70 knot racehorses like this French designed quadramaran or more basic workhorses (p.12)



Barge construction could be back above 1,000 units a year before the end of this decade predicts a recent study (p.29)

12 Ferries for every route and service

Ferries range from sophisticated high speed commuter boats to simple powered pontoons

18 Transit act boost for ferries

Ferry services will benefit from a new transit act that emphasizes traffic mitigation as well as highways

20 Open registers tighten up on safety

Responding to new pressures from insurers and port states, shipowners are realizing the value of credible flag-state inspection programs

29 Time to rebuild America's barge fleet

A new study indicates that the need to replace aging barges will mean a major building program

34 When to rebuild and when to replace marine gears

Sometimes it saves time and makes more sense to rebuild a gear than replace it—so long as you pick the right rebuilder.

36 What's on show at Ferries '92

A preview of the exhibits accompanying this year's MARINE LOG ferry seminar being held in Boston, March 23-25

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Cover Photograph by Greg Thorpe

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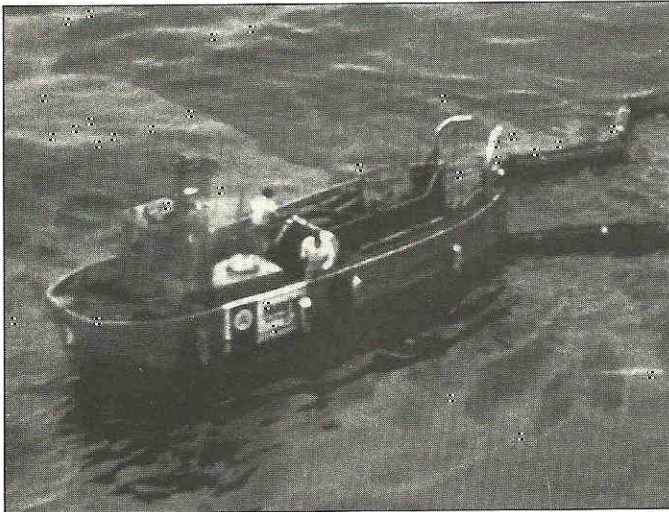
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Oil Spill Clean-up

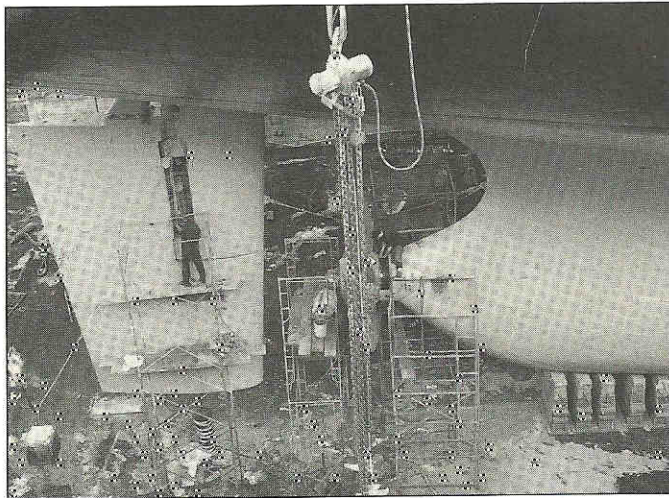
Readying the Response Armada



International crews to cost more in '92
U.S. to get nationwide DGPS positioning system
Cruise lines look to new markets
1992 Pump & Valve Directory



Cover photo shows Marco recovery vessel at work following the Exxon Valdez disaster



Propeller and rudder work on a Grancolombiana ship at Astilleros Braswell, Panama (p.37)

13 Oil spill clean-up fleet starts taking shape

Federal and state pollution legislation is spurring creation of a whole new marine spill response industry—and creation of a veritable armada of clean-up vessels of all sizes.

19 Cruise lines catch "The Wave"

A surge in bookings has some Miami-based cruise operators talking in terms of a record-breaking year.

22 Crew costs are set to rise

Faced with a worldwide shortage of seafarers, international ship managers are paying more to find and keep qualified personnel.

28 Marine valves: Getting set for more commercial ships

What are the prospects for U.S. valve manufacturers as shipyards set their sights on commercial orders?

32 Valve & pump directory

A guide to U.S. manufacturers of valves and pumps for marine applications.

37 Panama yard aims for world market

Able to drydock any ship that can transit the Panama Canal, Astilleros Braswell in Balboa is booking some impressive orders.

39 EPIRBs aren't all the same

Today's 406 MHz distress beacons have major advantages over earlier units.

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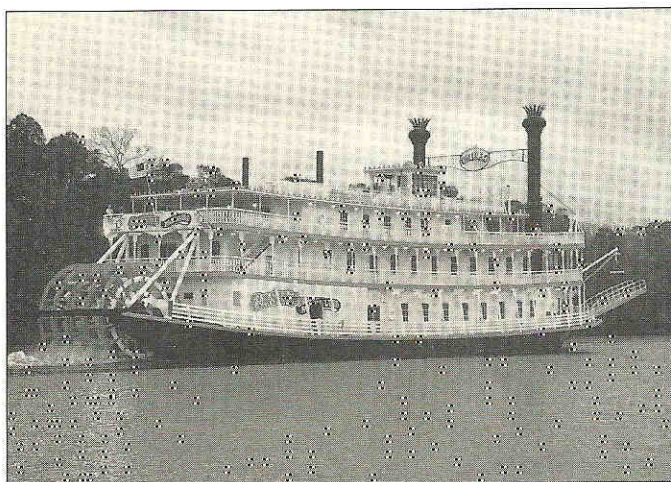
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Distinctive Passenger Boats Casino Boats Pay Off for Yards and Operators



INSIDE
NAPVO SHOW
PREVIEW

New lubes cut fuel contamination
Electronics: Will OPA force an on board upgrade?
Washington: What's on the '92 agenda?



Casino Rock Island, also featured on our cover, head's this year's line up of distinctive passenger boats. (p.21)

21 Distinctive Passenger Boats: The pick of recent deliveries

Elegant stern wheelers and slick yachts dominate this year's line up of boats joining the ever-expanding passenger vessel fleet.

34 New York demonstration of Schottel Pump-Jet

An innovative thruster is put through its paces before New York marine industry technical experts.

37 New lubes cure a heavy fuel headache

Mobil has introduced two new oils that combat contamination of lube oil by heavy fuel in medium speed diesels.

39 OPA could mean new navigational outfit rules

The Oil Pollution Act of 1990 requires the Coast Guard to draft rules to make existing tankers safer. New bridge equipment requirements are a possibility. But some of the most promising technology is not quite with us yet.

45 What's on show at NAPVO?

We preview the exhibits at this year's annual convention of the National Association of Passenger Vessel Operators in New Orleans.



New bridge technology is on the way. Will the Coast Guard mandate any of it for existing tankers? (p.39)

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- Crewing, manning and training
- Oil spill clean-up and recovery

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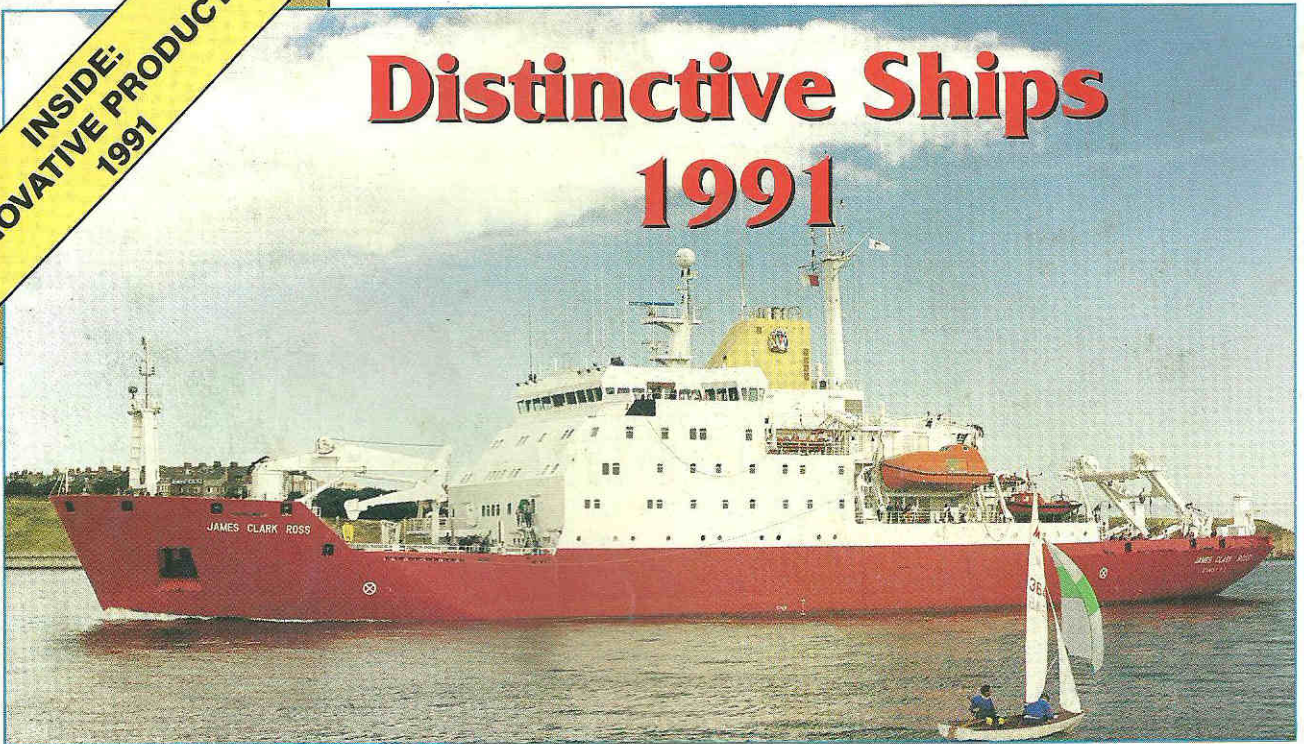
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**INSIDE:
INNOVATIVE PRODUCTS
1991**

Distinctive Ships 1991



**NASSCO back
in the commercial
newbuilding arena**

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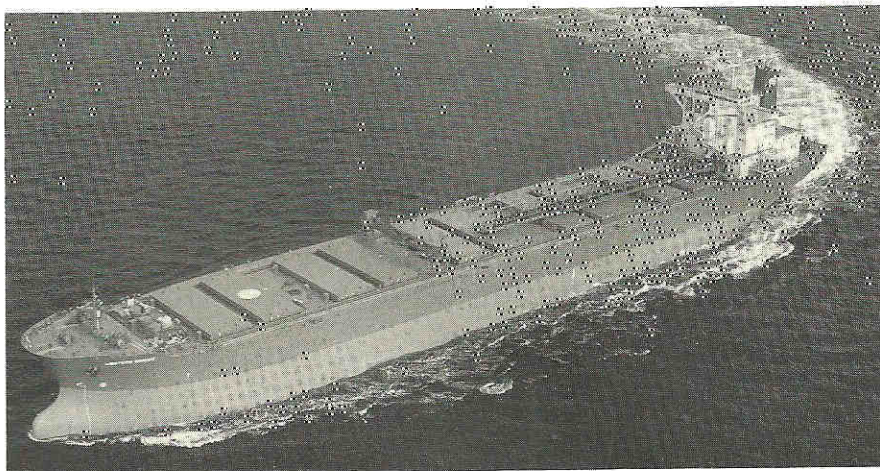
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New self-unloader dry bulk carrier for British Steel, the Western Bridge.

28 Navy faces leaner times ahead

The search of a peace dividend means cutbacks in the size of the fleet...and fewer opportunities for yards specializing in Navy work.

35 NASSCO back in the commercial ship arena

A 21,000 dwt containership for Matson is starting to near completion in San Diego.

38 Innovate Marine Product Awards 1991

MARINE LOG salutes the innovative technology that is helping to move the world fleet.

50 New generation BBC turbochargers

To match new diesel demands, ABB Turbosystems is pushing forward the boundaries of turbocharger efficiency and maximum pressure.

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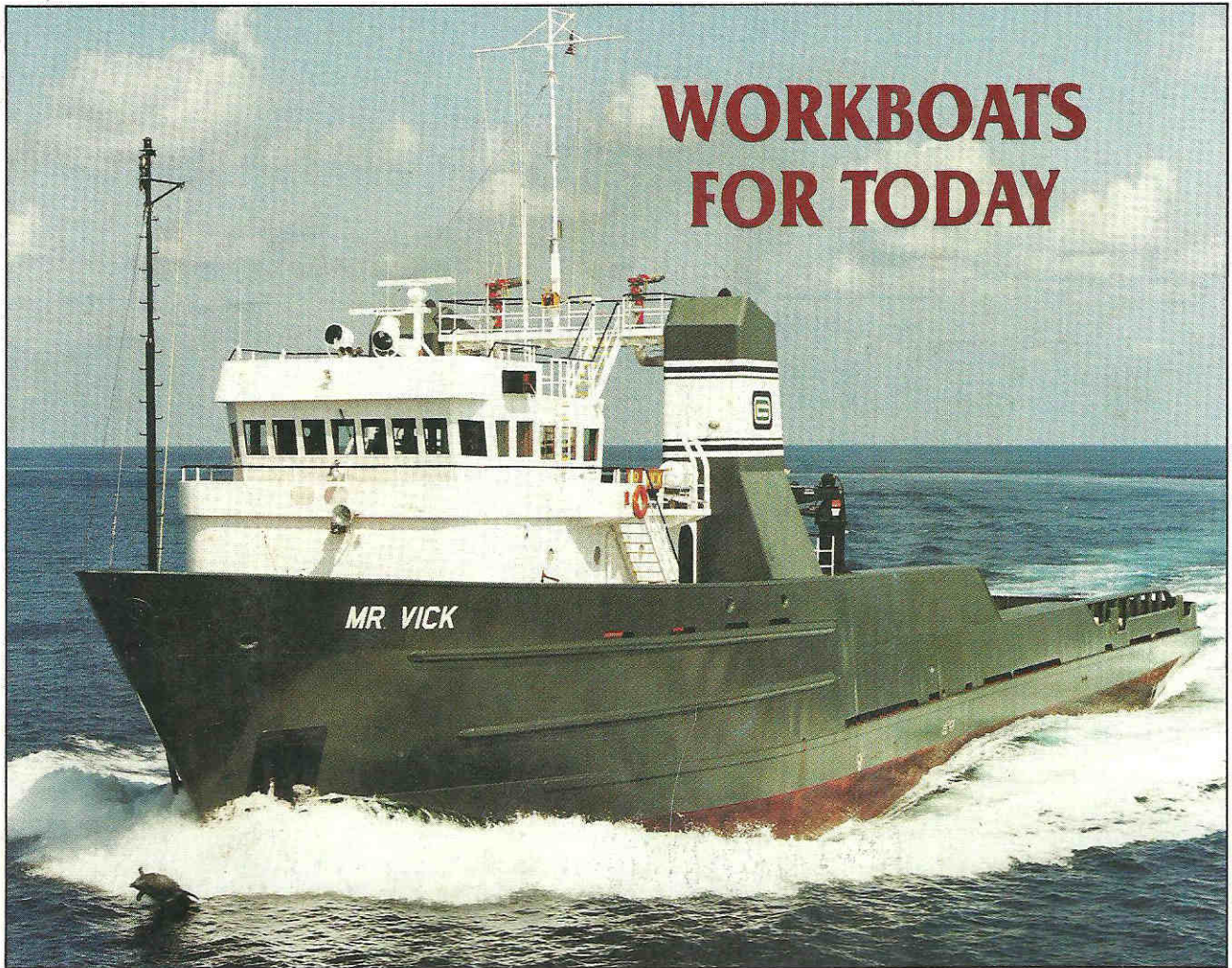
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- Distinguished passenger boats and ferries
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November 1991

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WORKBOATS FOR TODAY

NAVIGATION & COMMUNICATIONS
Technology Confronts Tradition

USCG NPR SPELLS TORPEDO FOR TANKERS
Spill Insurance Proposals Can't be Met

NEW YORK MARITIME INDUSTRY
Navy Homeport Raises Hopes

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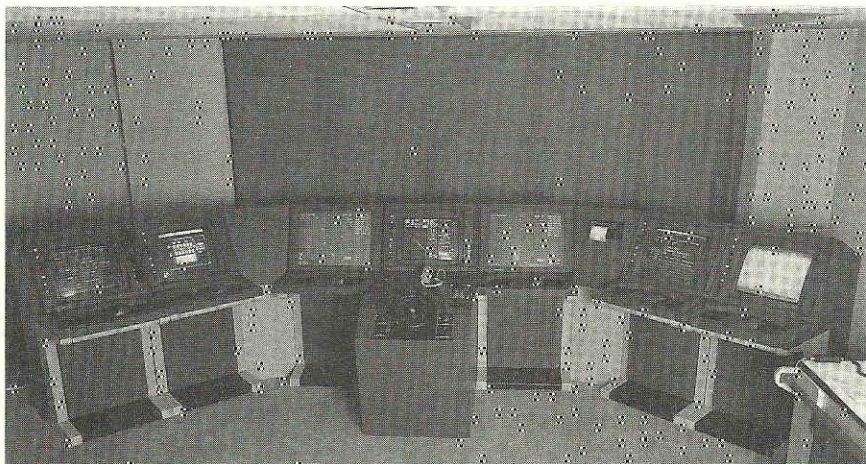
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To insure their boats keep working, owners want simple designs that can withstand a broad range of sea conditions—and handle a wide variety of maritime chores.

28 Homeport boost for New York City maritime industry

New York is one of the world's major commercial maritime centers, but local suppliers are looking to a new Navy homeport for a little extra business.

36 Changing the bridge for the better

Today's electronics promise the navigator, more plentiful, more accurate data, presented more understandably. Also: Are you ready for GMDSS? (p. 38). ECDIS: biggest advance since radar? (p. 40). Differential GPS promises safer coastal navigation (p. 44).

Integrated bridges, like this one recently unveiled by Kelvin & Hughes, promise safer and more cost effective navigation (p. 36)

46 Can U.S. yards still build commercial vessels?

According to consultants at Colton & Co., the answer is "perhaps" — if they can change their marketing and business strategies. We look at some of the possibilities.

50 SNAME Maritime Expo Preview

A sample of the exhibits on display when the annual meeting of the Society of Naval Architects and Marine Engineers returns to New York City, November 13-15, with its Maritime Expos.

54 Work Boat Show Preview

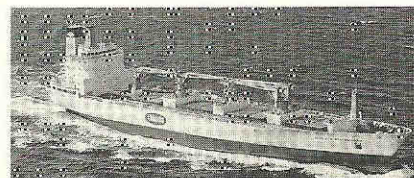
A preview of what's in store at the Superdome when New Orleans hosts the International Work Boat Show, December 5-7.

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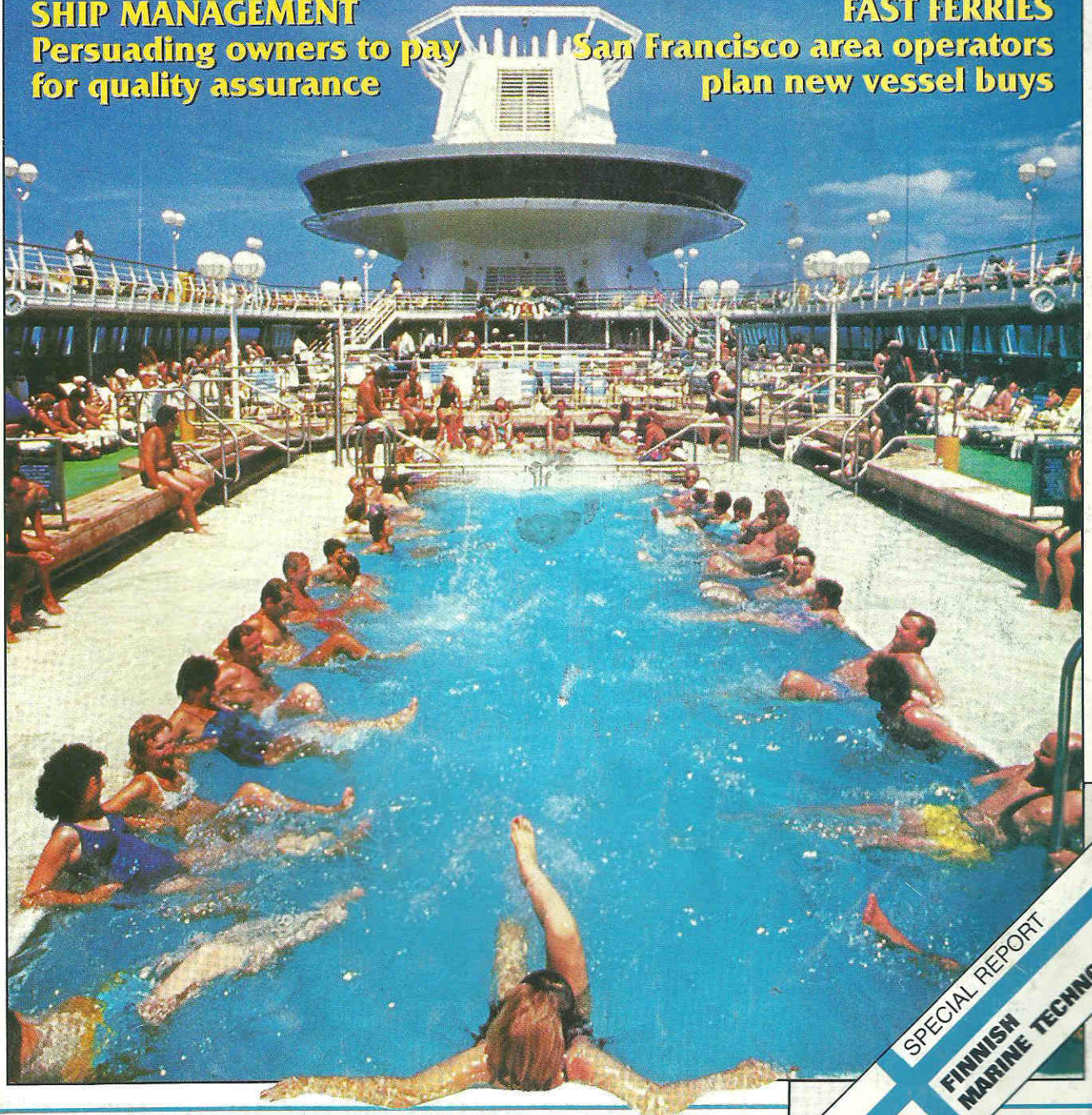
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FAST FERRIES

San Francisco area operators plan new vessel buys



SPECIAL REPORT
FINNISH
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Recent new deliveries have tipped more berths into the cruise market at a time of recession. But the overcapacity won't last forever—and hasn't stopped Carnival ordering another newbuilding.

21 Fuel: You get what you pay for

...and sometimes a little better than that, if you use a quality supplier. Nonetheless, problem fuels continue to crop up and create chaos.

29 SPECIAL REPORT: FINNISH MARINE TECHNOLOGY

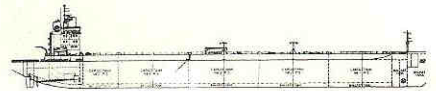
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45 Quality assurance in ship management

Leading ship managers are instituting an ambitious quality assurance program. Will owners pay a premium for the peace of mind it offers?

50 Giant tow boat for Corps of Engineers

A \$22 million, 241 ft tow boat will not only push or tow sixteen 200 ft



Crowley Maritime Double Hull Tanker

Crowley Maritime has plans for a fleet of U.S.-flag, U.S.-built double-hulled tankers (see Update p.8)

hopper barges, but has extensive accommodations to host waterway inspection tours and public meetings.

51 Canadian SAR cutters

Two "500" class cutters with a 2,500 mile range are equipped for a broad range of duties.

52 Gas turbine Rx for NOx and sulfur emissions

GE claims its gas turbines can meet any likely limits on air pollution from ships—without encountering as many problems as the diesel.

54 MSRC orders a 16-vessel oil-spill clean-up fleet

\$185 million of newbuilding orders have gone to two U.S. yards.

55 Bay area ferry plans start moving

A 40 knot ferry for Marin County is among a clutch of new services being proposed to lure commuters out of their cars.

58 Cutting satcom charges

An automatic call-routing device offers advantages that include automatically selecting the least-cost routes for communications from the ship.

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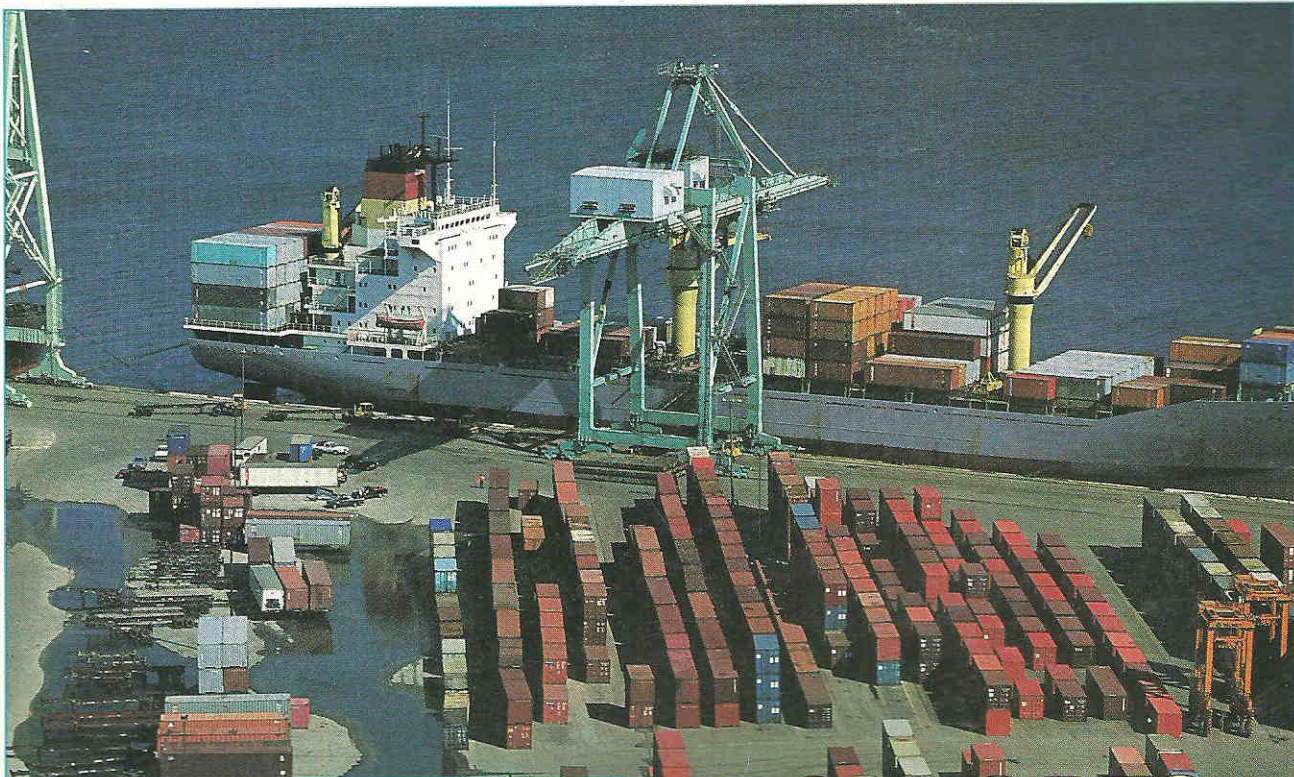
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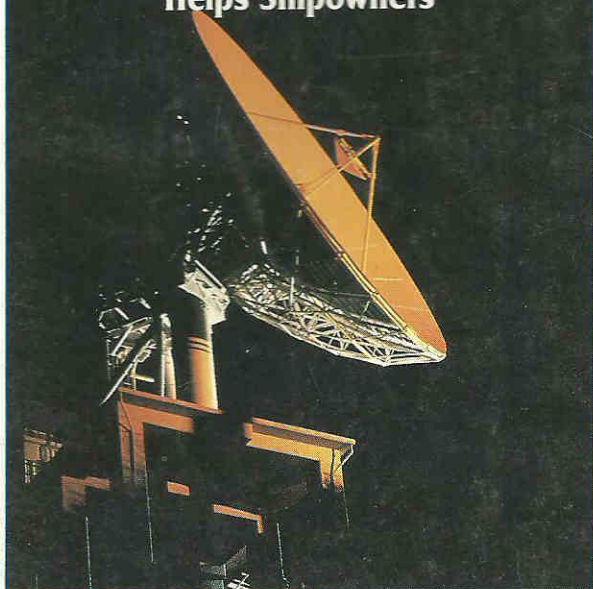
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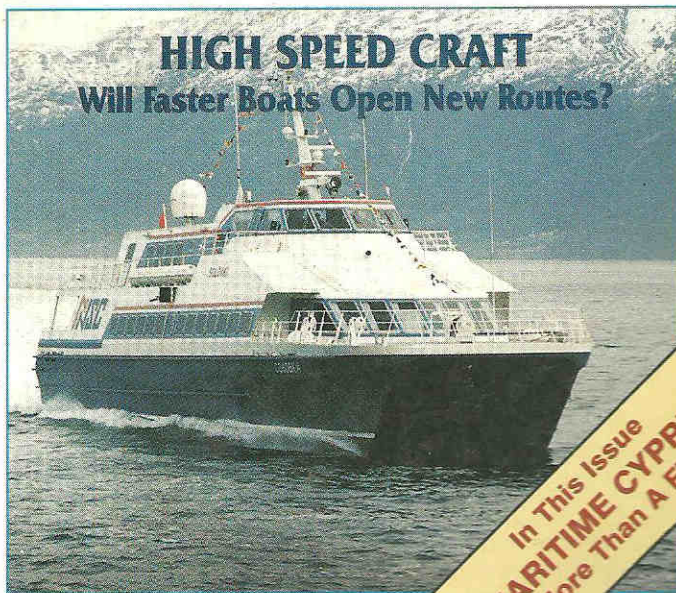


U.S. PORTS: Top Trade Is From Pacific Rim

**SATCOM COSTS COME
DOWN TO EARTH**
New Competition
Helps Shipowners



HIGH SPEED CRAFT
Will Faster Boats Open New Routes?



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More Than A Flag

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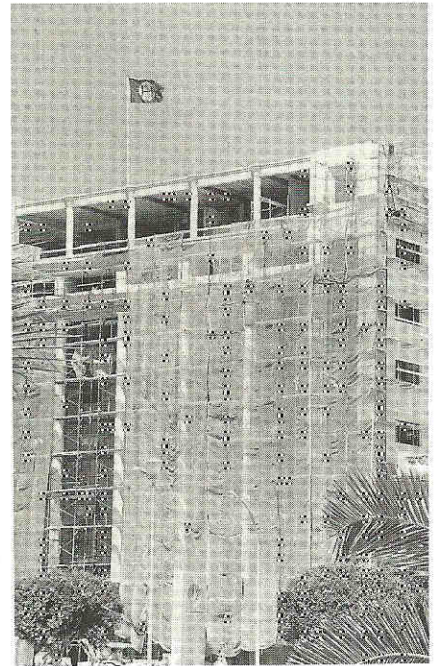
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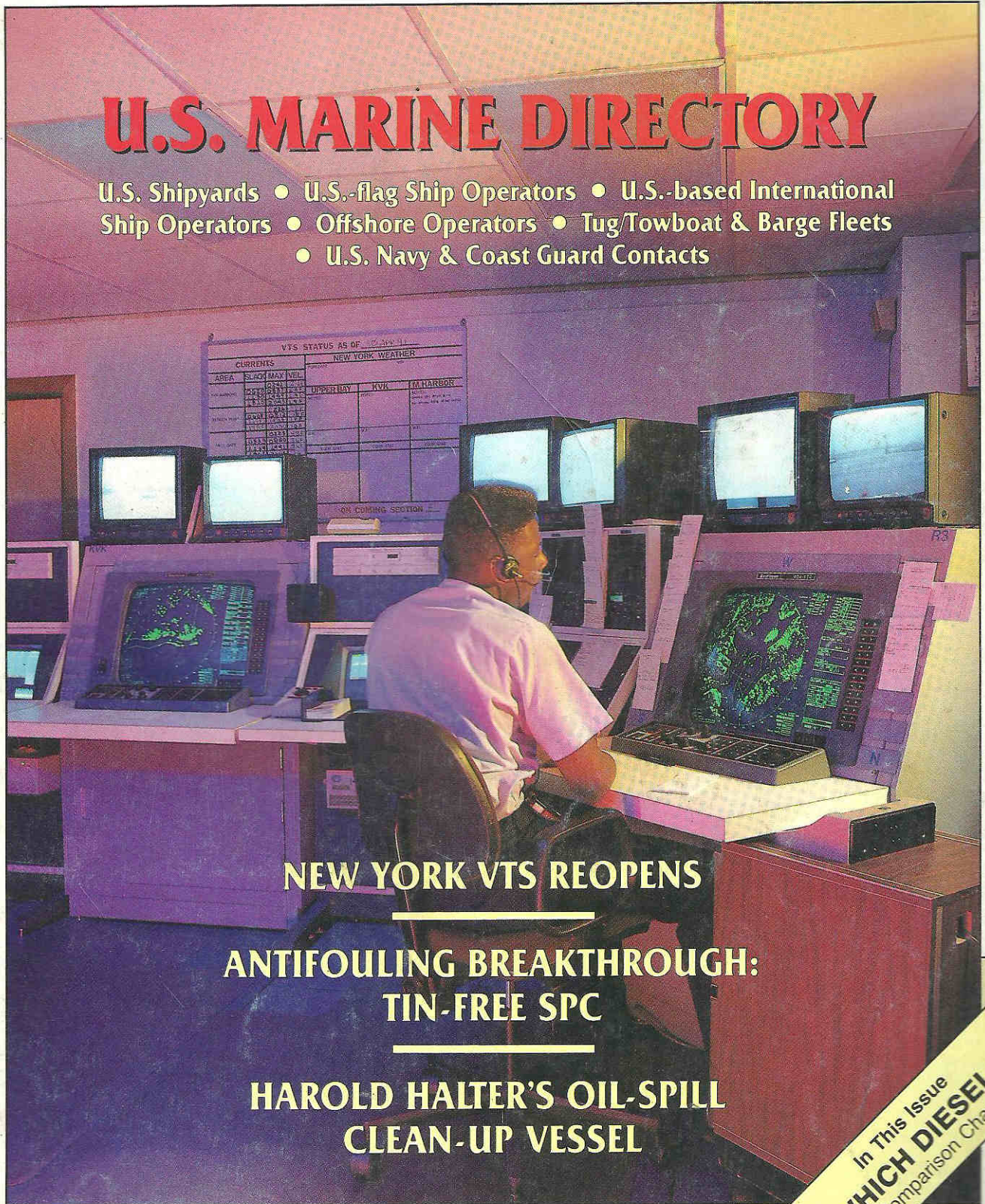
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Reporting on marine business and technology worldwide

U.S. MARINE DIRECTORY

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**ANTIFOULING BREAKTHROUGH:
TIN-FREE SPC**

**HAROLD HALTER'S OIL-SPILL
CLEAN-UP VESSEL**

In This Issue
WHICH DIESEL?
Comparison Chart

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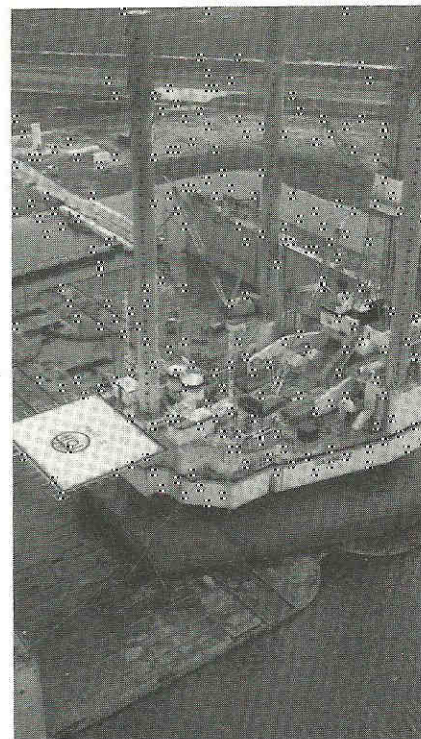
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Reporting on marine business and technology worldwide

50TH ANNUAL YEARBOOK & MARITIME REVIEW



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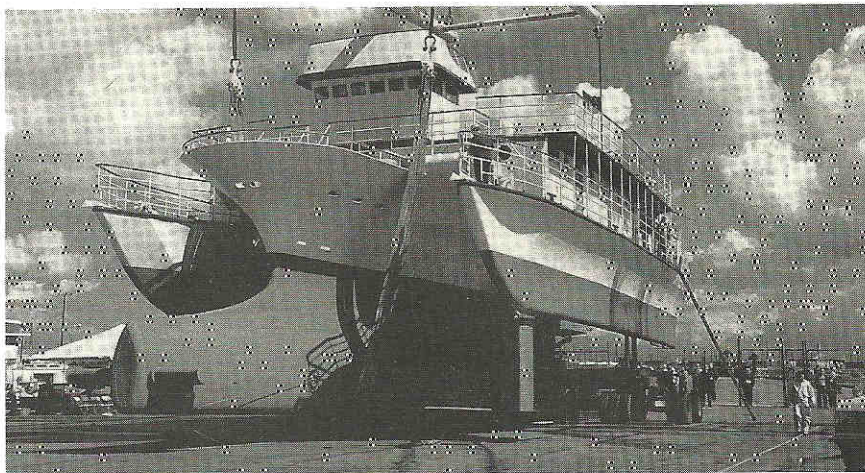
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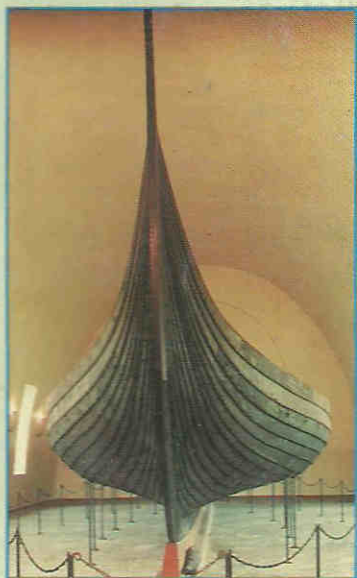
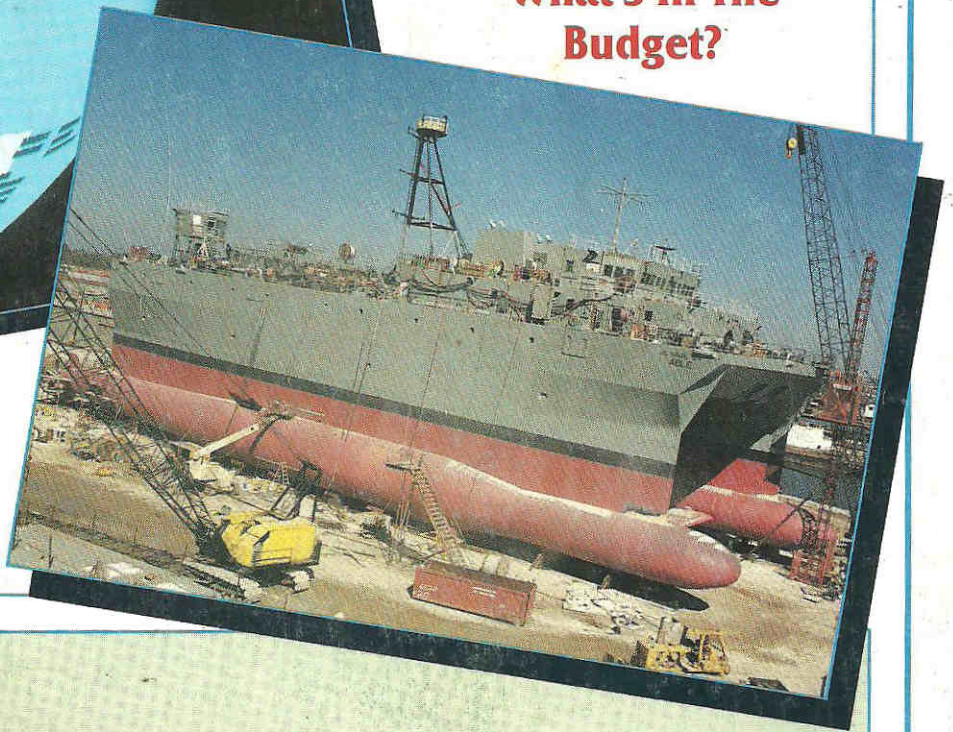
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NAVY TECHNOLOGY: What's On The Drawing Board? What's In The Budget?



NORWAY: The Viking spirit is alive and well. After using doctor- and lawyer money to help buy up a big chunk of the world's available second-hand tonnage, Norway's maritime entrepreneurs have been turning their attention to buying shipbuilding facilities, everywhere from Finland and Scotland to Mexico...

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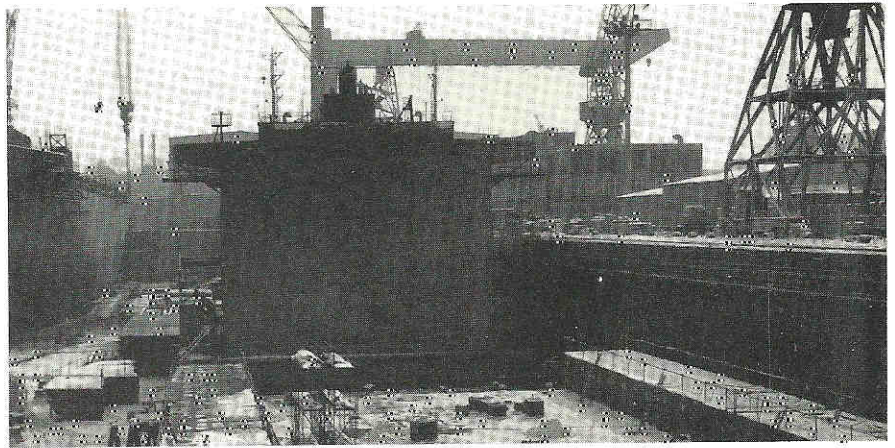
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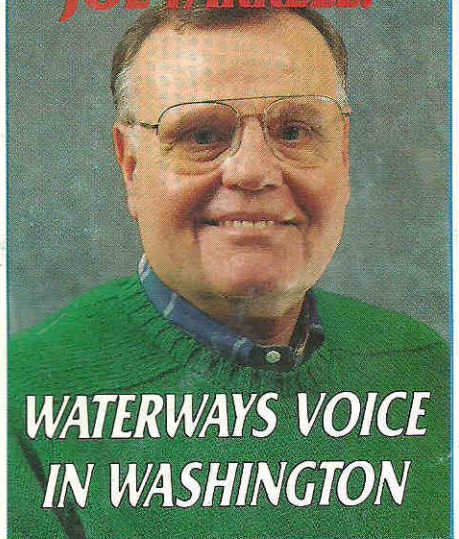
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BETTER TIMES KEEP
DRY DOCKS BUSTLING



REPOWERING A LAKER

AWO PRESIDENT JOE FARRELL:



WATERWAYS VOICE
IN WASHINGTON

COATINGS: BEATING THE SEA WITHOUT HARMING THE ENVIRONMENT

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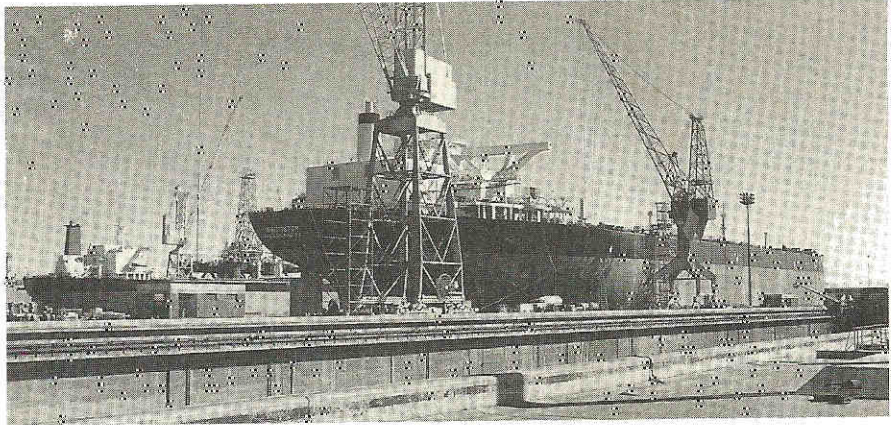
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FERRIES: Matching the Right Design to Your Route



How Sea-Land changes auxiliary horsepower in midstream



SPECIAL REPORT: SAFETY & FIRE PROTECTION

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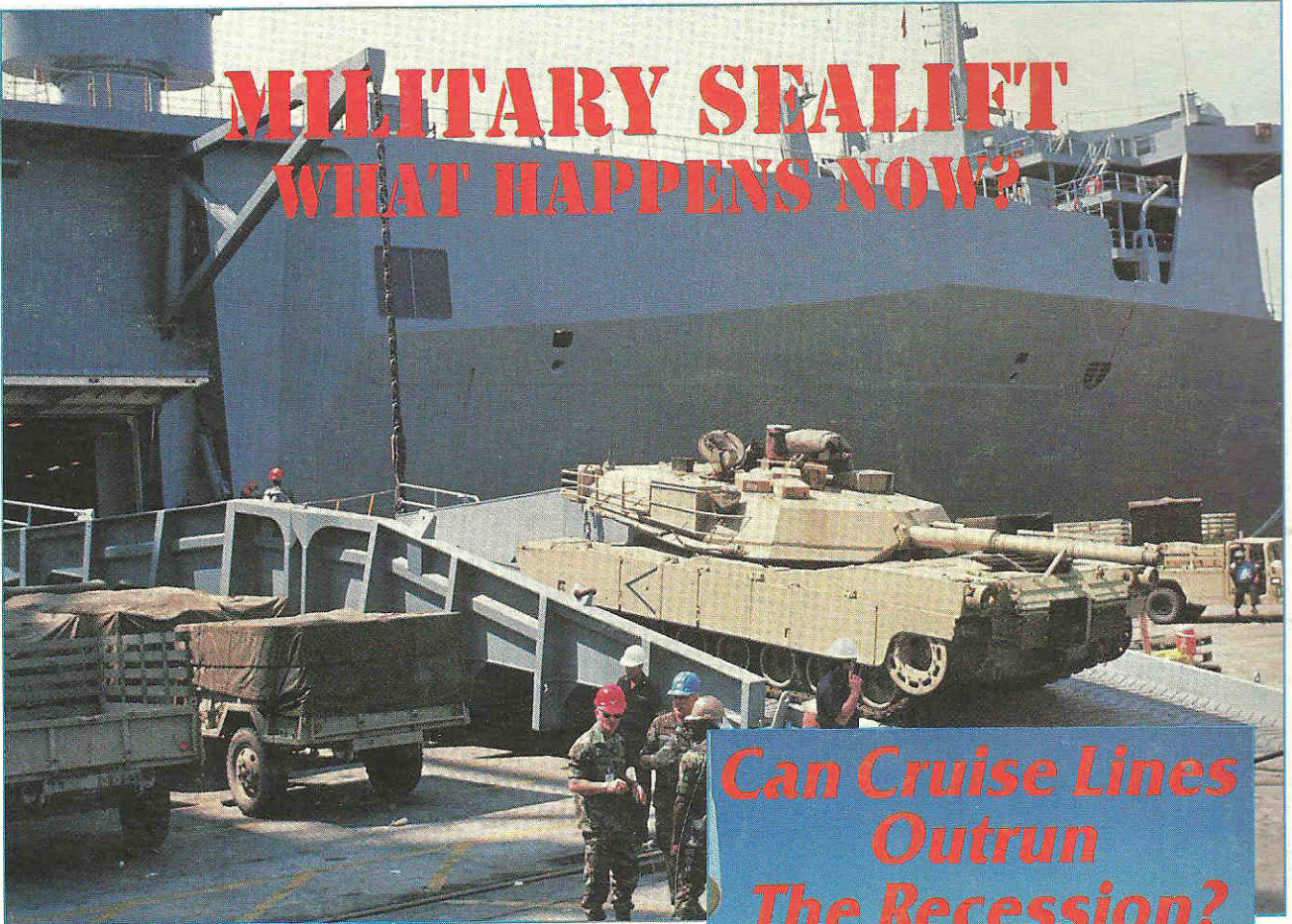
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February 1991

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MILITARY SEALIFT WHAT HAPPENS NOW?



Can Cruise Lines Outrun The Recession?



RIVERBOAT RETROFITS DOUBLE HULL TO CUT ITS FUEL BILLS

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44 Delta Queen gets double hull

By incorporating new double hull technology, the paddlewheel on this cruiser was raised by 30 inches, making propulsion more efficient.

47 Computer system eases dredge maintenance

Maintenance management has become a lot simpler aboard three U.S. Army Corps of Engineers dredges.

49 Astilleros Españoles to build Moroccan ferry

Spain's Astilleros Españoles has won an order to build a ferry for the Strait of Gibraltar.

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January 1991

MARINE LOG

Reporting on marine business and technology worldwide

Distinctive Passenger Boats and Ferries



CARGO HANDLING

What's New?



Europe's
Shiprepairers
Woo U.S. Owners

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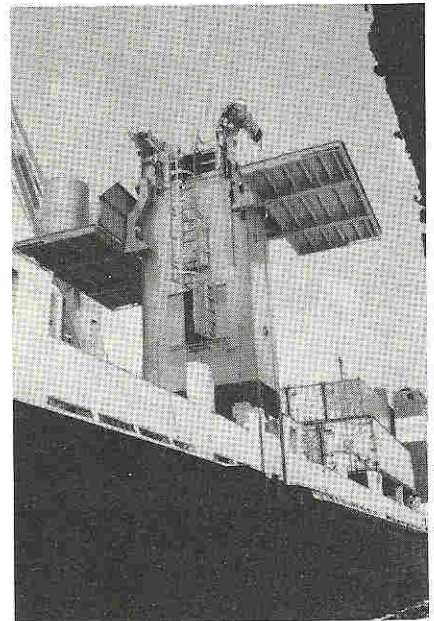
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33 Ship repair: European yards woo U.S. clients

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Side-loading is becoming attractive for a growing range of ship-types. (p. 25)

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40 Tanker design: Mid-deck tanker can't spill

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42 Offshore experience with the Vasa 32 diesel

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Reporting on marine business and technology worldwide

...at part of the pelvis. ... called "hip ...
in·no·vate (In'ə-vāt') v. -vated, -vating, -vates. —tr. To begin or introduce (something new). —intr. To begin or introduce (something new; be creative. [Latin *innovāre*, to renew; intensive) + *novāre*, to make new, renew, from *novus*, new (see *new* in Appendix*.)] —in'no·va'tive adj. —in'no·va'tor (-vā'tər) n.
in·no·va·tion (In'ə-vā'shən) n. 1. The act of innovating. 2. That which is newly introduced; a change. —in'no·va'tion·al adj.

Rebuilding the fleet demands new thinking to produce fresh answers to marine industry problems

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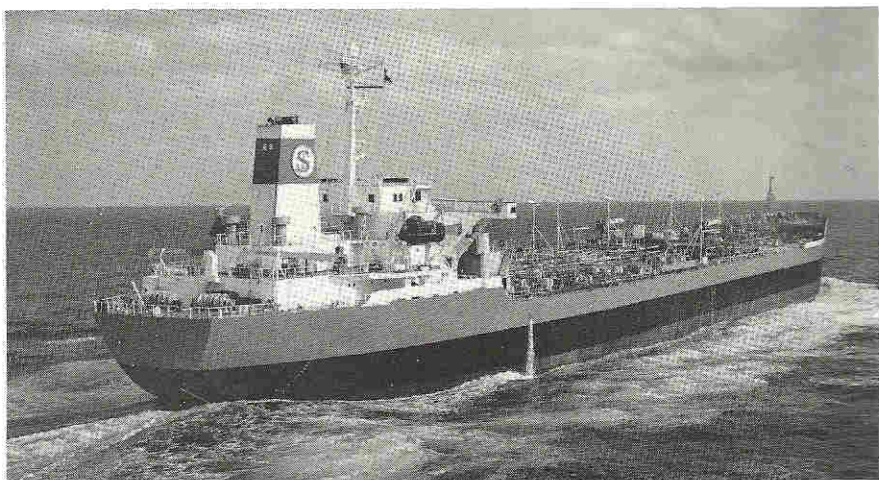
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MARINE LOG salutes the innovative technology that is helping to move the world fleet into a new era.

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46 Beating the bump and grind

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48 GPS navigation system continues to expand

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50 Le Havre opens Rapid Turnaround Port

Already France’s premiere port, Le Havre hopes to increase its hinterland through modernization.

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WILL HIGHER OIL PRICES BOOST WORKBOAT ORDERS?

*After a long lull, new supply
boat orders are spurring
hopes in Oil Patch yards.*



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**4 MILLION AMERICANS
TO FILL CRUISE BERTHS**

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26 Can cruise lines sell their way out of recession?

Cruise lines go into 1991 with plenty of affordable, low-end packages—and a marketing campaign that will stress the value of cruise vacations.

33 FINNISH MARITIME TECHNOLOGY

Finnish shipbuilding is emerging from one of its most challenging periods with new orders negotiated at realistic prices. The revitalized industry provides a firm homebase for a marine equipment industry that has also been winning customers around the world.

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Carnival's Fantasy—another proud product of Finnish marine technology (p.33)

49 Workboat yards: Cautious optimism in the Gulf

Oil prices are rising and new supply boats have been ordered, but the big question is how long the upswing can last.

53 Cruise Op 90 show preview

The Cruise Op 90 exhibition (November 4, 5 & 6, Hyatt Regency, Miami, Fla.) will feature a broad range of equipment and services.

63 Workboat Show preview

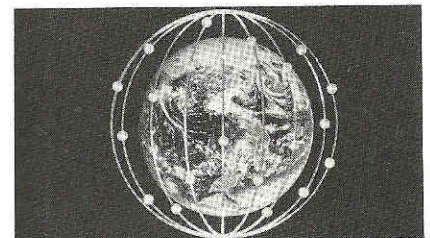
From November 15-17, New Orleans will again host the International Workboat Show.

66 Teaching old masters new tricks

The Maritime Institute of Technical and Graduate Studies brings navigators up to date with the latest in bridge technology.

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SHOW PREVIEW
SNAME, SAN FRANCISCO



EXXON VALDEZ

REPAIRING EXXON VALDEZ
Biggest Tanker Rebuild Ever?

U.S. PORTS:
LA Moves Ahead of NY/NJ

DON'T DRAIN THE MISSOURI!
Reservoir Boaters Threaten River Trade

WEST COAST MARINE BIZ
Finding New Markets

DOUBLE HULLS: WHAT NOW?

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19 U.S. ports: The scene is changing

L.A. is number one, Portland is booming and New York/New Jersey is static. Mixed results from U.S. ports reflect both an uncertain American economy and changing demographics.

27 West Coast: Maritime industry is thriving

The Pacific marine industry offers a wide range of products and services. Industry leaders in fields as diverse as marine weather forecasting software and water purification systems have found homes in British Columbia, Washington, Oregon, California and Hawaii.

36 Rebuilding the Exxon Valdez

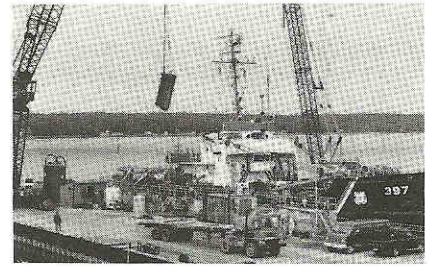
The grounding of the *Exxon Valdez* was a disaster. Her refit has been a triumph for NASSCO. A look at the extensive rebuild that has the once wounded VLCC back in service as the *Exxon Mediterranean*.

39 Legislation: Congress dictates double hulls

In the wake of the *Exxon Valdez* disaster, the next generation of tankers will be built to a design concept crafted by politicians.

40 Lake yards emphasize repairs, rebuilds

With newbuilding orders at a minimum, most Great Lakes yards are looking to reconstruction for the near future.



Coast Guard Cutter Mariposa is re-engined at Bay Shipbuilding.

46 Norwegian fast ferries

An overview of Norway's competitive ferry design firms. Most are working on catamaran variations.

49 Boaters battle barges for Missouri water

The 40 year old Main Stem System, designed to conserve the water of the Missouri, is straining to serve both boaters and barges as drought continues.

51 Power and propulsion: GE's LM5000

These days, sealift is getting a lot of attention. GE's new gas turbine could help make cargo vessels that travel at 40 knots a possibility.

55 Swath to challenge the Chunnel

It will take fast, smooth-riding ferries to compete with the Channel Tunnel. Ready to enter the fray, Swath Ocean has reorganized.

57 SNAME 1990 Preview

A look at some of the exhibits that will complement this year's annual meeting of the Society of Naval Architects and Marine Engineers in San Francisco.

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EASTERN WIND: FIRST OF A NEW BREED OF FROZEN SEAFOOD FREIGHTERS



BLUE RIBBAND FERRY



INSIDE: GERMAN SHIPBUILDING

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Before the bridges and tunnels were constructed, America's waterways were dotted with small boats taking people to and from work in the cities. Lately, this "mosquito fleet" has been making a come-back—though today's ferries tend to be a lot faster and more sophisticated than their predecessors.

20 New breed of bigger wave-piercers

Hoverspeed Great Britain, featured on our cover, is one of a new breed of large wavepiercers from International Catamarans, Australia, and its licensees that are finding favor around the world—including routes such as the English Channel and the Bass Strait.

27 German yards: Hi-tech at low interest rates

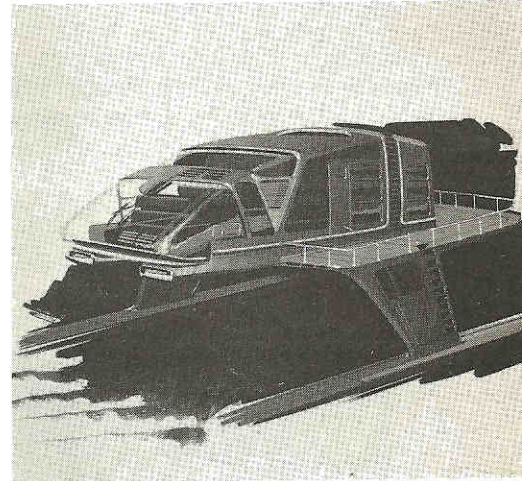
West German yards see a niche for themselves as builders of high tech, value ships. And though less government money will be available for direct subsidies, yards are hoping to continue to offer soft financing. Meantime, East Germany's yards are having to adjust to capitalism almost overnight.

34 Eastern Wind: A new type of frozen fish transporter

Built by Homeport Marine Services, Inc., Moss Point, Miss., the 195 ft *Eastern Wind* trades between Seattle, Alaska and Japan, carrying 78,000 ft³ of frozen fish.

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Artist's impression of *Hydro-Lance*. Mounted on ski-like hulls up to 250 ft long x 2 ft wide x 4 ft deep, one ferry version could reach 120 miles an hour, claim its promoters (p.22)

36 Cruises to Snow-where?

Pictured on our cover, an icebreaking cruise vessel from Japan's NKK will offer excursions in icy waters off northeastern Hokkaido as an add-on for tourists visiting the annual Sapporo Winter Festival.

38 SMM Hamburg 1990

A preview of exhibits at this year's premier European shipbuilding and shipping exhibition.

43 Ferries 90 Show Preview

A look at some of the exhibits that will complement this year's annual meeting of the International Marine Transit Association in Quebec City.

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14 Horizon: Chandris moves up market

Traditionally a budget operator, Chandris has gone a step upscale with its Celebrity Cruises venture. The line has just deployed its first ever newbuilding, the \$185 million *Horizon* under the Celebrity banner, joining the refurbished *Meridian*.

17 Life extension and ballast tank coatings

Selecting the right ballast tank coatings as part of a refurbishment program can add 5-10 years to the life of a 25 year old VLCC. Today the choice will usually be between a coal tar epoxy or a hydrocarbon-modified epoxy system that meets the latest environmental-protection and shipyard workplace-safety regulations.

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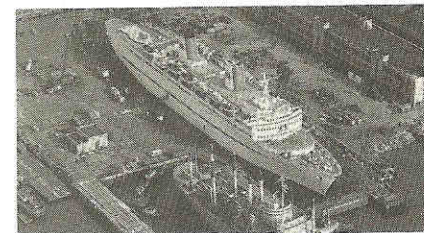
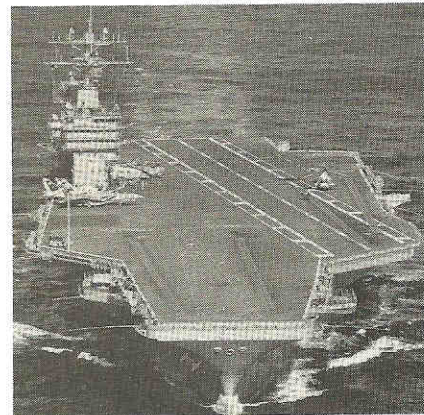
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This month's cover shows three faces of American maritime industry: A nuclear-powered aircraft carrier from Newport News Shipbuilding; the 106 ft export tug "Amman" from Trinity Marine Group undergoes trials; a foreign-flag cruise liner in the dry dock at New York Shipyard Corp.

60 U.S. Navy and Coast Guard

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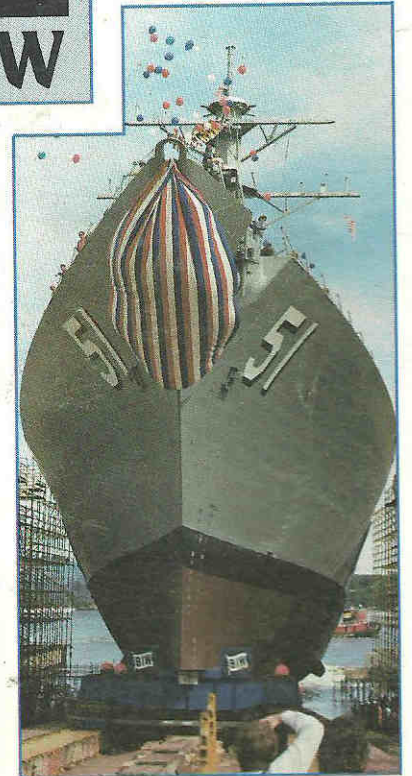
June 1990

MARINE LOG

Reporting on marine business and technology worldwide



49th ANNUAL YEARBOOK & MARITIME REVIEW



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21 Shipowners learn to live with profitability

After a decade and a half of depression, it's time for shipowners to think about reinvesting in new tonnage without creating overcapacity.

30 Cruise industry faces major issues in the 90s

As the newbuilding trend continues to add capacity to the cruise industry, ship design and operating standards will reflect concern over safety and the environment.

31 Cruise ships sailing from U.S. ports

Up to date listings compiled by MARINE LOG's research department.

37 U.S. shipyards: an industry in transition

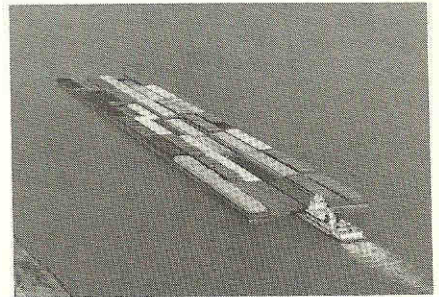
Faced with the inevitable reduction of Navy work, U.S. shipyards are looking hard for more commercial work—and finding it.

47 World shipbuilding at a turning point

Fuller orderbooks promise a new era for world shipbuilding in the 1990s, but shipyard subsidies remain a big obstacle for the industry.

59 U.S. Navy budget ax will continue to swing

The Navy's building and conversion plan already threatens the survival of some shipyards—and defense spending will only decrease.



71 U.S. waterways industry faces new challenges

Can the industry that survived the drought survive the legislation brewing on Capitol Hill?

73 Casinos on the waterways

Passenger vessel operators have mixed emotions about the high stakes involved with introducing gambling into the industry.

75 Oil industry looks ahead to better days

With drilling activity up, survivors in the offshore industry can finally anticipate a brighter future ahead.

76 Coast Guard certifies passenger SWATH design

The first Coast Guard certification for a passenger-carrying SWATH has owner and designer Navitek Ships making a splash in the Hawaiian market.

78 A new decade of P&I begins

After the excitement of the recent renewal, what will shipowners need to know about P&I in the 1990s?

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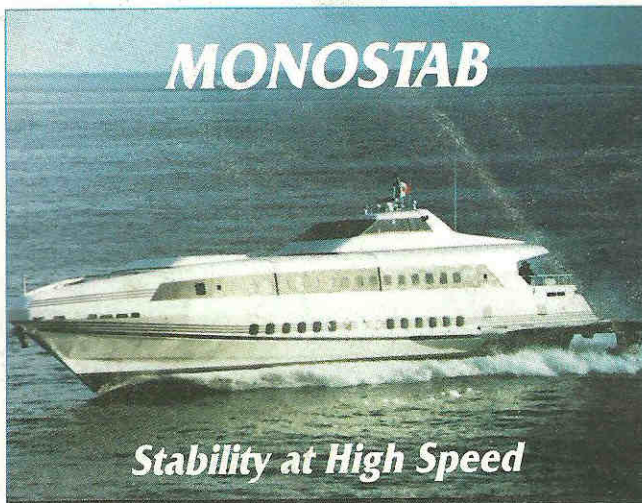
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SEA-LAND'S MANDL:
Steering into Profitability



MONOSTAB

Stability at High Speed



DIESELS:
*Which Designs
for the 1990's?*

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11 Goliath-Knight deal a winning combination

A recent merger between two ocean transport concerns paves the way for a multi-million dollar contract to haul bauxite from a remote mining location in Guyana.

13 Sea-Land's Alex Mandl steers for profitability

After a management shakeout, Sea-Land is on track to earn more than the cost of its capital...whether or not it gets subsidies.

19 Monostab features stabilizing hydrofoils

Dornier stabilization system uses a new foil design for high speed stability in various sea states.

21 Can Piraeus regain lost ground?

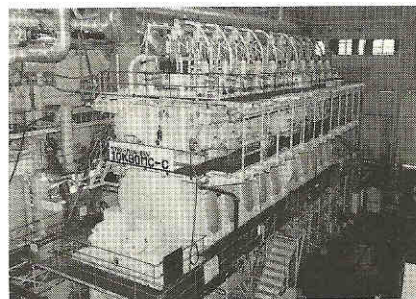
Greek owners continue to build impressive fleets as Piraeus works to end home-flag woes to push Greece to the top of world shipping.

25 Diesel shake-out isn't over

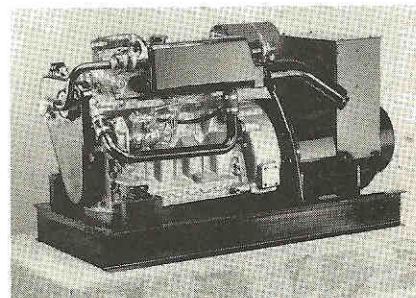
The recovery in newbuilding orders is helping, but competition in the diesel area remains harsh.

36 Total energy concepts for cruise liners

Treating the machinery as an integral part of the ship's function at the design stage saves on space, investment and operating costs.



International diesel manufacturers face stiff competition and uncertain futures even as a recovery in newbuilding orders helps business. In the U.S., the domestic market for diesels also seems to be in an upturn.



39 MTU standardizes series 396 engines

A new sales program makes the TE engine standard to reduce the number of engine versions without sacrificing application versatility.

40 Conforming to changes in legislative climate

Today's marine coatings must meet strict environmental standards. Ameron designs its products with both the user and the environment in mind.

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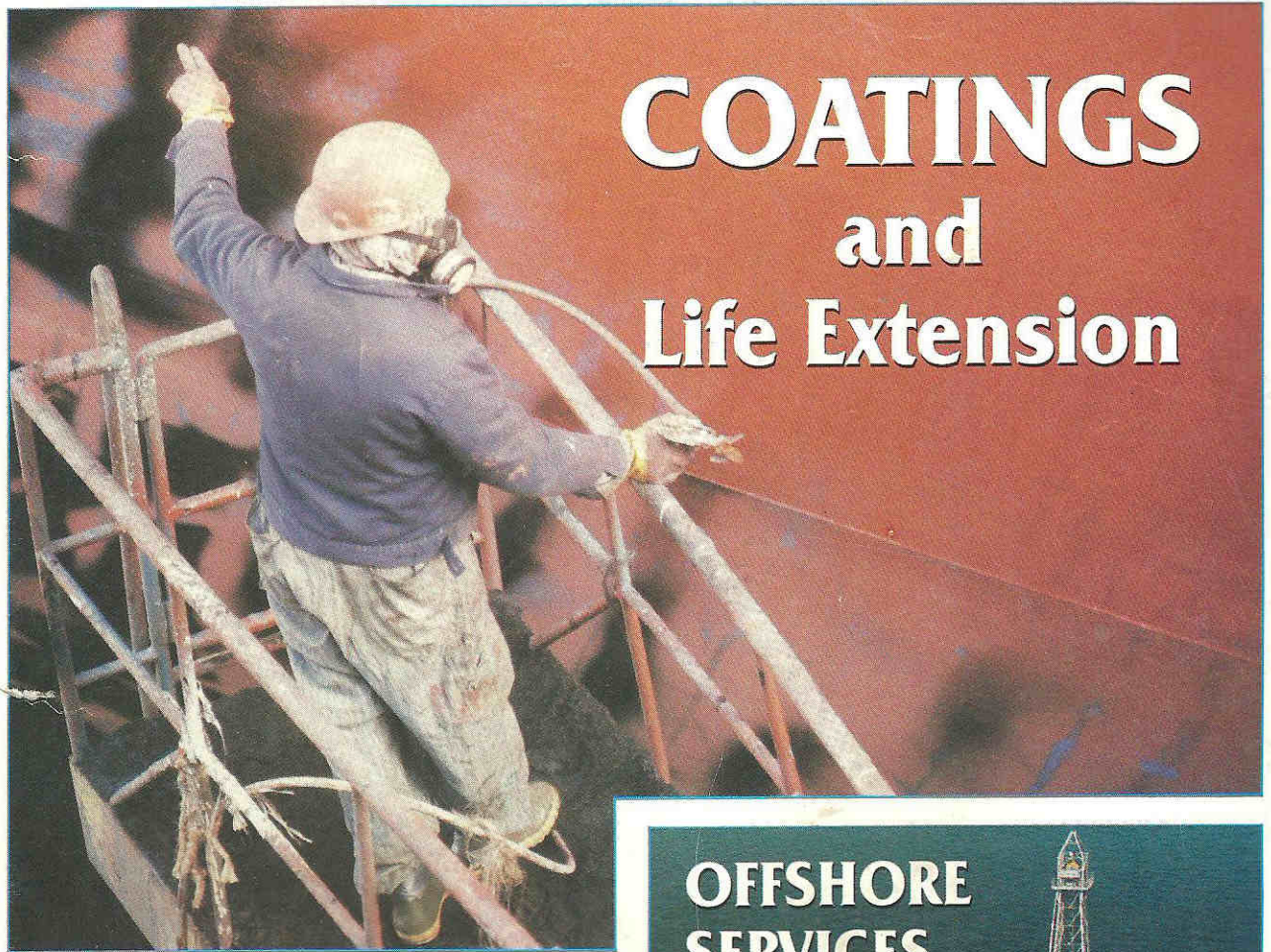
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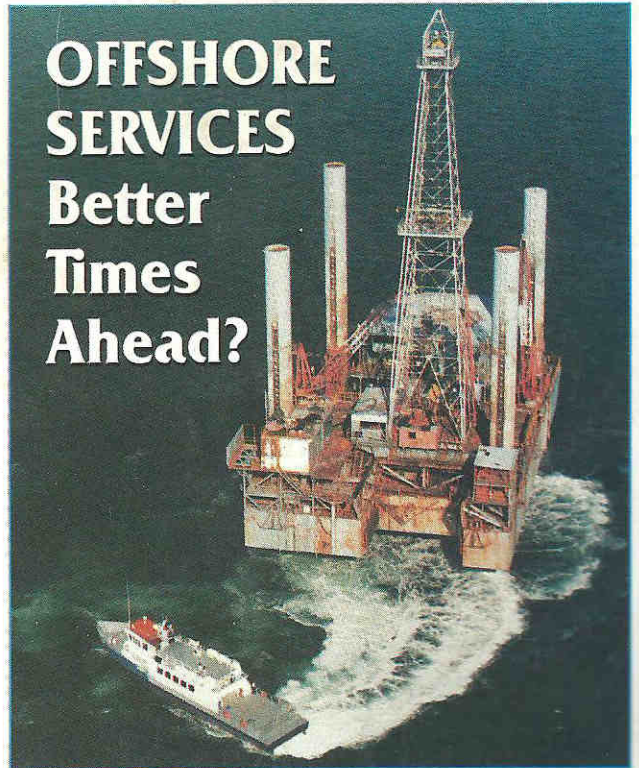
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COATINGS and Life Extension

OFFSHORE SERVICES

Better
Times
Ahead?



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**NAVAL ENGINEERING:
What's New?**

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13 Ballast tank coatings key to long ship life

Life extension won't work unless owners pay more attention to maintenance and coatings—particularly in ballast tank areas

15 Five year drydocking intervals without tin?

New regulations have sent coatings researchers back to the labs to find environment-friendly products with acceptable performance.

19 The oil patch finds new strength

With the offshore industry in recovery, oil companies, drilling contractors and support vessel operators look to a brighter future.

23 Can bridge technology cut crew members?

With seafarers in increasingly short supply, the one-man bridge is attractive to bean counters and techies, but not old-time masters.

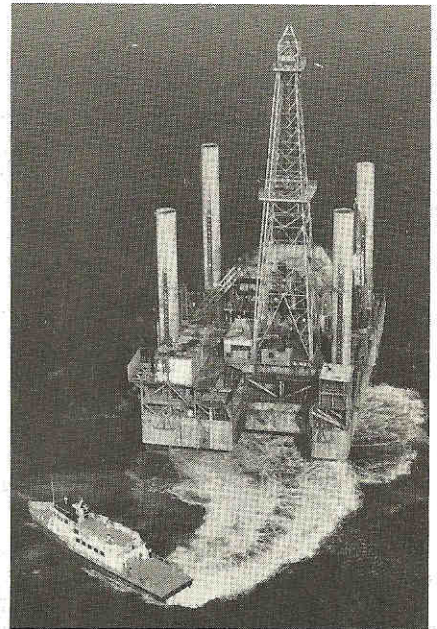
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Cyprus...More Than a Flag

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- Cyprus: Not just a flag (p.27)
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There should be happier times ahead in the oil patch for both rig and support vessel operators

49 Star Wars in the engine room

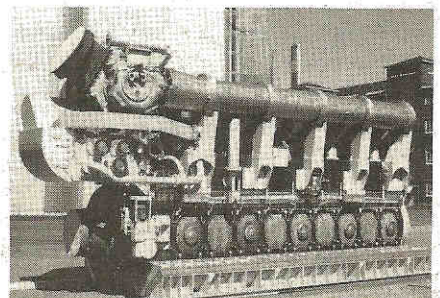
Advances with superconducting magnets and materials are moving once-fictional propulsion systems closer to reality.

53 ASNE Day exhibitor preview

A look at what will be on show at the Omni Shoreham Hotel in Washington, D.C., May 3 & 4, at the American Society of Naval Engineers' annual conference and exhibit.

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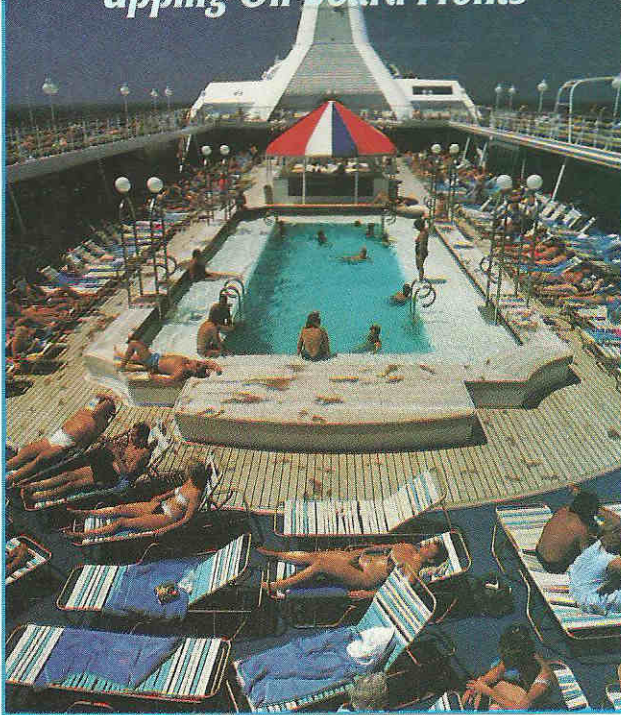
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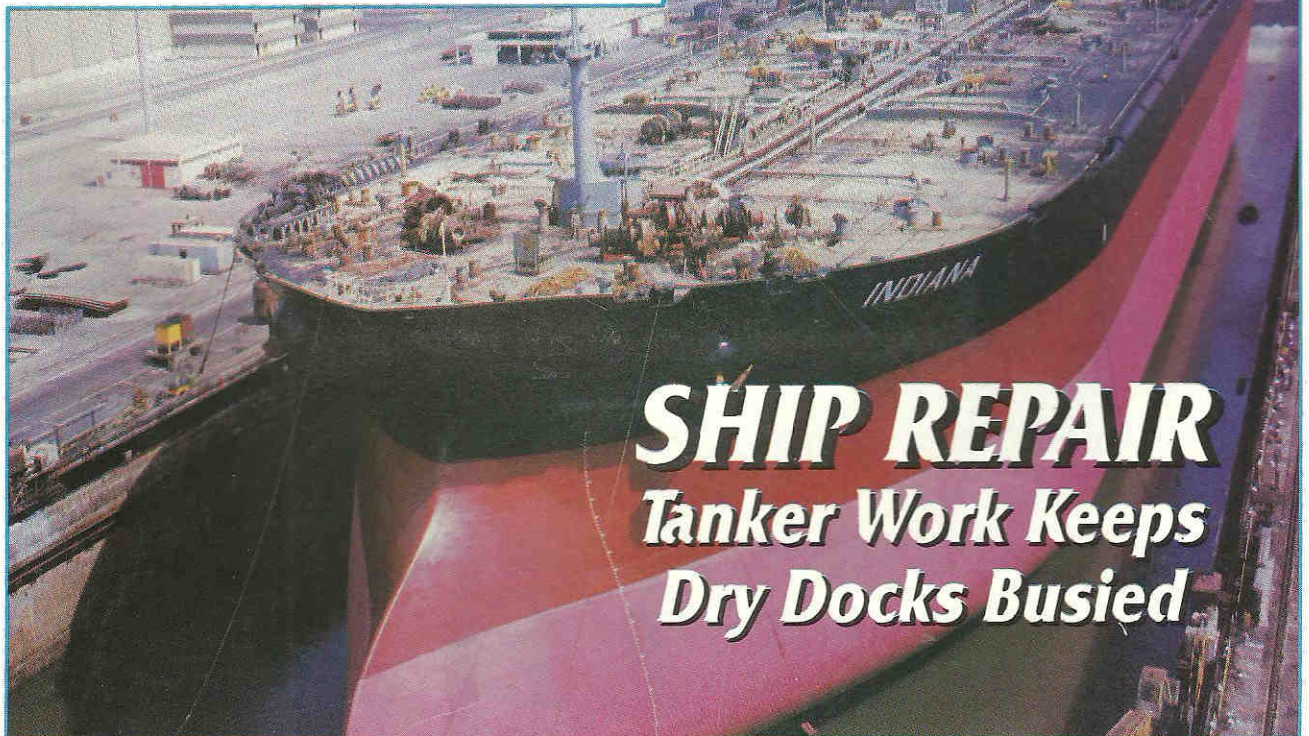
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CRUISING: *Upping On Board Profits*



48 KNOT FERRY! *Metro Marine Express*



SHIP REPAIR *Tanker Work Keeps Dry Docks Busied*

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19 **Metro Manhattan debuts in New York**

Designer Don Burg's latest generation SES Air Ride ferry, built by Avondale's Small Boat Division, will put high speed technology to the test on its Long Island-to-Manhattan commuter run.

22 **Cruise operators pursue onboard profits**

In today's costly operating environment, revenue collected from cruise fares is no longer enough. Onboard spending, such as gambling revenues, is also vital to profitability.

27 **More surprises in store from Carnival**

MARINE LOG talks to Carnival Cruise Line chairman Ted Arison. At today's newbuilding prices he says he probably won't pursue the *Sensation* newbuilding after the delivery of the *Ecstasy*. But he has surprising plans for HAL's newbuildings.

30 **Keeping old tonnage at work longer**

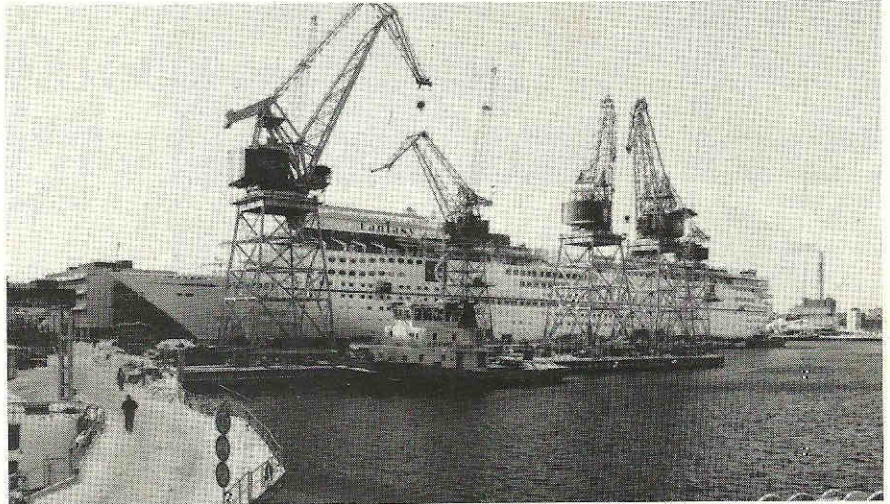
With newbuilding prices climbing higher and higher, owners of elderly ships are thinking more and more about rejuvenation rather than replacement.

32 **Rotterdam refit challenges Carrier**

Technical renovations to Holland America Line's flagship required some tight squeezes from Carrier Transicold, the supplier of the ship's upgraded air conditioning system.

33 **U.S. repairers seek commercial work**

With the Navy repair budget shrinking, U.S. ship repairers are wooing commercial operators and praying for the passage of proposed double bottom legislation.



Despite the collapse of Wärtsilä Marine, the Finnish marine technology industry has managed to hold onto its worldwide reputation for excellence

37 **SPECIAL REPORT: Finnish Marine Technology**

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- Port of Helsinki a cruise center (p.43)
- Finnish shipbuilding (p.44)
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- A "Baltic ferry" for the U.S.? (p.48)

58 **U.S. Shiprepair Directory**

MARINE LOG's special survey of U.S. shiprepairers.

67 **World repair yards look to brighter future**

A leaner, more efficient shiprepair industry has emerged to benefit from the market upturn.

73 **International Shiprepair Directory**

MARINE LOG's special survey of international shiprepairers.

77 **Karl Senner introduces MJP waterjet line**

Lower vibration and sound levels and a smooth ride are pluses for a propulsion system offering good maneuverability and high speed.

79 **Shipping 90 preview**

What will be on show at the Sheraton Stamford Hotel & Towers in Stamford, Conn., March 19-21.

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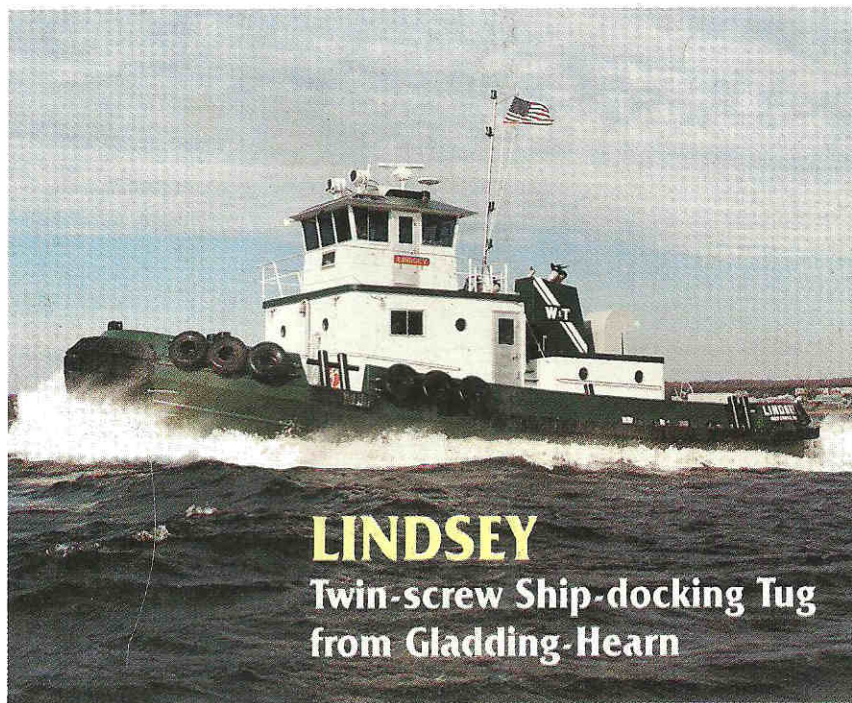
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February 1990

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LINDSEY

Twin-screw Ship-docking Tug
from Gladding-Hearn

What Sort of Navy in the Nineties?

Budgeting for the Outbreak of Peace

Fuels & Lubes

Getting the Most from
Today's Diesels
on Today's Bunkers



Features

15 A "brown water" Navy in the Nineties?

Though the Pentagon will fight it, the pols are looking to spend the "peace dividend." The result could be a Navy tailored much more closely to missions close to home waters—a change that might provide dividends for smaller shipyards.

21 *Lindsey*: Ship docking tug from Gladding-Hearn

Wilmington Tug takes delivery of a powerful, maneuverable workhorse

22 Detroit Diesel introduces the electronic engine

Technology proven in the bus and truck markets brings a "smart" diesel to the workboat market

25 Bunkers: Prices up in cold winter

A bleak winter took bunker prices up again, but quality continues to reflect the fact that today's intensive refining leaves more impurities in residual fuels.

26 Tips for bunker buyers

A survival guide for purchasers and users from Exxon International's R.H. Thornton

28 Fuel oil conditioner

A new additive from Drew Ameroid Marine is claimed to ease problems of fuel oil incompatibility and instability.

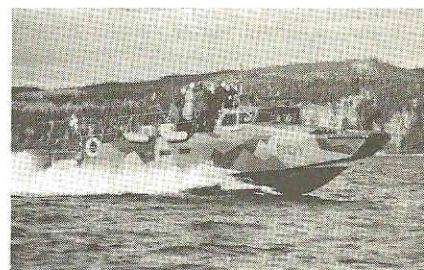
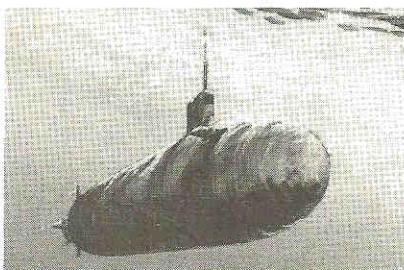
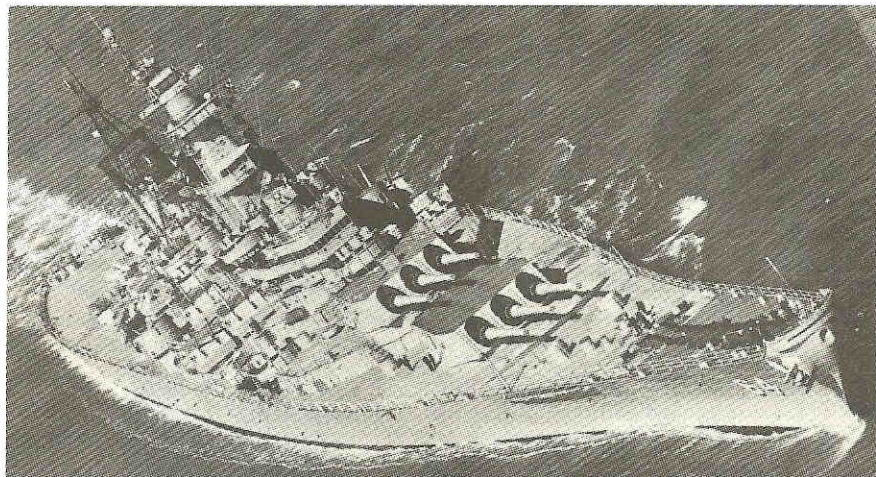
33 Matching lubes to engine needs

Lube oil formulations have had to be beefed up to meet the demands of diesels designed to wring the maximum economy from today's residual fuels

34 Advanced machinery "blood testing"

Exxcare Plus goes beyond most oil analysis systems to make machinery health monitoring its primary focus.

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Putting two battleships back in mothballs is the start of a build-down from the 600 ship Navy towards one designed for more near-home missions. It could threaten programs like Seawolf (lower left), but bring a bonus for U.S. shipyards specializing in smaller vessels, such as this Swedish commando carrier (right).

35 Lubes for workboats

Major lubricants suppliers put the emphasis on serving the inland marine market with lubes matched to workboat sector conditions.

36 Lube oil separator breakthrough

Alfa Laval introduces an advanced separator that uses Alcap technology to deal with lubes formulated for heavy fuel operation

40 Fuel oil treatment with chemicals

Unitor marine chemical specialist ERWIN GOERLITZ explains what additives can—and cannot—do to help operators burn heavy fuels

36 Pumps and valves for today's ships

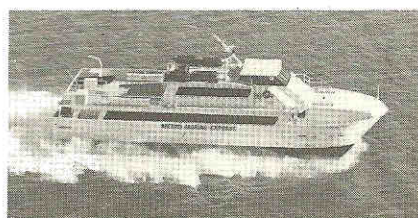
Pump and valve technology is the key to efficient operation of systems that are the ship's vital arteries

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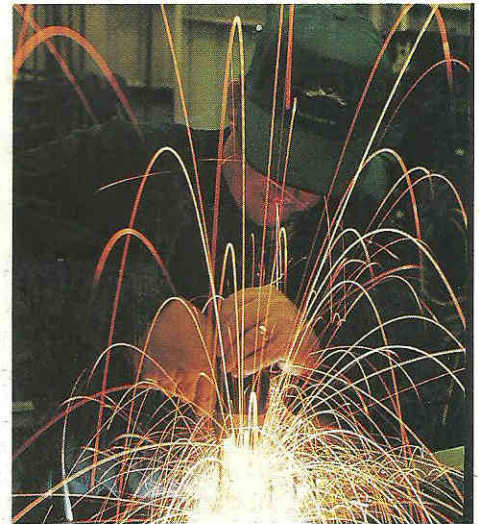
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**SHIPPING
FINANCE:
Finding
the
Bucks**

**WELDING: Refining
the Technology**



**PASSENGER BOAT BIZ:
Keeping the Customers Rolling In!**



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12 Equity markets will finance world fleet renewal

The world fleet is aging and there's a limit to how far "life extension" can go. Sooner or later, a substantial number of newbuilding orders must be placed—and the only place the funding *can* come from is the equity markets of the world. But traditional shipowners will have to change their habits—and recently investors have been cool towards shipping offerings.

17 Amerigo Vespucci: sophisticated containership

Italia Line's latest ship has a capacity of 2,232 TEU and a crew of 18—and is designed with a future jumpoization in mind.

20 Getting financing for your passenger boat

If you want to participate in the booming passenger boat market, you'll need a business plan that investors can feel comfortable with, says consultant LINDA DANFORTH

23 Variety is spice of passenger boat business

Though the passenger boat business is still growing and its big players are getting bigger, it's still an industry where the smaller operator can make an impact—and where individuality and imagination still pay off.

26 Passenger boat yards still busy

Passenger boat contracts continue to provide a useful volume of business at a number of specialist yards.

32 Welding trends in today's shipyard

New techniques and new materials are helping work get done faster and perhaps more expertly, but some new challenges are also emerging reports American Welding Society district director LEE G. KVIDAHL, chief welding engineer, Ingalls Shipbuilding.

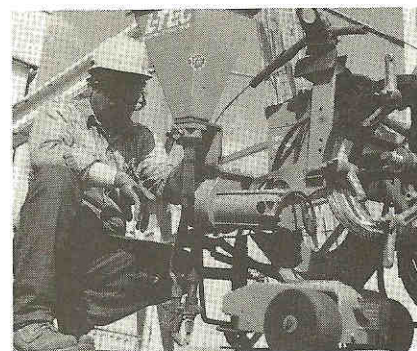
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Blount's Vistarama design shows that individual, innovative thinking still plays a major role in the passenger boat world (p.23)



Looking for bucks to build VLCCs? You'll need a story that will convince the equity markets (p.12)



Shipyards are using increasingly sophisticated welding materials and technology (p.32)

36 NAPVO Show Preview

An advance look at some of the exhibits that will be shown at this month's annual convention of the National Association of Passenger Vessel Owners.

39 Deere launches marine diesel line

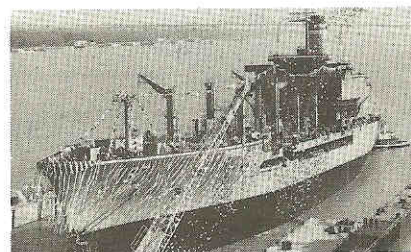
After several years of having its engines marinized by others, Deere & Co is coming into the boat market with an 80-250 hp engine line

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- Fuels and Lubes
- Valves & Pumps
- Navy Design Trends



December 1989

MARINE LOG

Reporting on marine management and technology worldwide



1990 Catalog & Buyers Guide

Distinctive Ships

Our 54th Portfolio of
Significant Recent Deliveries



Features

18 Weld method helps a record breaker

An unconventional weld technique helped *Gentry Eagle* to a record.

19 Cruise Op 89 a hit

The second MARINE LOG/LLOYD'S LIST cruise operations seminar and trade show brought cruise industry leaders together to discuss issues and look at the hardware.

22 Factory trawler conversion by Bender

Kodiak Enterprise is Bender Shipbuilding's largest-yet factory trawler conversion.

23 Distinctive Ships: Our 54th portfolio

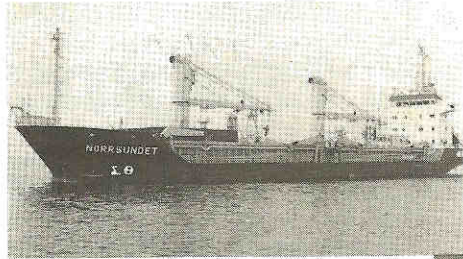
Star Princess—1,600 passenger cruiseliner with diesel-electric propulsion (p.23); *Norrundet*—First COB (container/oil/bulk) carrier (p.23); *Repubblica di Genova*—Advanced RO/LO containership from Fincantieri (p.24); *Northwest Sand-erling*—First of seven new-generation LNG ships from Japan (p.24); *Baltic Eider*—Forest products/container RO/RO from Hyundai (p.25); *Del Monte Planter*—Advanced reefer from AESA (p.26); *USSR* salvage tug from Finland (p.26); *Aquitaine*—Lead ship in AESA Suezmax tanker series (p.28); *Tai-he*—Largest containership built in Britain (p.28); *Onoe Maru*—Ore carrier with off-center propeller (p.30); *Berlin Express*—Future-oriented box ship built in China (p.32); *Fuji Maru*—Japanese-built cruise liner (p.35); *Seabourn Pride* and *Spirit*—two mini-cruisers (p.36).

42 Service experience with the Sulzer ZA40S

With more than 118 engines sold, MBS Diesel's 980 bhp/cyl medium speed is a well-proven performer.

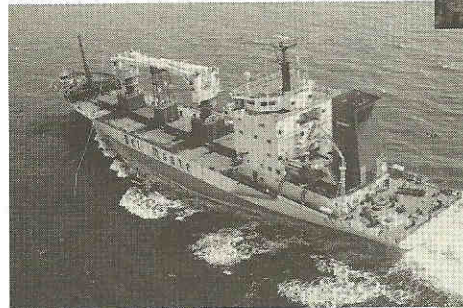
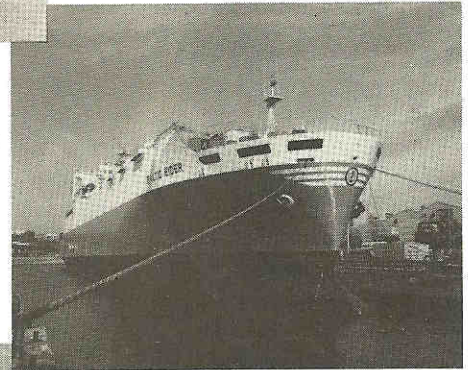
49 Catalog & Buyers' Guide

MARINE LOG's annual listings of products and suppliers serving the maritime industry.



Norrundet is a versatile COB (coal/oil/bulk) ship from Holland

Baltic Eider is a sophisticated RO/RO from Hyundai



Del Monte Planter is an advanced reefer from AESA

LNG Ariès is a 125,000 m³ LNG tanker with four cargo spheres



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- Passenger boats
- NAPVO show
- Welding trends
- Shipping finance

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MARINE LOG

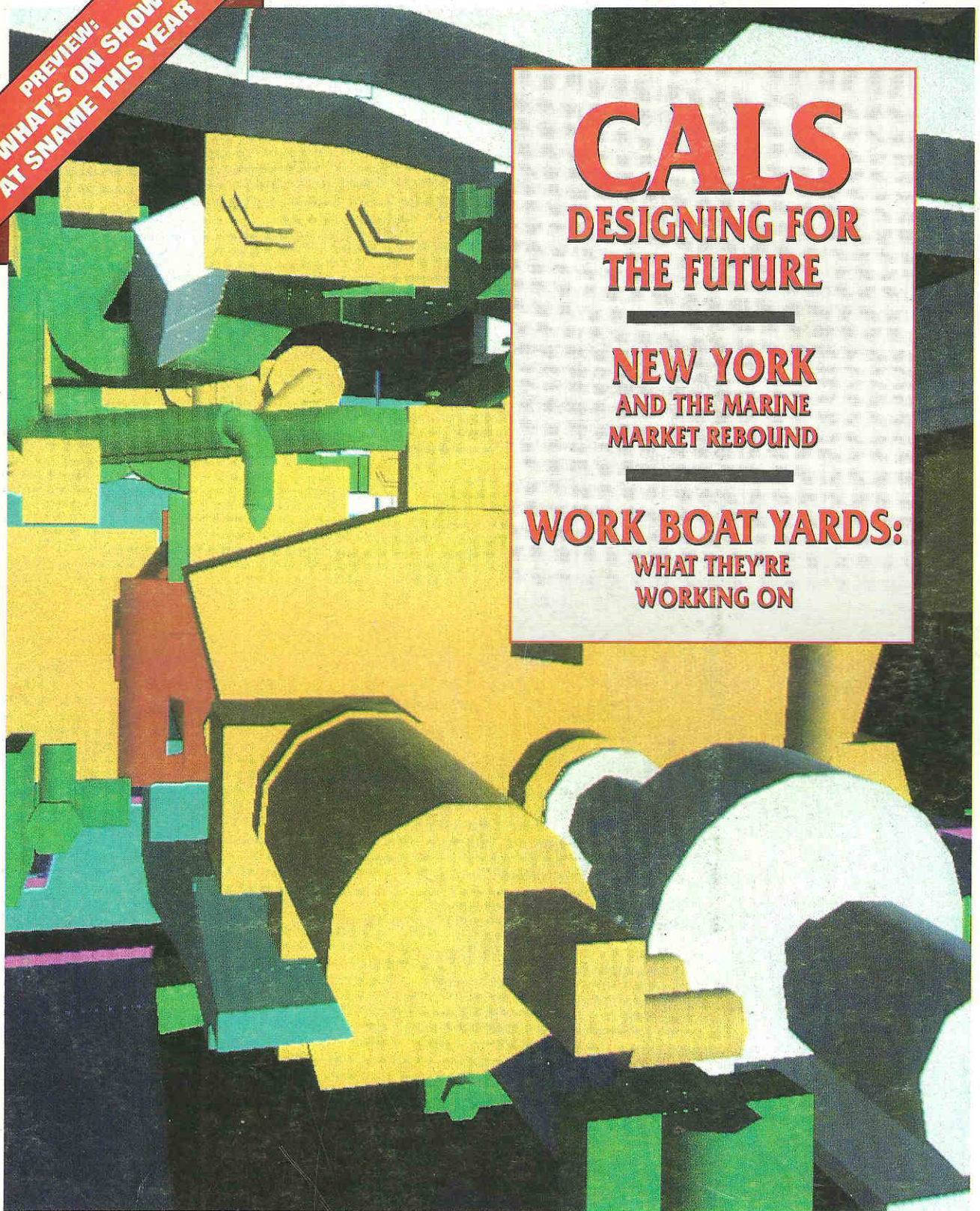
NOVEMBER 1989

PREVIEW:
WHAT'S ON SHOW
AT SNAME THIS YEAR

CALS DESIGNING FOR THE FUTURE

NEW YORK
AND THE MARINE
MARKET REBOUND

WORK BOAT YARDS:
WHAT THEY'RE
WORKING ON



Features

17 CALS: Ship design goes digital

Computer-aided Acquisition and Logistics Support starts with creation of a series of digitized data bases that can be used throughout the lifetime of the ship for enhanced productivity, quality and life-cycle support.

23 New York maritime business is picking up

With shipowners again starting to make profits, many aspects of the New York region's maritime service economy are beginning to look much brighter.

30 What work boat yards are working on

Though there's still some offshore sector work around, work boat yards have worked hard over the last several years to broaden their product mix.

34 Navy takes a commercial path to super SWATH

The T-AGOS 19 ocean surveillance ship is the culmination of a program that enlists the best commercially available technology to meet the Navy's needs.

35 Commercial SWATH focus is on passenger boats

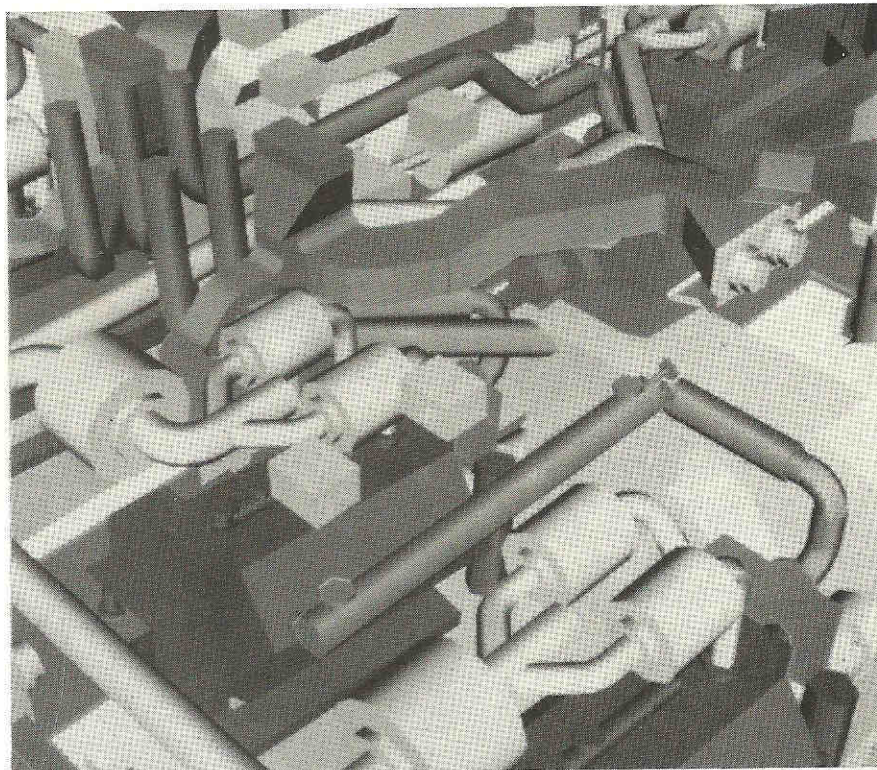
The two American firms offering competing SWATH designs on the commercial market are concentrating on areas where they can take passengers into choppiest waters—without seasickness.

41 Naval architects: Any clients besides Uncle Sam?

With Navy work slowing and domestic commercial shipbuilding largely a memory, America's naval architects must look for new sources of employment.

47 SNAME Expo: What's on show?

A preview of some of the exhibits that will be on view at the New York Hilton, November 15-17, 1989.



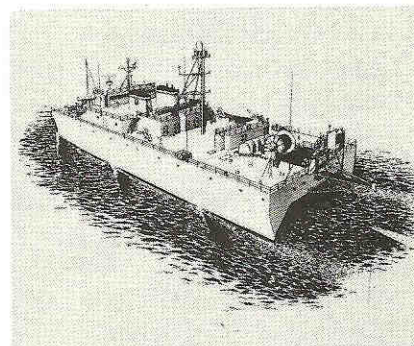
Video walkabouts of ship on computer screen are one CALS benefit. This is a three dimensional digital view of the main machinery room of USS Avenger (p.17).

50 Wärtsilä Diesel extends its empire

The acquisition of a 60% stake in Stork Werkspoor Diesel is the latest move in a campaign that has taken Wärtsilä Diesel to a leading position in the medium speed market.

52 Governments move on TBT

Shipowners will need to rethink drydocking plans: Within three years TBT antifouling work could be banned in most yards outside the Far East.



Navy's T-AGOS 19 SWATH is being built to commercial standards (p.34)

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- Catalog & Buyers' Guide
- Portfolio of Distinctive Oceangoing Ships



MARINE LOG

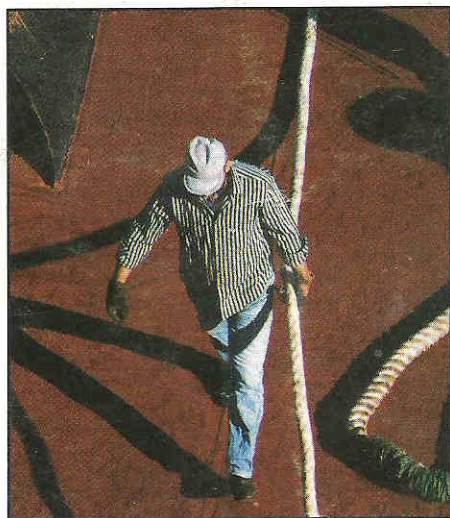
October 1989

Cruising:

*Matching the technology
to the market*



Rope tricks with Kevlar



Bath launches the Arleigh Burke

Features

21 Cruise marketers pitch the niche

With more and more berths coming onto the cruise market, individual lines are looking for distinctive selling points.

30 Floating resorts are hi-tech ships, too

Beneath all the atriums, restaurants, show lounges and boutiques, the new generation of cruise liners also boasts some very sophisticated technical innovations.

36 Cruise Op 89 show preview

A look at some of the exhibits that will be featured at this year's Cruise Op, being held at the Diplomat, Hollywood, Fla., Nov. 5, 6 and 7.

43 Flag market is still good for buyers

In a two-way squeeze between Europe's "international" ship registers and "boutique" registers, the giants of the registry business, Panama and Liberia, have been cutting prices.

46 European shipyards get set for 1990's

Years of trading subsidies in return for capacity and labor cuts may at last have produced an industry scaled about right for coming market conditions.

51 Readying Exxon Valdez for dry dock

Devine divers help get the battered supertanker into San Diego.

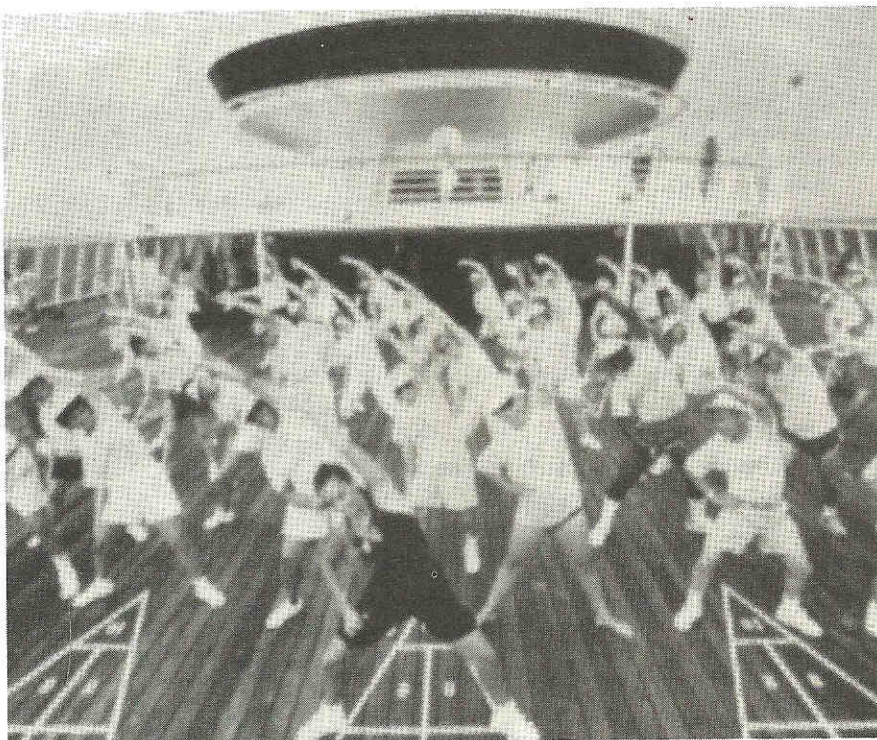
56 Rope tricks with Kevlar

Just two men—one on the winch, one on the line—could be enough to moor a supertanker, using ropes made with Du Pont's aramid fiber.

58 Massachusetts firm has gauging taped

Long experience in tough applications and rigorous testing have won widespread acceptance for resistance-tape technology.

Contents



The cruise market continues to grow—but cruise lines are having to make extra efforts to differentiate their products in order to keep ships filled with happy vacationers (p. 21)

62 Launching the DDG 51

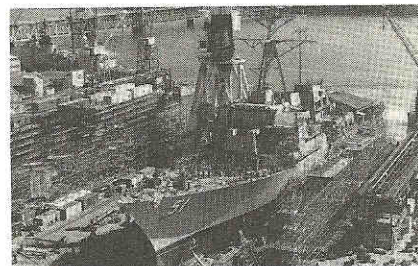
The Navy's new class of Aegis-equipped destroyers comes closer.

65 U.S. owners drydock in Dakar

Location makes Senegal yard a natural ship repair choice.

68 Naval exports help European yards

Mine warfare vessels, patrol craft and submarines are all in demand.



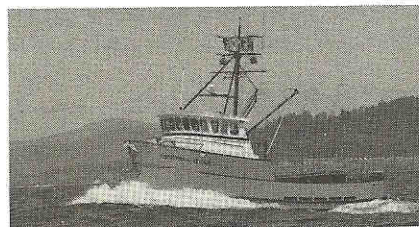
The surface Navy of the 21st century comes a step closer with the launch of Arleigh Burke (DDG 51) (p. 62)

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- Previewing SNAME
- New York region maritime industries
- Workboat builders



MARINE LOG

September 1989

High Speed Ferries:

Smoothness and speed count in battle to woo commuters



DELFIN:
Filling a niche in the
cruise ferry market



USS WASP:
Spreading the benefits
of Navy work



Features**19 Ferry emphasis is on speed and ride**

There's growing competition between differing design philosophies as operators of fast ferries choose which contenders offer them the right combination of glamor, speed, smoothness of ride, economy and reliability. Among the contenders: SWATH designs, catamarans, air cushion vessels, hydrofoils, hovercraft and wave-piercers. A slick appearance that pulls the passengers is a major sales point, most operators concur.

24 Delfin: Filling a Baltic niche

Rauma Repola's first cruise ship delivery is a small multi-use cruiser that aims to take an 8.5% slice out of the 9 million passenger Baltic cruise-ferry market. Already her owners have a second ship on order.

30 Wasp contracts bring widespread benefits

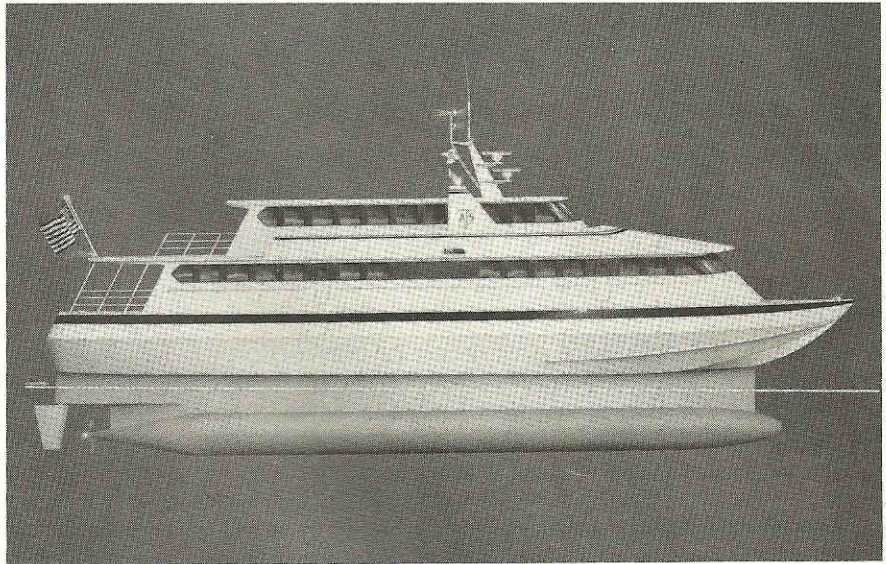
When Ingalls Shipbuilding distributed contracts for the Harrier-carrier/LCAC mothership USS *Wasp* (LHD-1), \$312 million of economic benefits washed into 39 states and Canada. Over \$33 million went to California contractors, including turbine and gearing supplier, Westinghouse.

34 Washington eyes the cruise industry

The cruise industry is no low profile venture and now the pols and bureaucrats have woken up to its existence. There are some genuine concerns about safety, but the tax n'spenders and U.S.-flag lobby also want to get in on the act. One of the ideas being aired: extending U.S. cabotage laws to cover cruises to nowhere.

39 Directory of international ship managers

Listings of international ship managers, including addresses, key personnel, fleet sizes and specializations.

Contents

SWATH designs are among options open to fast ferry operators (p.19)

Washington is eyeing cruise ships operating out of U.S. ports. One proposal: to extend U.S. cabotage laws to day cruise vessels (p.34)



An ever increasing proportion of the world fleet is under the operational control of specialist international ship management firms (p.39)

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- Ship registry developments



Carnival Cruise Lines' Fantasy

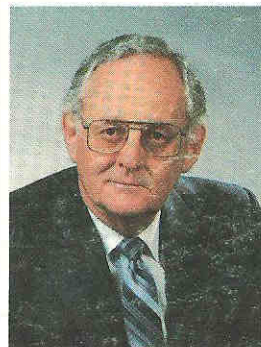
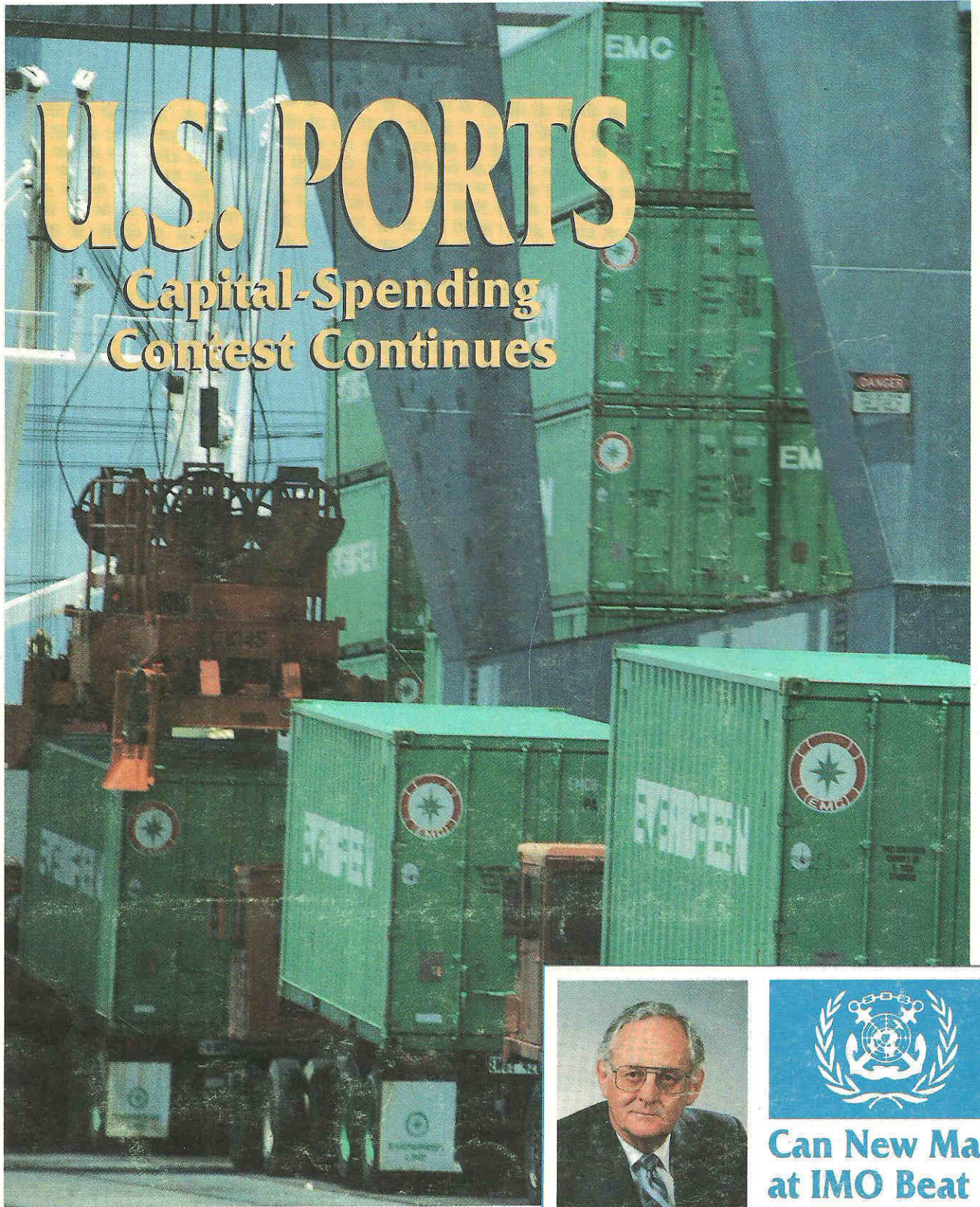
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MARINE LOG

JULY 1989

U.S. PORTS

Capital-Spending
Contest Continues



**Can New Man
at IMO Beat
Budget Blues?**

Features

4 Can new man at IMO beat budget blues?

The new secretary of the International Maritime Organization, Canadian William A. O'Neil, has to keep the U.N. agency's program on track despite budget problems.

15 U.S. ports still locked in competition

With the trend still being towards larger ships making calls at fewer ports, there's ongoing competition to woo shipowners.

16 New York's Liburdi faces the world

Lillian C. Liburdi, director of the port department of the Port Authority of New York and New Jersey, tells MARINE LOG how New York is positioning itself to take advantage of trade developments.

20 New lube oil for naval gas turbines

Because warships don't fly as high as airliners, they don't need a lube able to take restarts at -55°C .

25 The case for Hazelwood

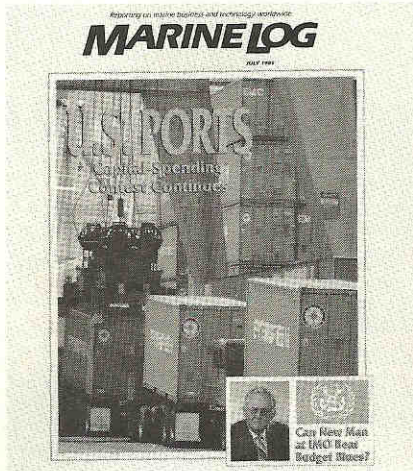
Attorneys for Captain Joseph Hazelwood produce important new evidence that indicates that *Exxon Valdez* was *not* in pilotage waters when control was handed over to the third mate.

26 When fuel efficiency means a lube penalty

Today's crosshead diesels have made major gains in fuel efficiency. But the price can be increased consumption of more expensive types of cylinder oil.

29 MAN B&W rounds out its medium speed range

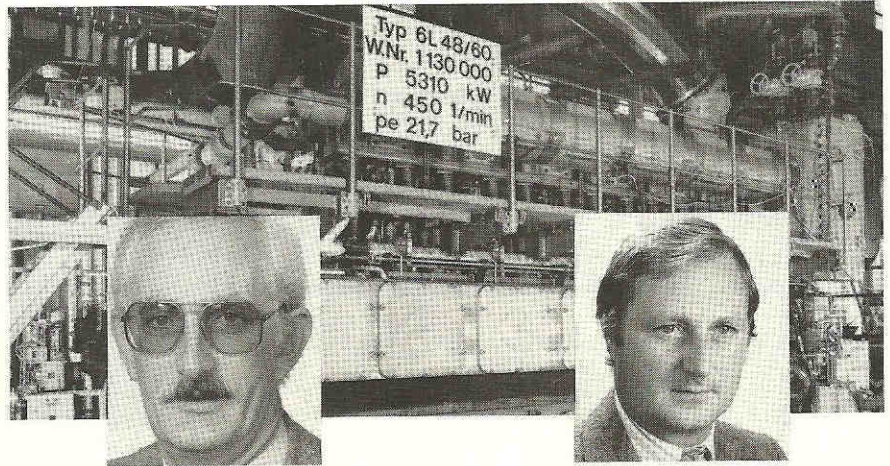
Europe's largest marine diesel manufacturer is betting that as shipowners return to the newbuilding markets they will opt for large bore four strokes. To meet their needs, it has developed a new family of engines.



Cover photo from Georgia Ports Authority typifies bustle as boxes move to and from America's ports (p.15)



New York-New Jersey port department director Lillian Liburdi says ports must have a global outlook (p.16)



MAN B&W's Volker Böhm (left) and Hanns-Günther Bozung presented a new member of the MAN B&W family to the maritime press last month: the 1,200 bhp/cyl L48/60 (p.29)

33 40,000 hours on IFO 380

After five years operation on the same 380 cSt fuel as the main engine, a RO/RO's Wärtsilä Vasa 32 auxiliary engine has now started on its next five.

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• Marine insurance

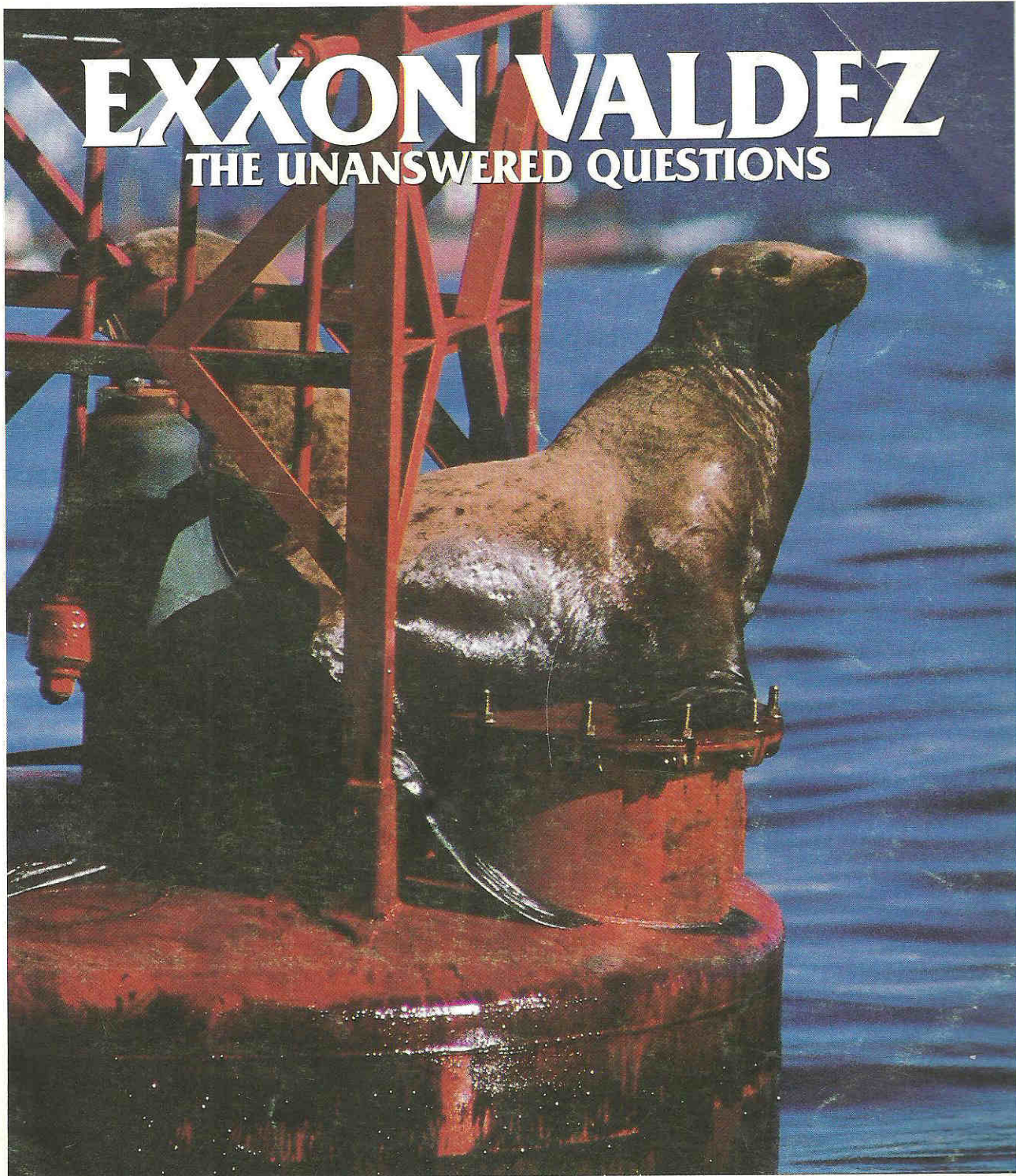
• Complying with Marpol Annex V

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MARINE LOG

MAY 1989

EXXON VALDEZ THE UNANSWERED QUESTIONS



**Cruise + Ferry '89:
What's On Show**

**Tax Ax Hacks
EUSC Fleet**

**Norwegians Still
on a Roll**

MARINE LOG

May 1989

Reporting on marine business and technology worldwide

Vol. 94, No. 5

FEATURES

20 Exxon Valdez: America's ship of shame

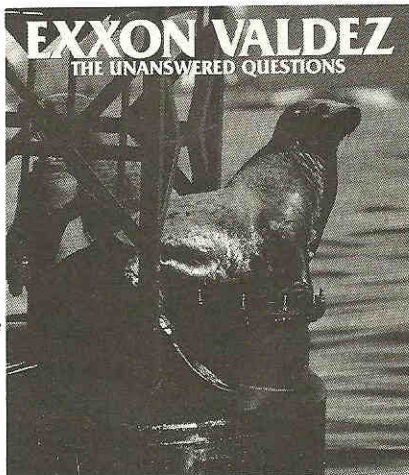
One of the most modern and best equipped ships in the U.S. merchant fleet is at the heart of an ecological catastrophe. It raises big questions about merchant marine ethics, including the proper limits to a master's authority, when to refuse illegal orders and what constitutes an illegal order. The Alaska spill draws attention to the ongoing problem of alcoholism aboard the supposedly "dry" fleet. The incident has also called into doubt the future of one of the most progressive shipboard management programs to be tried in the U.S.-flag fleet.

24 Big Apple lures ferry operators

The ferry business serving New York City has become a flourishing mini-industry. Now new high speed craft are coming in along with amenities such as on-board phones as sophisticated commuters start looking for speed and service. But one pioneer operator has decided to call it quits and concentrate on real estate development.

27 Tax ax threatens the EUSC fleet

The effective U.S.-controlled fleet of foreign flagged vessels that defense planners expect to find available in war or emergency is shrinking. The reason? A lost tax break is forcing Americans to become minority partners in their own shipping ventures or to bareboat charter ships rather than own them. Ironically, big losers may be members of U.S. maritime unions that lobbied for the tax change. Without foreign flag operations, some owners will lose the synergy that makes it worthwhile to also keep some ships under the U.S. flag. Fortunately, the GAO is believed to be conducting a study that will show what's happening.



SIPA PRESS/Geoffrey Orth

Exxon Valdez is at the center of an ecological nightmare and a marine industry debate on ethics, command and booze (p.20).



Norwegians like Ole Schroder have been able to take advantage of a new international ship register and favorable tax breaks for limited partnerships (p.35).

35 Norwegian shipping bounces back

Entrepreneurial zeal has enabled Norwegians to make the most of government policies that have created a ship register free of unproductive restrictions and a tax regime that has encouraged doctor-and-lawyer money into fleet renewal.

41 Cruising heads up market

With market research indicating the best opportunities for growth are in the upscale rather than budget sectors of the market, cruise operators are investing in tonnage intended to woo more affluent passengers—and earn bigger per diems. But some are cautious about how far up market is far enough before passenger satisfaction starts to outstrip bottom line satisfaction.

44 Show preview: Cruise + Ferry 89

A look at some of the exhibits that will be on show at London's Kensington Exhibition Center on 24 and 25 May when the cruise and ferry communities get together for Europe's major event in their marketplace.

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- U.S. Shipyards
- Annual Listings & Statistics

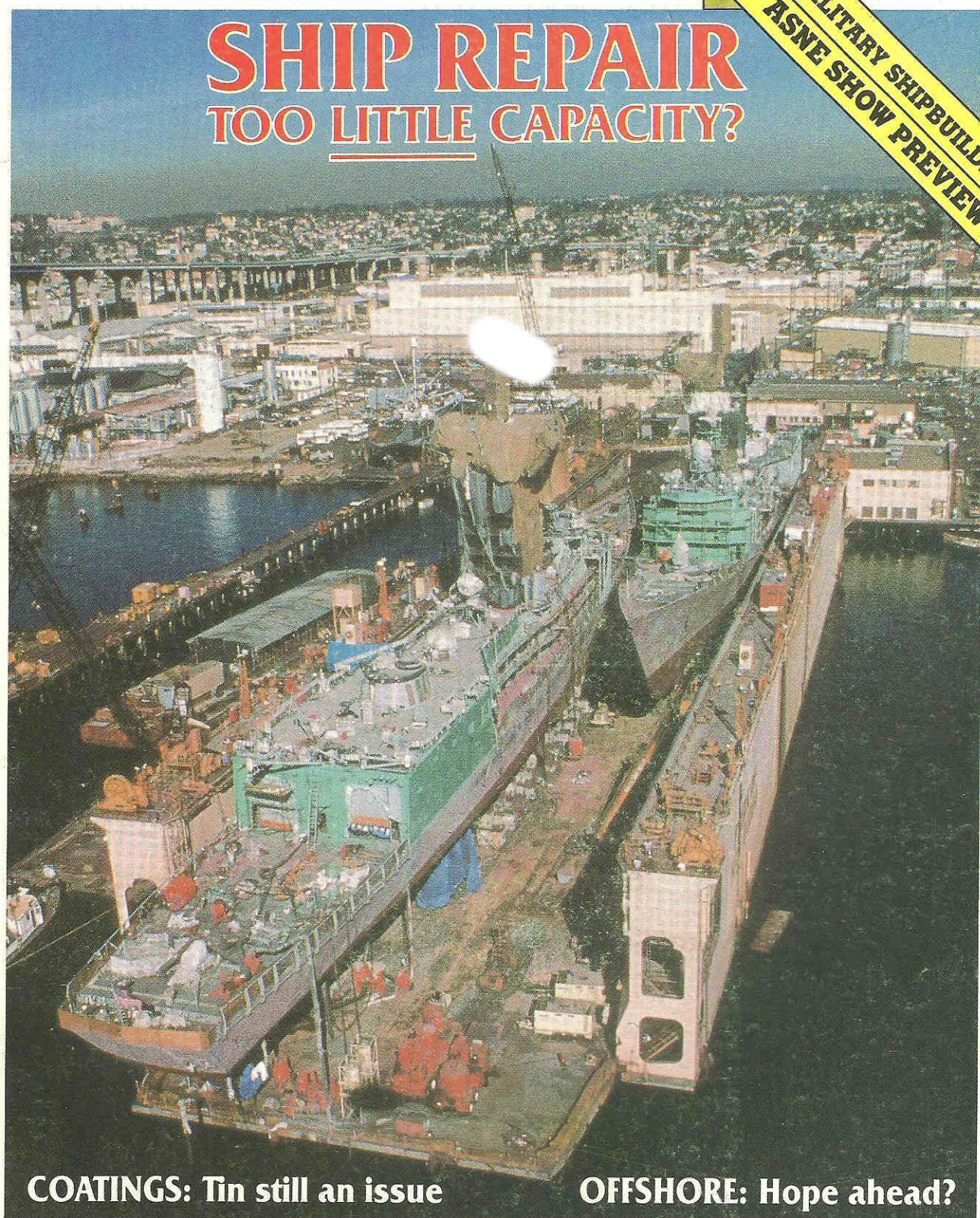
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MARINE LOG

April 1989

SHIP REPAIR TOO LITTLE CAPACITY?

MILITARY SHIPBUILDING
ASNE SHOW PREVIEW



COATINGS: Tin still an issue

OFFSHORE: Hope ahead?

MARINE LOG

April 1989

Reporting on marine management and technology worldwide

Vol. 94, No. 4

FEATURES

21 U.S. ship repair nearing capacity balance

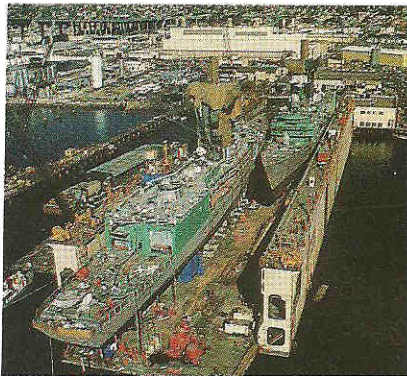
In recent years, the capacity of the U.S. ship repair industry has been savagely reduced. Meantime, a lot of what's left is blotted up by Navy work (often at little profit to the shipyard) and a weak dollar has made American yards more cost competitive with Europe. As a result, owners are having to stem ships further ahead in order to get into their yards of first choice.

29 EPA a toothless tiger on tin-containing A/F?

Last year's U.S. legislation on the tributyltin content of antifouling could have limited initial impact. It controls only manufacture and application of coatings in the U.S. So compliance with EPA standards is virtually voluntary for owners who get their hulls coated outside the U.S. Longer term, however, action in IMO may produce an equitable international agreement on antifouling toxicity.

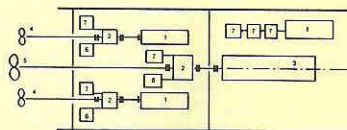
35 MILITARY SHIPBUILDING

- **ASW Shocker:** A special panel's report to the House Armed Services Committee says that the new generation of silent Soviet subs presents a threat so grave that U.S. Navy priorities must be changed drastically—with the Navy's internal "political" structure needing a drastic overhaul to stop the needed reforms from being frustrated (p. 35).
- **Danes pick GE for patrol craft:** The LM500 gas turbine has been chosen for the CODAG propulsion plant in the Royal Danish Navy's Stanflex-300 vessels (p. 41).
- **ASNE Show preview:** We sneak a peek at what will be on show at Washington, D.C.'s Omni Shoreham on May 4 & 5, 1989 (p.46)



Ship repairers are busy again. Here two Navy ships are drydocked simultaneously at Southwest Marine (p.21)

LM500 CODAG Propulsion Plant



- Legend
1. Diesel engines
 2. Reduction gears
 3. LM500 gas turbine
 4. Controllable & reversible propellers
 5. Fixed pitch propeller
 6. Hydraulic motor
 7. Hydraulic pump

GE's LM500 gas turbine has been selected for the CODAG plant in the latest Danish patrol craft (p.41)

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57 Better times in international ship repair

The world's ship repairers are happier than they have been for many months. The upturn in the tanker market has found owners prepared to spend more on repair and maintenance in order to extend the lives—and protect the asset values—of their vessels. The first yards to benefit have been those that have always specialized in large tankers, but as the VLCC docks have started to fill up with the type of tonnage for which they were originally built, there's been a domino effect that has helped smaller yards, too. As a result, prices are firmer in many repair centers and many observers see further increases on the way in the months ahead.

65 Offshore outlook

There are *some* hints of hope for the offshore industry—but you'll still have to look hard to find them. Though the best prospects for new exploration now appear to be outside the U.S. Gulf, U.S. offshore service companies have learned how to keep industry capacity under control until demand picks up.

NEXT MONTH

- U.S.-controlled foreign flag operations
- Focus on ferries
- Scandinavian developments

Reporting on marine management and technology worldwide

MARINE LOG

MARCH 1989

AFTER THE DROUGHT

Keeping Afloat on the Waterways



**DIESEL
DEVELOPMENTS**

Picking the Winners in
the Power Struggle

SHIP MANAGERS

Keeping Costs Contained
as the Market Recovers

MARINE LOG

March 1989

Reporting on marine management and technology worldwide

Vol. 94, No. 3

FEATURES

33 Barge business is bouncing back

Last year's drought didn't pull the plug on the inland waterway industry. It simply put a temporary hold on a recovery that had been well underway for some time as the industry strove to absorb a huge overcapacity of barges. Now that capacity has been largely blotted up. Evidence of this: some barge yards are opening up again.

21 Ship managers learn to deal with price hikes as the market rises

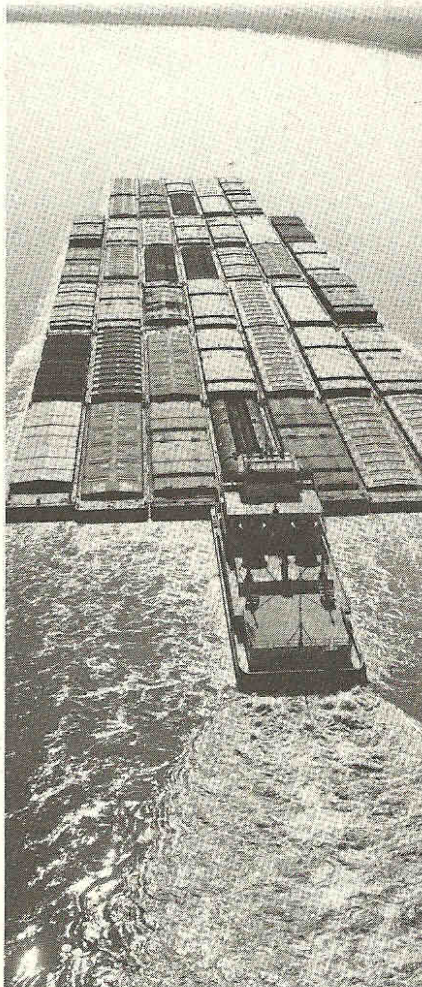
Ship operators are no longer in a buyers' market for many of the services they've been accustomed to getting at bargain prices in the lean years. Now they are starting to have to pay more for everything from skilled seagoing staff to drydockings as more and more tonnage comes out of lay-up and back to work. MARINE LOG asks some of the world's top professional ship managers how they are managing to keep cost increases from getting out of hand.

24 Diesel industry puts emphasis on reliability

Fuel economy alone is no longer the be all and end all of diesel development. With fuel prices on hold, at least in the short term, and the decline in fuel quality having leveled off a little, ship operators are looking for engines that can run absolutely reliably with the type of minimal maintenance possible with today's crews.

28 U.S. domestic market favors smaller diesels

The type of tonnage actually being built in the majority of U.S. yards is dominated by small workboats, small passenger boats and small military auxiliaries. The market has thus tended to be dominated by Cat, Cummins and Detroit Diesel.



With last year's drought behind it, the inland waterways industry is firmly back on the road to recovery (p.33)

40 View from the C10 bridge

Raytheon's SNA-91 Bridge Integration System gives operators of APL's post-panamax containerships a wide range of technical and navigational data. And the bridge outfit includes an adaptive autopilot that is helping achieve significant fuel savings.

43 Silencing a sailship power system

Besides 2,500 m² of canvas, the world's largest sailing cruise liner has a diesel electric power system. But thanks to Lohman + Stolterfoht engineering, the passengers will hardly be aware of it.

45 Tighter T-boat regs on the way

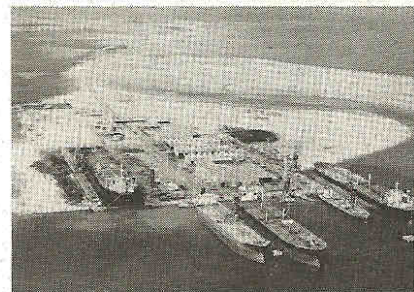
The U.S. Coast Guard has unwrapped its proposals for updating the Subchapter T regulations for "small" passenger boats—which, these days, may carry over 1,000 passengers and which are often much longer than the types of boats for which the original regulations were drafted.

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- ASNE Show Preview



Reporting on marine management and technology worldwide

MARINE LOG

February 1989

CRUISING What Comes Next?



ROYAL VIKING SUN
A Spectacular
Floating City

U.S. PORTS:
The Quest for Cruise
Business Continues

MANNING LEVELS
Hi-Tech Ships. . .or
Lo-Cost Crews?



SPECIAL REPORT
FINNISH CRUISE SHIP
KNOW-HOW AND
MARINE TECHNOLOGY

FEATURES

21 Manning: Seafarer shortage looms

Leading international ship managers are warning that a shortage of trained, affordable seafarers from sources like the Philippines and India could threaten the shipping revival. Nonetheless, many managers still favor low cost crews over highly automated ships. Meantime, in the world of U.S.-flag shipping, American crews remain the world's most expensive. But maritime unions are making many concessions in order to enhance competitiveness.

24 Big operators now dominate cruising

After a wave of acquisitions, the cruise industry is dominated by a handful of giant operators. And though the shipbuilding boom continues, prices have been increasing steadily—to \$200,000 a berth and over in some cases. There will always be places for niche operators, but the middle size cruise company is starting to be something of a rarity.

25 SPECIAL REPORT: Finnish Cruise Ship Know How and Marine Technology

Finland has gained a special expertise in the design and construction of cruise vessels and marine equipment and systems:

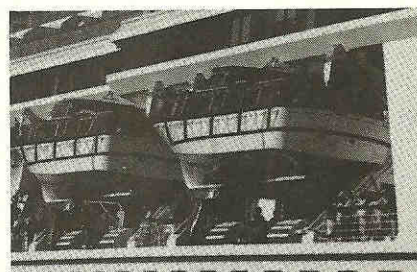
- The shipyards (p.29)
- Marine transmissions (p.31)
- Rivalry in the cruise ship catering business (p.32)
- Wärtsilä Diesel bags big Birka order (p.32)
- Flushed with success (p.33)
- The power station solution for cruise ship propulsion and energy needs (p.35)
- Elomatic—Cruise ship design specialist (p.37)
- Air conditioning supplier looks worldwide (p.38)



With expensive takeovers to pay for and new ships to fund, some cruise lines may hope passengers will spend less time in the pool, more in the casino (p.24)



Royal Viking Sun offers more space per passenger than most cruise ships and truly spectacular public spaces (p.47)



Fassmer tender is also a lifeboat (p.53)

43 U.S. cruise ports reach for the top

As the cruise industry booms, ports are scrambling to get a bigger piece of the action through innovation, renovation and the hard sell.

47 Royal Viking Sun: Kloster's space ship

Recently delivered to Kloster Cruise's Royal Viking Line, *Royal Viking Sun* offers far more space per passenger than the industry norm, giving her designers the chance to attain new dimensions in oceangoing luxury. Built by Wärtsilä Marine, the ship is now in the middle of a round-the-world odyssey.

53 Tenders double as lifeboats

Cruise ship tenders from West Germany's Fassmer not only serve as fast passenger shuttles but meet the rigorous demands of SOLAS for semi-enclosed lifeboats.

59 Heart transplant for Hybur Intrepid

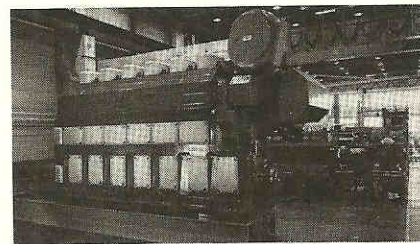
When poor quality fuel killed his old engine, Captain Meade Hyde decided it was time to opt for a unit designed from the outset for operation on heavy fuel at all loads.

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- Diesel Developments

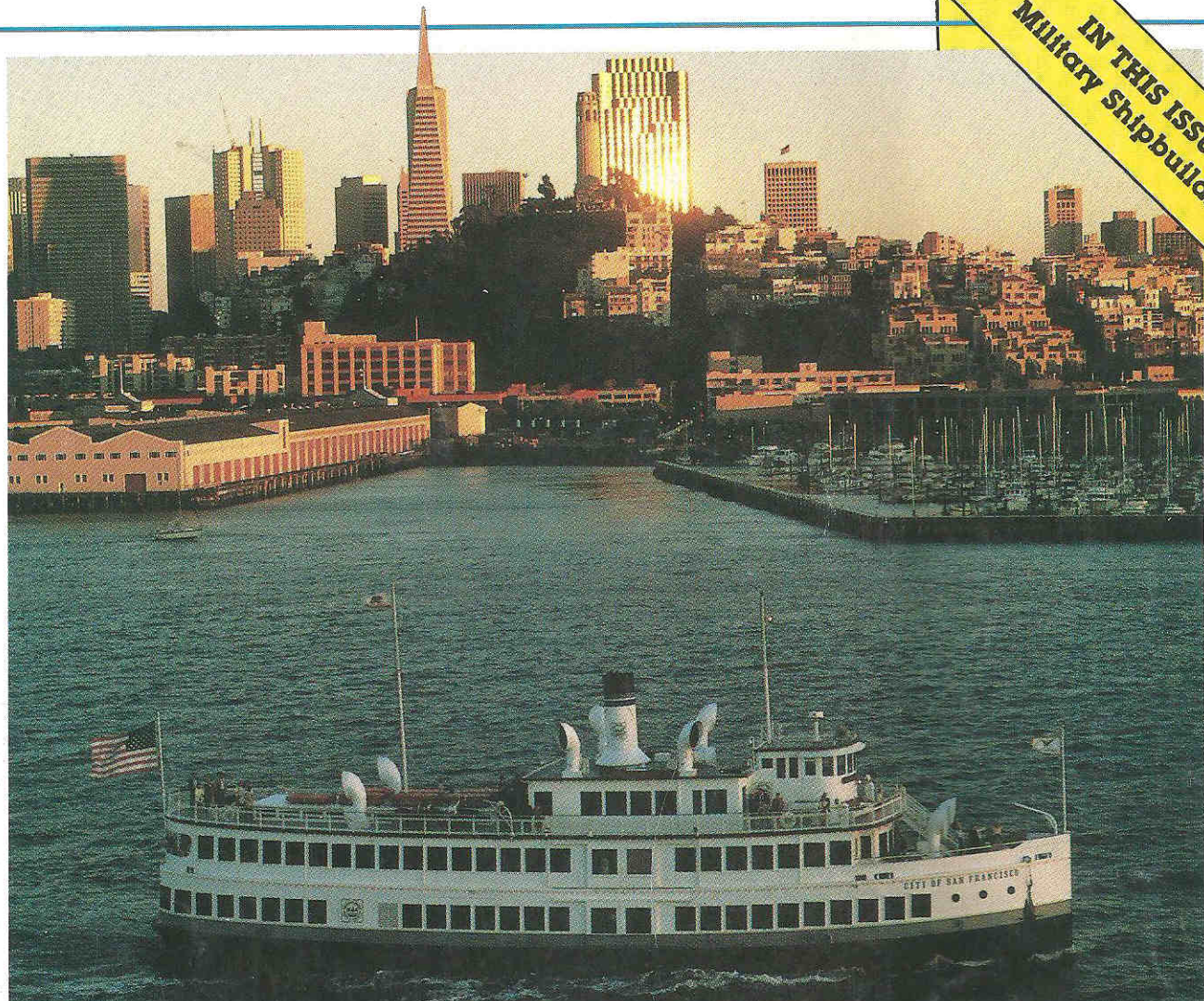


Reporting on marine management and technology worldwide

MARINE LOG

JANUARY 1989

IN THIS ISSUE
Military Shipbuilding



BOOSTING PASSENGER BOAT PROFITABILITY

MONEY FOR SHIPS
Where to go when the
banks don't love you

ICEBREAKERS
Stranded whales help
Coast Guard case

MARINE LOG

January 1989

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Vol. 94, No. 1

FEATURES

19 Shipping finance gets creative

After years of depression, shipowners' equity reserves are sadly depleted. But now they're again thinking about fleet expansion—at least with second hand tonnage. Where's the money going to come from? Mezzanine financing (which bridges the gap between your own money and what your bank will loan you), lease deals and equity participation all figure in packages that are enticing investors back into shipping once again.

24 Boosting passenger boat profitability

What do strippers, Santas and glaciers have in common? They're all helping savvy passenger boat operators to bring more customers aboard their vessels.

29 Waterjet speeds Swedish island trips

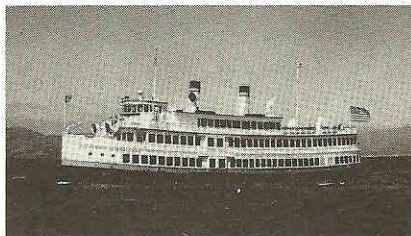
Vindbadan, a 16 m waterjet propelled, 92 passenger charter boat is finding plenty of work in the Stockholm Archipelago.

41 Distinctive Passenger Boats

A portfolio of noteworthy vessels: Aluminum hulled ferries *La Nina* and *La Pinta*; sidewheel "steamer" *Anson Northrup*; cruise passenger ferries *Canima* and *Bermudian*; Seaway excursion boats *Island Duchess* and *Island Countess*; James River sternwheeler *Annabel Lee*; ferry *Haig Point I*; multipurpose commuter/charter vessel *Massachusetts*; converted offshore utility *Cape Ann* and 118 ft, 600 passenger, 27 knot catamaran *Catalina Flyer*.

37 Show preview: NAPVO

This year the National Association of Passenger Vessel Owners goes to San Diego for its annual convention and trade show.



This month's focus is on the booming excursion boat business, with a look at how operators boost profits (p.24), a portfolio of distinctive boats (p.31) and a look at exhibits at this year's NAPVO Show (p.39). This month's cover is courtesy of Hornblower yachts, for details of Hornblower's latest order, see p. 10.



How much will defense-secretary-designate John Tower pare from Navy programs? (p.45)

40 Whales save USCG icebreaker

There were red faces in Washington after the Russians had to be called in to help break two whales out of the Alaskan ice. So now there's likely to be funding for the new icebreaker long sought by the U.S. Coast Guard. It may well use some Finnish technology.

42 Goodbye smoke, Hallo swirl

POWER & PROPULSION looks at Deutz-MWM's answer to the problems of incomplete combustion of fuels.

45 MILITARY SHIPBUILDING

- Where will Tower's ax fall? Bringing Navy spending into line with Gramm Rudman Hollings won't be easy for President-elect Bush's nominee for Secretary of Defense (p.45).
- Military Shipbuilding Notes (p.46).
- Navy buys fire curtains and exothermic torches—the *Stark* experience has taught the Navy lessons about how to deal with smoke and fire (p. 49).
- U.S. Shipbuilding Report (p. 51).

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- Focus on the cruise industry
- Finnish marine technology
- Managing manning levels and costs

Reporting on marine management and technology worldwide

MARINE LOG

DECEMBER 1988

DISTINCTIVE SHIPS



Our 53rd Portfolio of Significant New Vessels

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Navigation &
Communications

MARINE LOG

December 1988

Reporting on marine management and technology worldwide

Vol. 93, No. 11

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15 53rd Portfolio of Significant New Vessels

MARINE LOG's picks for 1988 are:

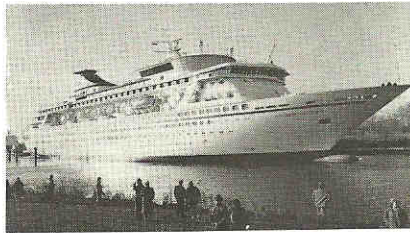
- High-tech super containership *President Truman* (p.15),
- First ship out of Meyer Werft's new covered building complex *Crown Odyssey* (p.15),
- Flexible forest products carrier *Polaris* (p.16),
- World's largest combi-carrier *Nils Dacke* (p.16),
- First of a new generation of cruise liners *Seaward* (p.17),
- Advanced containership *CGM La Perouse* (p.18),
- Ultra efficient tanker *Nisseki Maru* (p.18),
- First of three advanced products tankers *Oscosky* (p.19),
- New design VLCC *Yukong Frontier* (p.20), and
- Ultra luxurious cruiser *Seabourn Pride* (p.21).

24 Montreal Protocol impacts shipowners

In order to protect the Earth's ozone layer, 24 developed nations have agreed to consumption and production cuts of some widely used marine refrigerants, particularly R11 and R12, the azeotrope R502 and halons 1211 and 1301, starting in 1989. While good for the planet, these new limits will place a burden on some ship operators.

27 Navigation and communications: Trend is to flight bridge

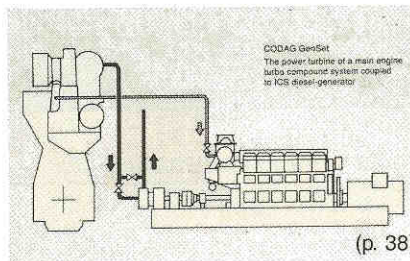
The aim of today's bridge design is to let a smaller team take advantage of a greater flow of data without getting distracted by information overload. Crucial to the present movement towards smaller bridge teams is the ability to take advantage of present advances in the ship's navigational instrumentation. The navigational equipment that leading manufacturers offer today is light years ahead of the products of only a few years ago.



A sight to behold: 1988 Distinctive Ship Crown Odyssey as she prepares to depart on her first sea trial in December 1987 from Meyer Werft Shipyard in Papenburg, West Germany (p.15).



Garbage like this is not only unsightly; it's unlawful under MARPOL 73/78 which takes effect December 31 (p.34).



(p. 38)

34 New regulations place big fines on at-sea trash dumpers

Old ways of at-sea disposal of ships' garbage will have to be cleaned up in the face of tough new penalties for breach of MARPOL 73/78 rules. From December 31, 1988, the way mariners handle disposal of ship-board garbage will be different. Plastics are the main hazard to the marine environment so they are prohibited from at-sea dumping. Other materials are subject to regulations as well.

38 CODAG genset cuts electricity costs

Savings of 50% or more in ship-board electricity production costs are being claimed as possible with a combined diesel and gas genset system that incorporates a power turbine developed by MAN B&W Holeby. The system is a turbo compound system in which part of the exhaust gas from a turbocharged diesel engine is drained off the exhaust gas manifold and instead of going to the turbocharger is used in the separate power turbine to produce mechanical power.

49 1988/89 Marine Log Catalog and buyers guide

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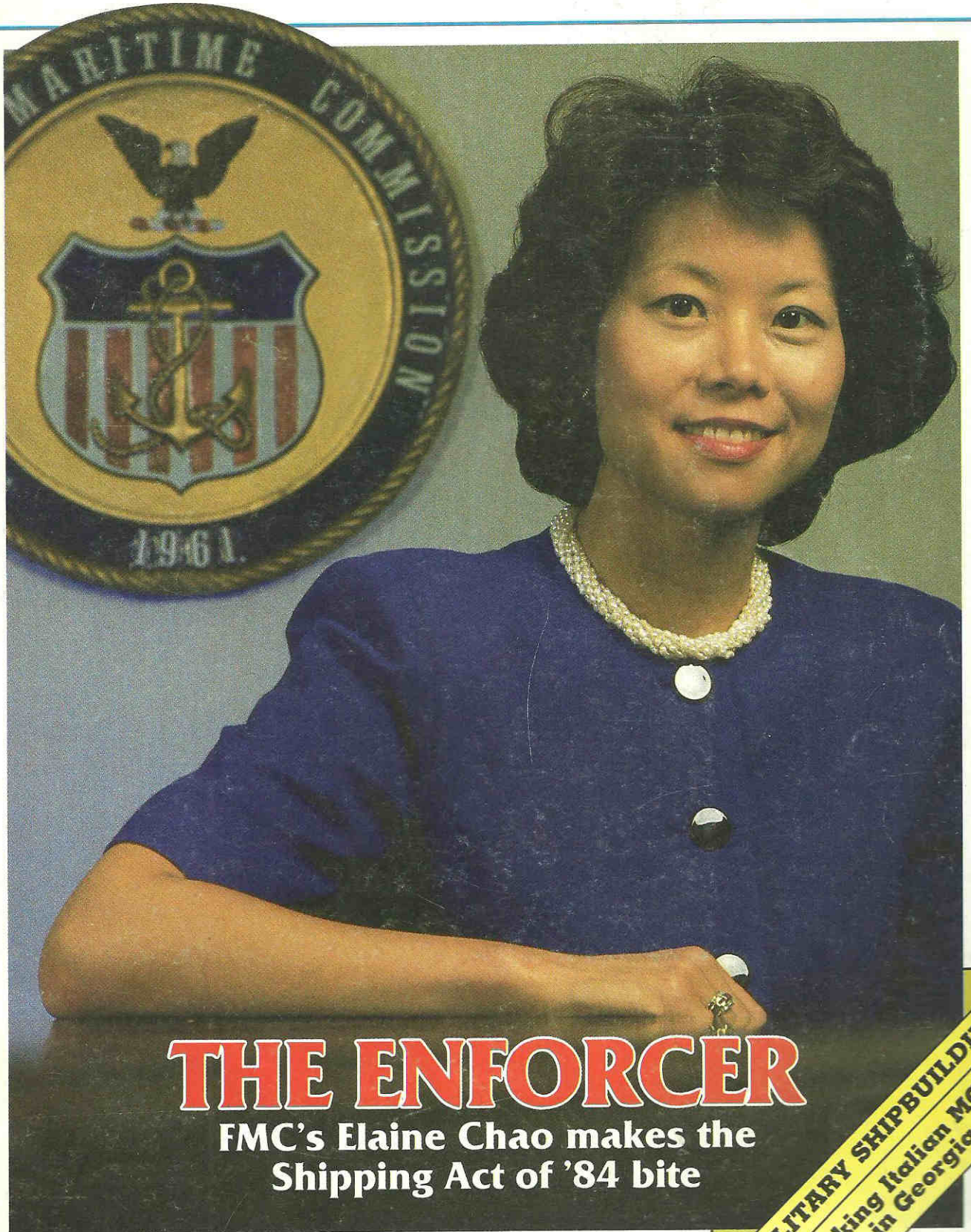
- Innovative vessel financing
- Excursion business outlook
- NAPVO Show preview
- Portfolio of distinctive boats



Reporting on marine management and technology worldwide

MARINE LOG

SEPTEMBER 1988



THE ENFORCER

FMC's Elaine Chao makes the Shipping Act of '84 bite

MILITARY SHIPBUILDING
Making Italian MCNs
in Georgia

Ferries: What's new?

MARINE LOG

September 1988

Reporting on marine management and technology worldwide

Vol.93, No.8

FEATURES

21 Elaine Chao gets the '84 Act together

The Chairman of the Federal Maritime Commission explains its role in enforcing the Shipping Act of 1984 and gathering data for the review of the legislation that is mandated for next year.

28 Coast to coast: fast ferry firsts

In cities from New York to Honolulu, surface effect designs are being selected for innovative waterborne transit services.

35 Improving a state's water transit system

Joe Owens explains how the North Carolina Department of Transportation has upgraded its ferry operation.

39 Show preview: Ferries '88

A look at the exhibits accompanying this month's IMTA annual conference in Boston, Mass.

41 Gas turbine power for cruise liners?

Already the preferred means of propulsion for non-nuclear naval vessels, the aero-derived gas turbine could be very attractive for cruise liners, claims GE.

47 Show preview: SMM, Hamburg

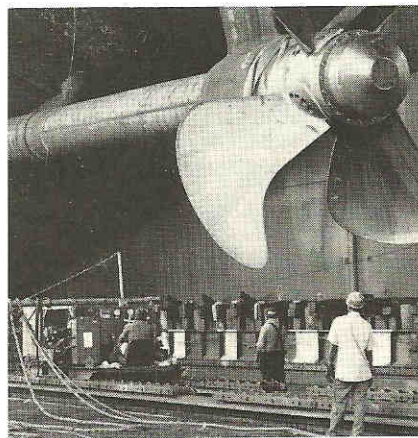
The focus is on West German marine technology as Hamburg's international maritime event attains its quarter century.

62 When the ship manager is a diskette

Some shipowners have found a new market for their expertise—selling other operators the ship management and shipboard management programs that they've proven in their own fleets.



FMC's Elaine Chao talks about the Shipping Act of 1984 (p.21)



Transferring a fleet oiler newbuilding from land onto the floating dock at Penn Ship (p.59)

64 Tin free A/F from International Paint

With continuing controversy on the environmental impact of TBT (tributyltin), the market leader offers an alternative way to get long antifouling life coupled with fuel-efficient hull polishing. The new tin-free A/F technology is already backed by experience on over 400 hulls.

59 MILITARY SHIPBUILDING

- Military Shipbuilding Notes (p.60)
- Building MCMVs Italian-style—in Georgia(p.61).
- Philadelphia Navy Yard puts Pyplok pipe-joining technology through its paces in carrier SLEP work and finds major benefits compared to welding(p.67).
- U.S. Shipbuilding Report (p.70).

64 Cruise line's cure for pump problems

Cruise operations put major demands on pump systems. Carnival Cruise Line's Ray Tilley tells of his experience in replacing worn pump parts with a graphite-fiber laminate composite material

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- Return of the SS *Monterey*
- Reefer ships



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MARINE LOG

OCTOBER 1988

THE RETURN OF THE S.S. MONTEREY



Staying Out of Dry Dock
How in-water maintenance
helps the bottom line

Reefer Business Booms
Why they're smiling in
the banana patch

MARINE LOG

October 1988

Reporting on marine management and technology worldwide

Vol. 93, No. 9

FEATURES

16 Return of the S.S. Monterey

Thirty six years after her debut, as a Mariner freighter, and ten years since she last sailed, as a passenger/cargo ship, the S.S. Monterey is back in business—as a cruise liner. She's been brought back to life as a result of entrepreneurial flair and the cruise ship knowhow of Finland's Wärtsilä Marine and Norway's Platou Design. Owned by a limited partnership in which a maritime union, the IOMMP, has a stake, she's now in service in Hawaiian waters.

21 Reefer operators try to build on boom

Today's banana boat song has a happy tune, but though the freight rate premiums that have lately been earned by modern, pallet-friendly ships make it tempting to think of newbuildings, prospects are for steady rather than spectacular growth. A recent study by Drewry examines what's ahead in the refrigerated cargo trades and at the challenge to full reefer ships posed by reefer containers.

26 ASNE Tidewater holds a symposium

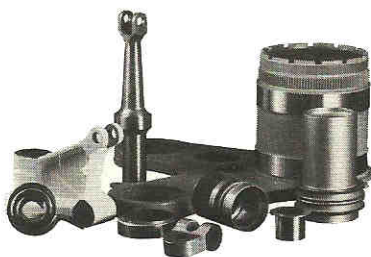
...and MARINE LOG previews the exhibits at the event, which will look at ship maintenance and readiness and is being held at the Virginia Beach Pavilion, October 12—13, 1988.

31 Maintenance in the water

Shipowners are continuing to opt for in-water surveys, hull cleaning and long life antifoulings as a means to defer costly visits to dry dock. Though there can be some cases when the economics don't work out, often the savings are huge. A new consideration for owners is the impact of the new tin-free longlife, polishing antifoulings.



The S.S. Monterey is back in service as a cruise liner (p.19)



Plenty of hardware will be on show at ASNE's maintenance and readiness event (p.27)



London-based Tramp Oil is making major advances as a bunker supplier (p.38)

38 New breed of bunker supplier

In a world marine bunker market that is shrinking, and that has disenchanted some of the oil majors, London-based supplier Tramp Oil continues to grow at an impressive rate. That's because it's a trader not a broker.

39 Cutting insurance costs: A new approach

W. SLATER ALLEN argues the case for a rigorous loss prevention program and strict checks on both people and vessels as the means for marine insurers to stay in the black while keeping premiums low. He'd like to see a marine insurer adopt this "Factory Mutual" approach, which has worked in other industries.

43 New workboat engine from Volvo Penta

Volvo's 16 liter TAMD 162 develops from 470-550 hp, taking the firm into new market territory. Designed specifically for workboats, the engine is suitable for both main propulsion and auxiliary applications in larger vessels.

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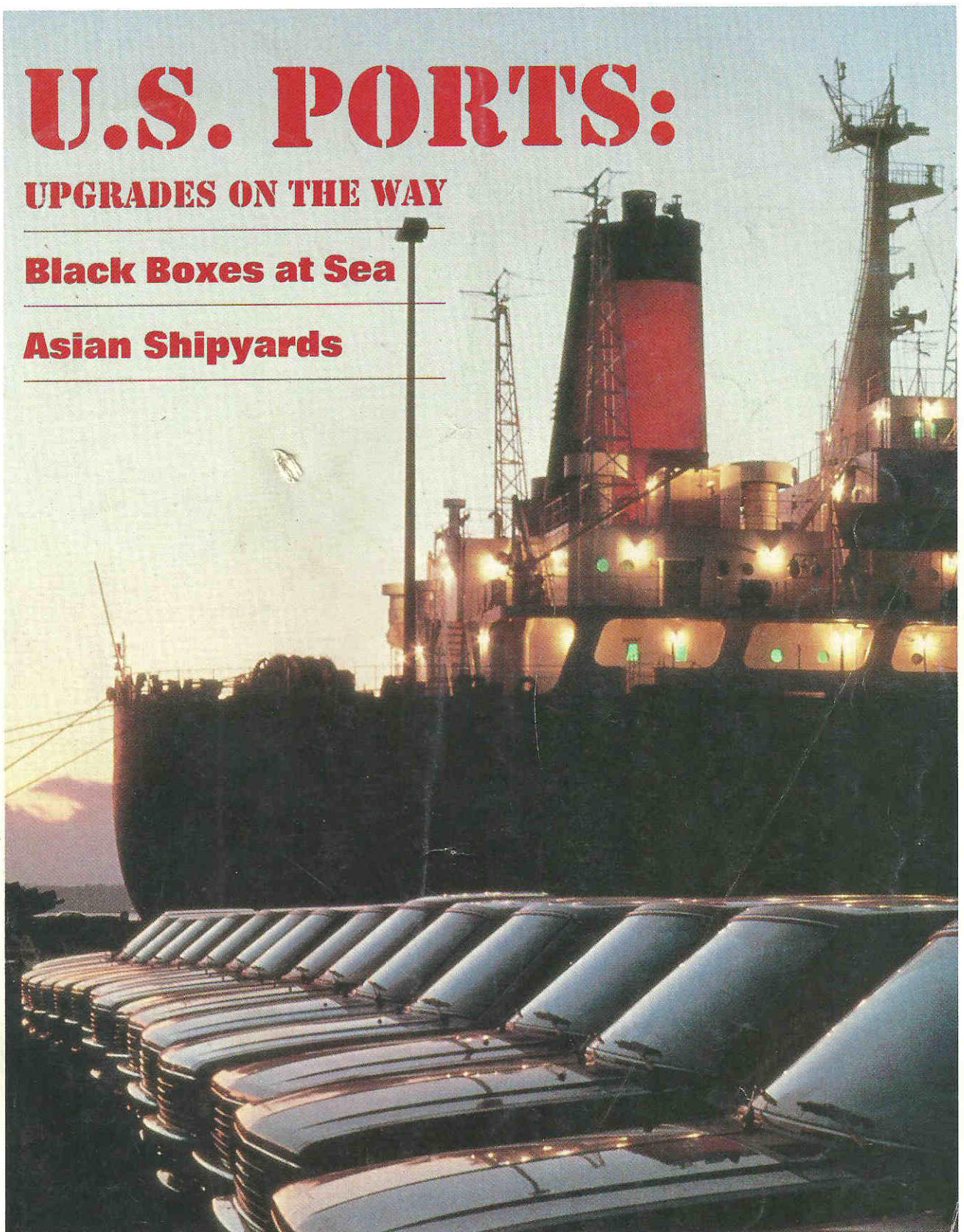
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U.S. PORTS:

UPGRADES ON THE WAY

Black Boxes at Sea

Asian Shipyards



FEATURES

20 Asia's Big Three battle for orders

Squeezed by low cost competition, Japan's shipbuilders are hoping that they can survive by slimming, automating and putting the emphasis on hi-tech, hi-value ship designs. But, writes International Editor DOUG WOODYARD, Korea and China are taking ever increasing shares.

29 Singapore floats a hotel

Bethlehem Steel's Singapore yard has built a tourist hotel on a barge.

31 Indian yard takes hi-tech tack

Hindustan Shipyard has inaugurated a covered shipbuilding dock, opted for CAD/CAM and modular construction and delivered a drill ship.

32 WID cuts tanker fuel bills

The WID (Wake Improvement Duct) improves the flow of water into the propeller to improve efficiency and save on fuel costs.

34 U.S. ports: Business never better

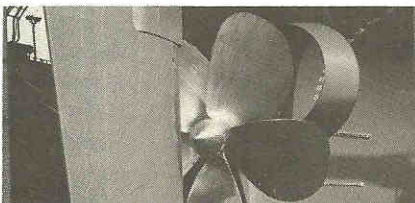
TREVOR LEWIS-JONES reports that the import binge and the boom in cruising have meant brisk business at America's salt water ports. Now the 1986 Dams and Harbors Act signals an end to recent years' frustrating delays in getting port improvements underway.

43 Caracas: Largest RO/RO from Danyard

At 163.08 m LOA, the 14,000 dwt RO/RO *Caracas* is so large that Danyard's Frederikshavn Vaerft had to build her in two parts that were then joined after launching. Designed in conjunction with her owner, Mercandia, the ship not only offers size but also great cargo flexibility and impressive fuel economy.



Front cover photo from Port of Seattle shows auto imports rolling ashore. Imports have helped U.S. ports to an all-time business high. (p.34)



First U.S. fitting of fuel-saving WID (Wake Improvement Duct) is to Standard Oil's 124,751 dwt *Tonsina*. (p.32)

44 Lube oils now critical to diesel progress

POWER & PROPULSION looks at how advances in lube oil technology have been crucial to development of the new generation of diesels with their higher internal pressures and temperatures. PLUS: Tests for lube oils (p.44); Selecting the right lubricant (p.45).

47 The black box goes to sea

Captain FRANK SEITZ inspects the marine voyage recorder on the *Stuttgart Express* and learns that the "black box" can do more than help in accident investigations.

50 Electronics: What's new?

The law says more ships must fit ARPAs. There are two ways to go: low cost "bolt-on compliance" or a new generation of raster scan radars. Meanwhile, in position finding the news is that GPS is still on the way.

57 Fighting sea water system corrosion

Experience with an alternative to chlorine for protection of ships' sea water systems shows promising results for tanker operations.

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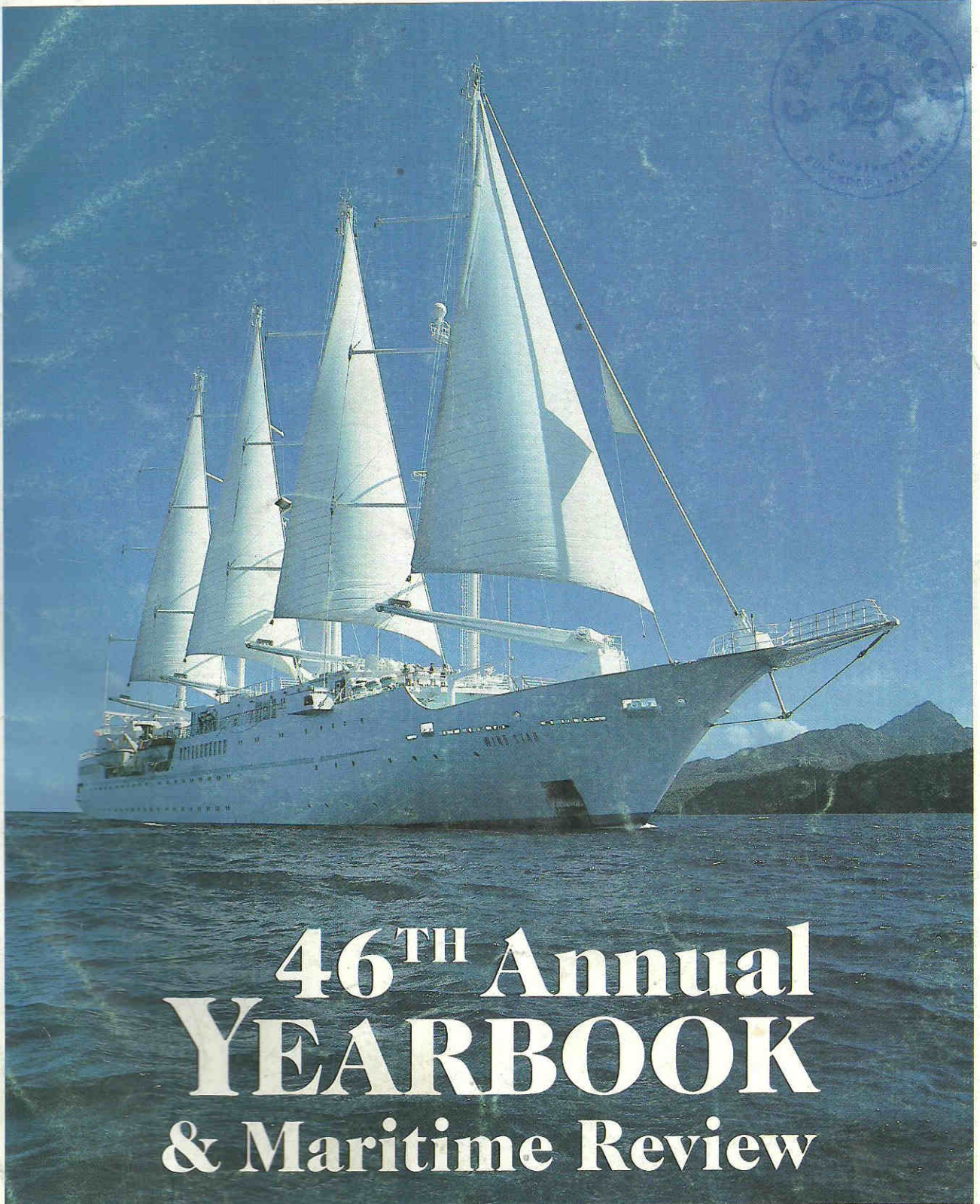
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MARINE ENGINEERING/LOG

JUNE 1987



46TH Annual
YEARBOOK
& Maritime Review

FEATURES

19 QE2 has a change of heart

The world's most famous steamship has become a motor vessel as part of a major life extension make-over.

25 U.S. and world shipping: Ups as well as downs

The cruise industry goes from strength to strength, tankers have had some help from OPEC, but the USL collapse is a reminder that times are still tough.

33 U.S. Navy shipbuilding: Procurement tapers so knives sharpen

Budgetary concerns are paramount, the father of the 600-ship navy is gone, and increasingly competitive shipyards must fight for whatever orders are still out there.

49 U.S. commercial shipbuilding: New opportunities must be found

With traditional merchant ship orders at a new low, shipyards must continue to depend on Navy work while exploring options in specialized sectors.

53 World shipbuilding: Even the East feels the heat

Though Asian yards still dominate a slender world orderbook, some big names are seeking help.

67 World orderbook

Lloyd's Shipping Information Services' listing of ships of 1,000 gt and above building as of May 1, 1987, shows 1,048 ships of 20,309,073 gross tons.

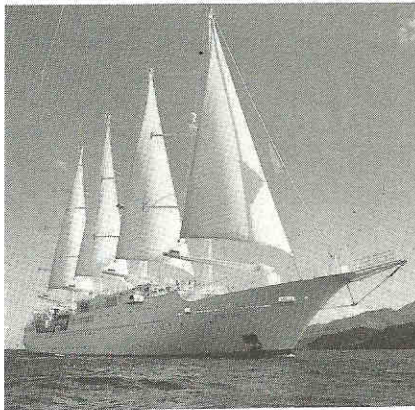
91 U.S.-flag oceangoing fleet of 2,000 gt and over

98 Foreign-flag U.S.- controlled fleet of 1,000 gt and over

46TH Annual YEARBOOK & Maritime Review



Cunard's Queen Elizabeth 2 emerging from the most spectacular cruise ship renovation and conversion ever undertaken (p.19).



Front cover: Eastman Kodak photo by Gary Whelpley captures the majestic Wind Star sailing off St. Lucis. For more on shipping, see p.25.

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104 Cruise fleets that sail from U.S. ports

106 Technology widens passenger boat choices

Passenger vessel operations during the past year have been marked not so much by an increase in the number of operations as by an increase in the number of choices in hardware available, and public transportation authorities and private operators continue to place their bets on what it will take to lure passengers to the water.

109 Steady oil prices mean new challenges offshore

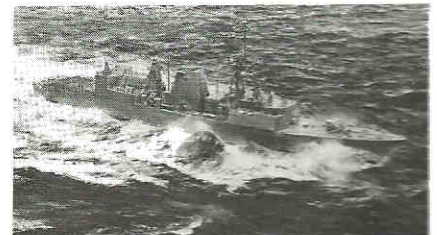
The offshore mobile rig market has hit rock bottom and would appear to have only one way to go, but oil companies will be looking for projects that are economic at today's prices with such innovations as the Tension Leg Platform and subsea completions.

113 Propulsion trends: Diesels dominate commercial market

Seventy five years after the introduction of the world's first oceangoing motor ship, the war with steam has been won.

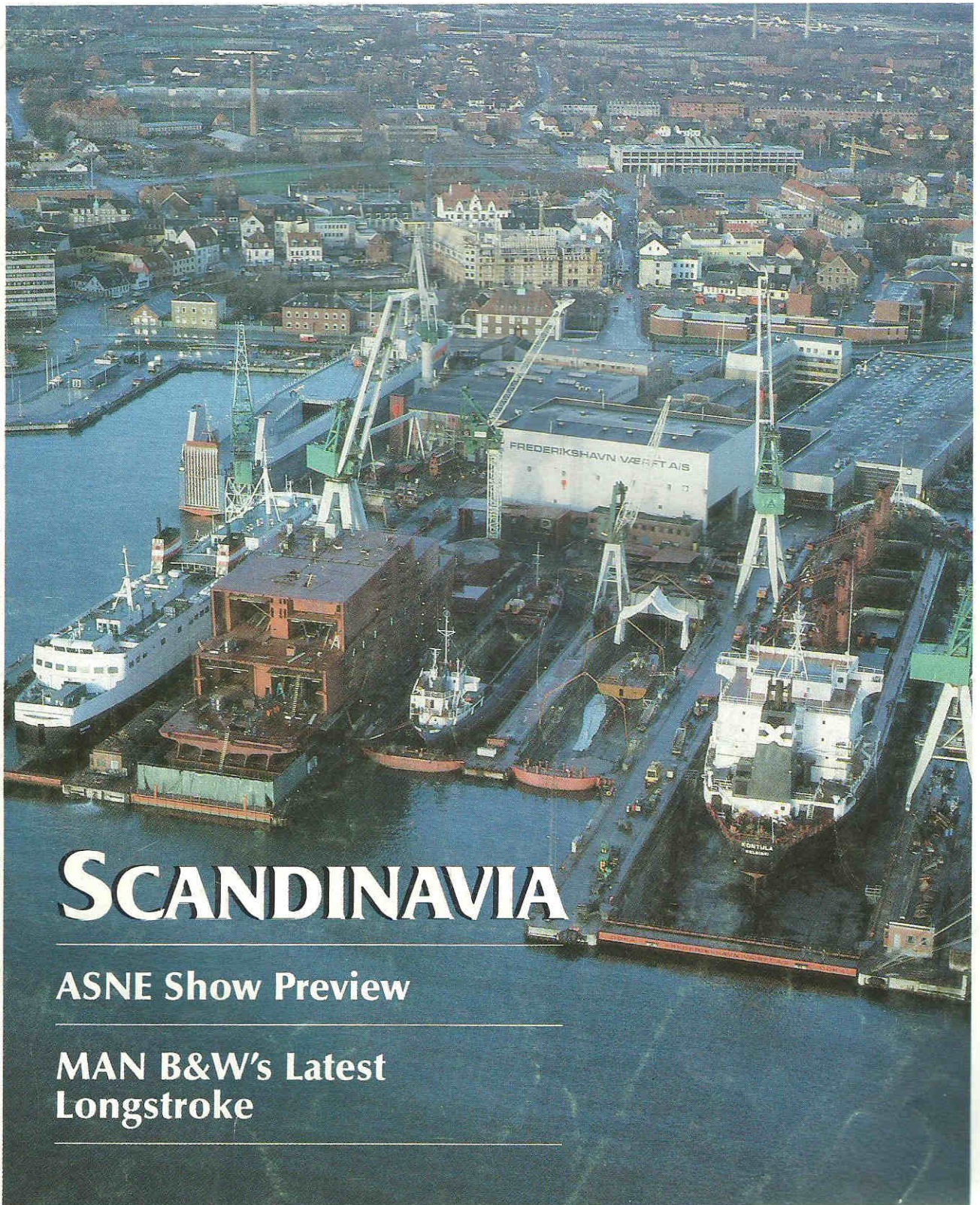
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MARINE ENGINEERING LOG

MAY 1987



SCANDINAVIA

ASNE Show Preview

MAN B&W's Latest
Longstroke

Inside: MILITARY SHIPBUILDING

MARINE ENGINEERING/LOG

May 1987

The magazine of marine management and technology

Vol. 92, No. 5

FEATURES

21 SCANDINAVIA: Testing time for Finns

Traditionally kept healthy by orders from the Soviet Union, the Finnish shipbuilding industry has been forced to come up with creative solutions to the current ills. Among the cures: a major merger between state-controlled Valmet and privately owned Wärtsilä.

23 SCANDINAVIA: Danish yards breathe anew

Danish shipyards are breathing a collective sigh or relief since their federal government recently decided to do its part to uphold Denmark's leading position in terms of both ships and tonnage by saving a tax break for domestic owners that was in jeopardy.

25 SCANDINAVIA: Sweden, what's left?

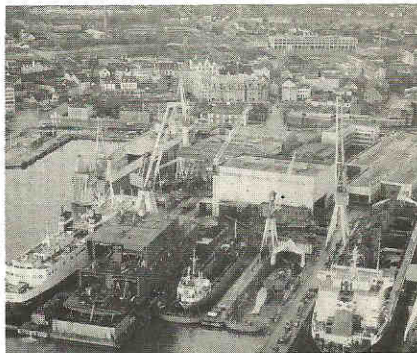
Submarines, ship repair and offshore work will soon be all that remains of shipbuilding in Sweden, a country that a decade ago was second only to Japan in merchant ship output.

31 SCANDINAVIA: Norwegian yards hit by slump

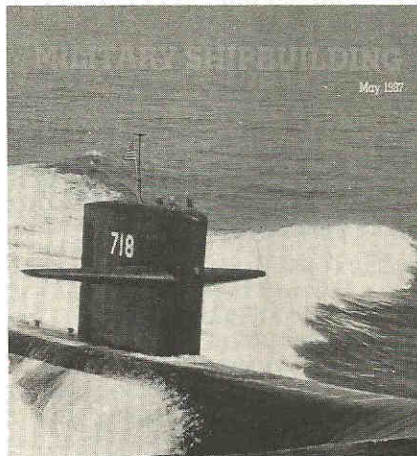
Norway's shipbuilders, like their Swedish counterparts, have dived from worldwide prominence to near obscurity and are now confined to construction facilities able to build only vessels under 20,000 dwt.

28 It can pay to give parts a lab check

Three cases from the files of one consultancy, MEI-Charlton, Inc., reveal what can go wrong with ship's parts. Being aware of these problems is the first step towards avoiding them. The author, Ron Lansing, recommends regular maintenance inspection of highly stressed parts and welds.



Front cover, courtesy Danyard A/S group of companies, shows activity at Frederikshavn Værft. Coverage of Denmark is included in Scandinavia feature which starts on pg. 21.



Sea trials of SSN 718 Honolulu off Newport News, Va., shown on cover of Military Shipbuilding supplement (p. 33).

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33 MILITARY SHIPBUILDING

Military Shipbuilding Notes (p.35); Preview of ASNE Day (p.37); The technology transfer Navy (p.46); Roll damping for naval vessels (p. 51); At Todd Seattle, CAD is everywhere: In a precedent-setting operation, Todd Seattle is getting more out of CAD by making it available to craftsmen (p. 53); Blisters n' blushes over Midway (p.55).

57 Yugoslavia now in No. 3 spot

Competitive prices have helped swell orderbooks to the point where Yugoslavian yards lead Europe and are now only surpassed by Japan and Korea.

64 New MAN B&W medium speed

POWER & PROPULSION reviews latest diesel from MAN B&W, the L40/54, which applies lessons learned from the larger L58/64 to the popular 400 mm bore size.

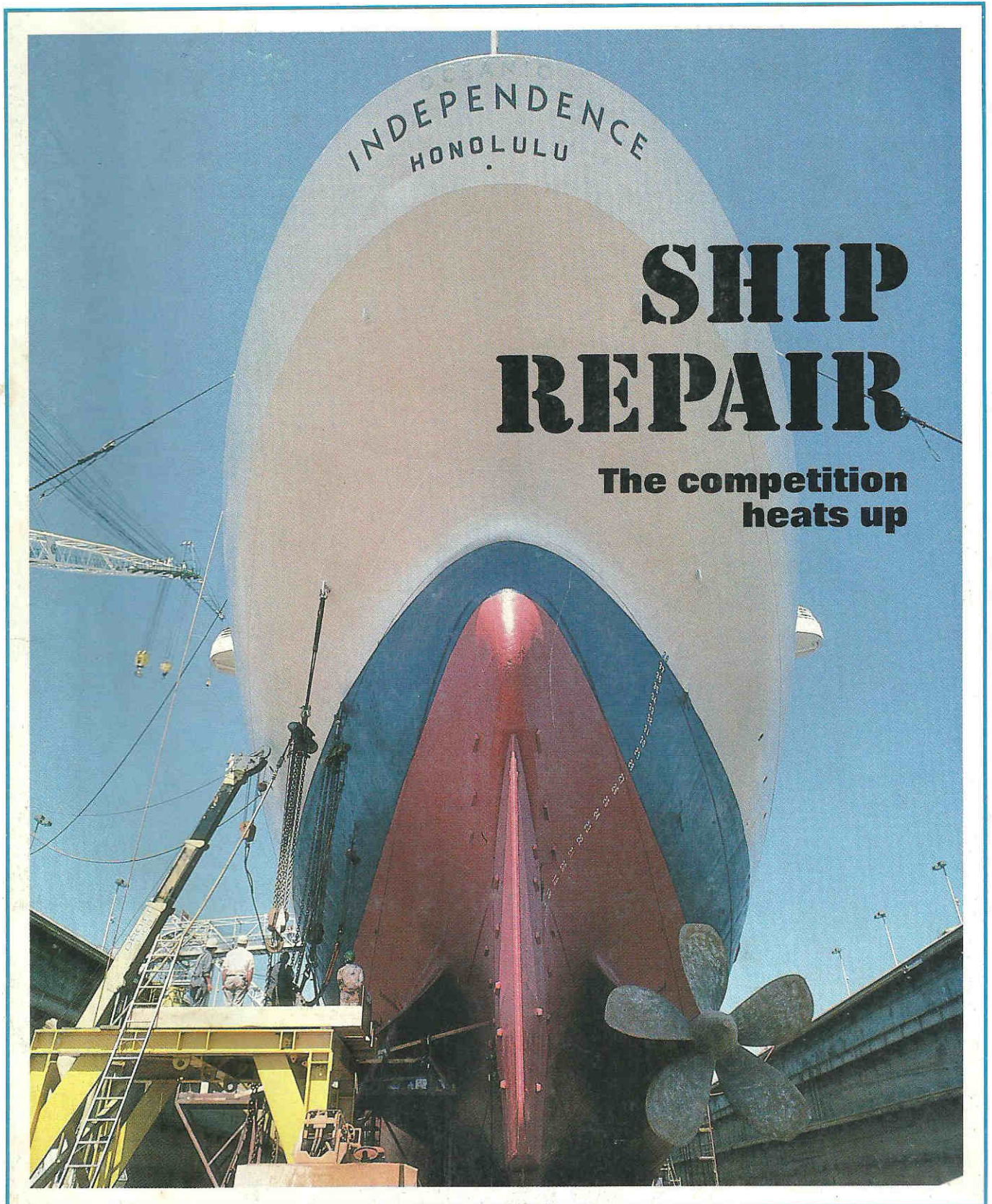
64 Cat overhauls when underway

Ransome Engine Power of Philadelphia, Pa., offers vessel operators onboard diesel service.

NEXT MONTH

- 46th Annual Yearbook Issue Reviews, forecasts and statistical analyses of U.S. and worldwide shipping and commercial and military shipbuilding featuring world merchant ship orders, U.S. merchant fleet listings, power and propulsion trends, offshore outlook and passenger vessel operations.

MARINE APRIL 1987 **ENGINEERING/LOG**



Inside: OFFSHORE OUTLOOK

FEATURES

15 U.S. ship repair:

Navy workload leveling

...but private yards can still expect to take more business from Navy yards. Though offshore sector work has fallen sharply, some yards have been doing well with cruise ships and the cheaper dollar could give commercial work a further fillip.

26 World ship repair:

Tanker uptick boosts fortunes

Last year's surge in tanker activity gave many yards a reminder of the good old days. The competition is still fierce though despite changes in exchange rates that are helping many yards to snatch business from Japan.

33 How to survive a disaster at sea

The loss of the *Herald of Free Enterprise* and other ships in recent weeks underlines the fact that disaster can strike at any time. Could you survive? We give some guidance based on the lessons taught at the intensive one-day personal survival courses presented by Emergency and Survival Programs, Inc.

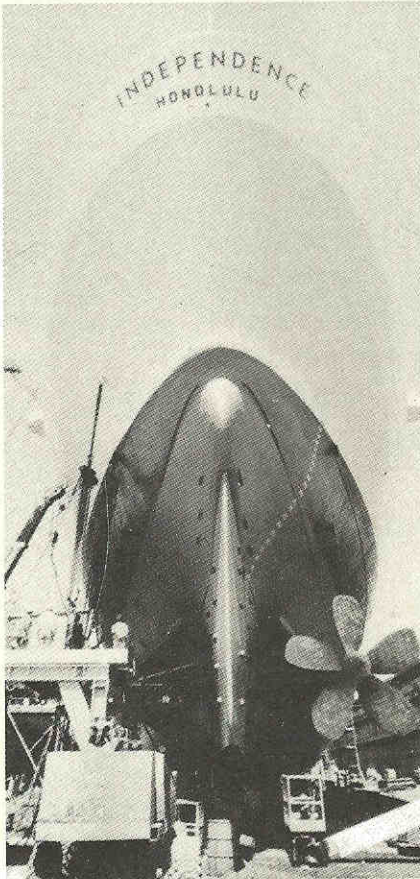
34 Shipboard firefighting do's and don'ts

John Donovan, manager of firefighting training at Texas A&M University, explains the basics of what to do—and what not to do—if you're trapped in a shipboard fire. The first lesson: don't panic.

47 Offshore outlook:

oil patch needs that \$18 barrel

If OPEC can keep oil prices in the high teens, there's a chance that U.S. Gulf activity will pick up. Meantime, things remain very tough... though some major projects are still underway, including construction of the giant Bullwinkle platform and plans to deploy the first Gulf TLP (tension leg platform).



Front cover: Part of Portland photo by Jim Douglas shows American Hawaii Cruises' cruiseliner *Independence* receiving attention in Portland Ship Repair Yard's Drydock 4. Cruise ships have provided U.S. repair yards with significant business in recent years (p.15).

53 Southeast maritime

industry keeps competitive

Ports and shipyards from Hampton Roads to Florida are alive and at least fairly well. Though bulk trades have been depressed, general cargo and passenger traffic are helping ports, many of which have major developments planned. For the region's shipyards, especially those in the Hampton Roads area, the Navy remains the prime customer.

61 Power & Propulsion

MAN B&W Høleby ducts excess scavenge air from a ship's main engine to feed the turbocharger of the auxiliary engine. This boost to its breathing permits the auxiliary to operate continuously on heavy fuel (p.61). Cummins is extending its horsepower range 8.874 bhp by offering two Niigata medium speed diesels in the Americas. They'll be sold under the Cummins name and offered in complete packages of engine, gearbox and propeller (p.61). Castrol introduces two new lubricants, a 5 TBN alkaline detergent oil of SAE30 for today's slow speed diesels and a 12 TBN lube for medium speed engines. A third new lube, a synthetic for use in extreme temperatures, is also on the way (p.63).

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NEXT MONTH

- Military Shipbuilding
- ASNE show preview
- Focus on Yugoslavia
- Scandinavian maritime industries



MARINE ENGINEERING/LOG

MARCH 1987



FULL SPEED AHEAD FOR FERRIES

Inside: MILITARY SHIPBUILDING

MARINE ENGINEERING/LOG

March 1987

The magazine of marine management and technology

Vol. 92, No. 3

FEATURES

21 Ferries: Full speed ahead

The market for ferries is wide open, fast and furious. It seems certain that commuter craft are here to stay. The only questions that remain now are, "Which boats and which operators will capture commuters' fancy?"

18 Coatings: Keeping hulls smooth and application easy

Today's marine paints have to do it all: go over anything, prevent corrosion and growth, keep the hull smooth, extend time intervals between drydockings—and, if that's not tough enough—they also have to appease environmentalists.

32 Converting RO/RO to train ferry

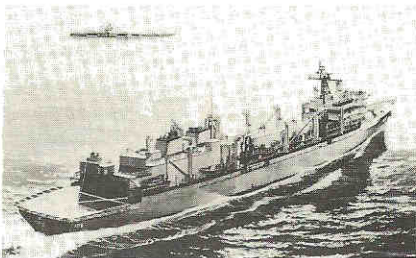
Crucial to Danish State Railway's conversion of a RO/RO to a train ferry was an anti-heeling system.

33 MILITARY SHIPBUILDING

RACER or ICR? The Navy is moving toward "longer legged" ships by exploring programs on high efficiency gas turbines and electric drive (p.35); Military Shipbuilding Notes: Lockheed opens new division in Thunderbolt, Ga., GE licenses India to build LM2500s, GD reopens Charleston plant, Italian Lerici-class fiberglass-hulled minesweepers to be built in Georgia, Newport News gets \$1.03 billion submarine order, Lehman departure signals new build-up phase, Derbyshire Machine & Tool Co. hopes to revolutionize the way the Navy seals and connect piping (p.42); Advances in materials technology such as high frequency resistance forge welded T-beams used as structural members and precision weight plate direct from the manufacturer offer cost and weight savings in Navy ship construction (p.45); National Steel and Shipbuilding Co. wins \$290 million contract for gas turbine powered combat support ship (p.49).



Front cover: Marinteknik Marinjet 34C running in Denmark. This and other foreign designs will soon be competing in the U.S. (p.21)



Artist's conception of U.S. Navy's fast combat support ship, the AOE, to be built at NASSCO (p.49)



Painting robot, result of Japanese shipbuilding research (p.64)

55 Check lists for better bunkering

Controlling the quality of bunkers can be a slippery process. The first of two POWER & PROPULSION features reviews two new publications on the topic that give valuable tips on how to protect yourself and your engine.

55 Analyzing fuel analysis results

Testing fuel onboard has become routine for many careful ship operators. Our second POWER & PROPULSION feature assesses a leading onboard fuel test kit.

62 Wärtsilä 12V22s after 12,000 hours

It's now more than two years since a tugboat designed for heavy fuel operation entered service with Mobil. The engine has given savings in terms of reduced fuel, lube oil and spare parts consumption.

64 Japan's robot shipbuilders

Masaka Kubo, executive managing director of Sumitomo Heavy Industries, reports progress with a project on welding, surface preparation and painting robots.

DEPARTMENTS

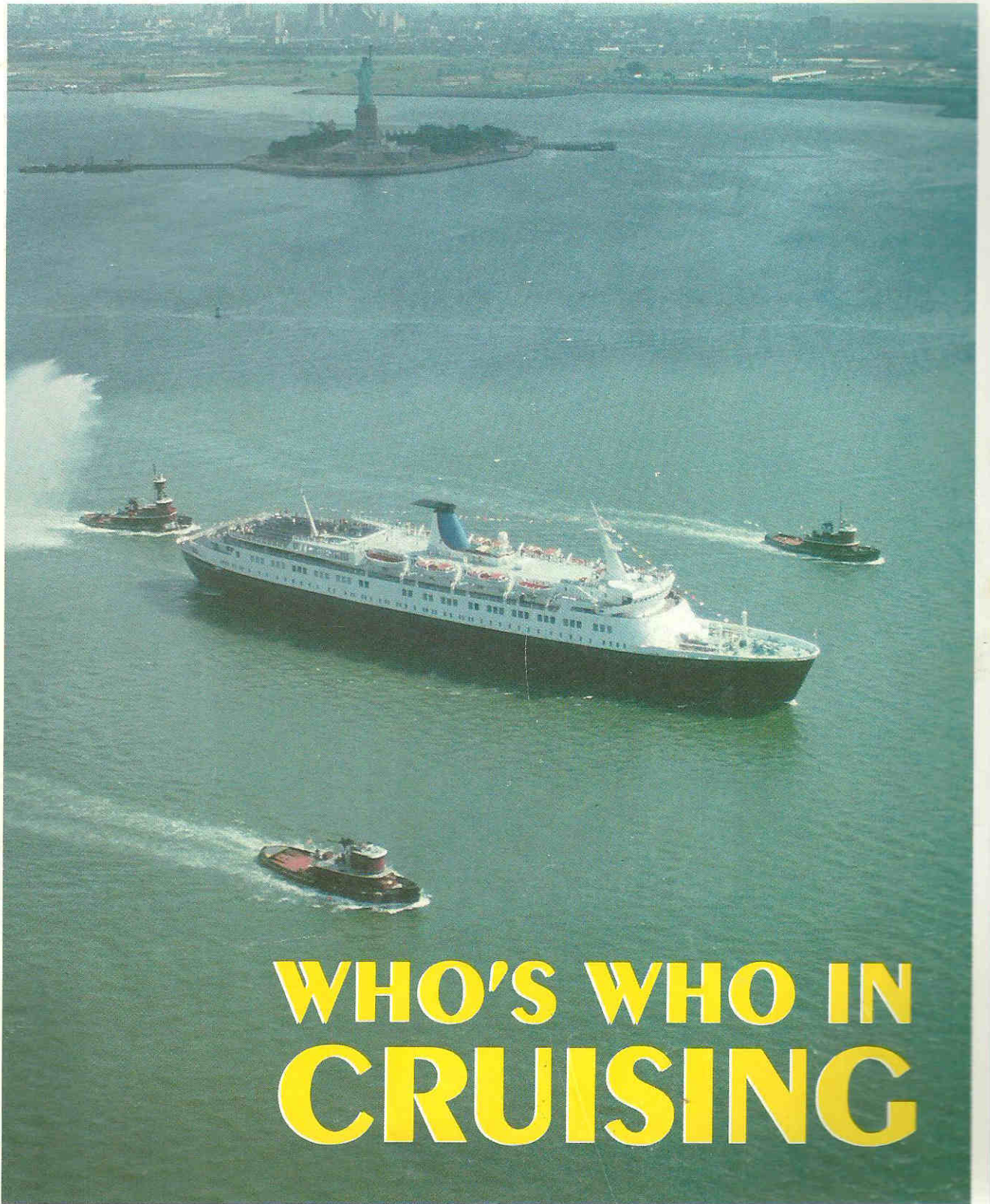
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NEXT MONTH

- U.S. & world ship repair
- Tugs and towboats
- Offshore outlook



MARINE FEBRUARY 1987 **ENGINEERING/LOG**



**WHO'S WHO IN
CRUISING**

Inside: CANADA

MARINE ENGINEERING/LOG

February 1987

The magazine of marine management and technology

Vol. 92, No.2

FEATURES

21 Who's who in cruising

A company-by-company guide to U.S.-based cruise operators, showing which ships of what size serve what ports.

21 ECS reports on cruise business

Shipping credit analysis consultancy ECS is more cautious than some on the prospects for continued cruise industry growth.

27 Ports: What it takes to win cruise liners

A survey of America's top twelve cruise ports shows that to woo the operators, ports must wow the passengers with continuing investment in terminals and facilities.

30 Satcom services for cruise customers

Comsat has developed a wide range of services that enable the cruise passenger to get away from it all without losing such shoreside conveniences as check cashing, daily newspapers ...and even full service stock brokerage.

31 Canadian yards wait for thaw

Though the long term outlook for Canadian yards is still boosted by offshore hopes, short term the going is tough.

35 Cargo handling and deck machinery

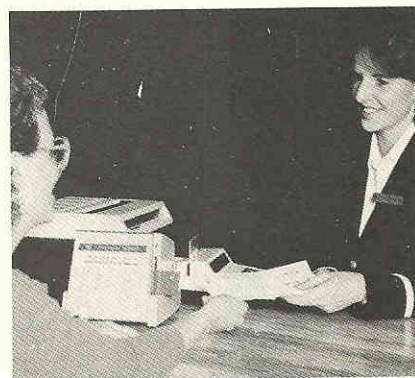
Drastic changes in the shipping industry have forced equally big changes in cargo handling equipment—both on shore and aboard ship—with the emphasis being on ever increasing productivity.

43 GVA 5000

The first semi-sub purpose-built as a floating production system has entered service in the North Sea.



Front cover photo by Frank Duffy, *Moran*, shows cruiseliner entering New York harbor (p.21)



These days, services to cruise customers include cash by satcom (p.30)

44 Diesel design and fuel research

Lloyd's Register is developing a system that will predict how different diesels will perform on particular fuels of variable quality.

44 Containership gains fuel savings

Transvaal has made considerable fuel savings since a power plant conversion that involved derating the main diesels and installing new turbochargers.

45 Challenge from Japan in low speed sector

Mitsubishi's new 750 mm bore long stroke diesel has an output of 4,000 bhp/cyl.

46 Fresh water from exhaust waste heat

How Atlas Denmark is helping cruise ship operators meet passengers' needs for abundant fresh water.

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- U.K. Maritime Industries
- Paints and Coatings
- Fuels and Lubricants
- Focus on Ferries and Passenger Boats



MTU photo

MARINE ENGINEERING/LOG

JANUARY 1987

DISTINCTIVE BOATS



Inside: MILITARY SHIPBUILDING

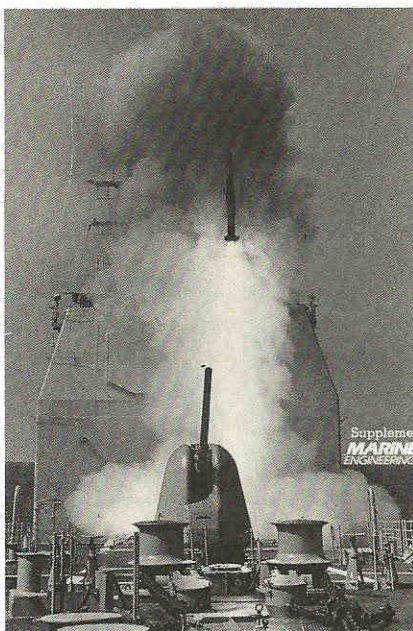
FEATURES

18 Distinctive Boats

This year's portfolio of distinctive boats starts with a full length description of the largest and most innovative support vessel yet to join the U.S.-flag offshore fleet, the Damon Chouest (p.18). Other vessels featured this year are the double-ended Staten Island ferry Alice Austen (p.25); the multi-role North Sea support vessel British Argyll (p.23); the Schottel propelled tractor tug Brooks K. McAllister (p.62); the towboat Captain Matthew (p.25); the fastest yet Nichols Brothers catamaran, M/V Dolphin (p.22); the wooden hulled excursion/dinner boat Dutch Apple II (p.20); the multipurpose port tug Gaucho (p.23); the 90 ft fiberglass hulled excursion boat Glacier Seas (p.62); the first example in a new class of Norwegian offshore boats, the Gullbas (p.28); the Finnish inter-island ferry Harun (p.25); the clean-up catamaran Mop-up (p.25); the pilot boat New Jersey (p.22); the high speed, high-tech ferry Port Imperial (p.23); the "paddle steamer" River Queen (p.22); the dual role North Sea vessel Seaway Pelican (p.26); and the first vessel to be constructed with an unusual new form of hull, the Tärnsjär (p.20).



Front cover: Offshore support vessel Damon Chouest (p.18)



Test firing a missile from Vertical Launch System (VLS) of Ingalls-built Bunker Hill (p.29)

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- 76 Marine Professional Card Directory

53 Special preview: The 1987 Workboat Show

From January 15-17 New Orleans, La., once again hosts the annual Workboat Show. We preview some of the more interesting items that will be on display in the Superdome.



Furuno U.S.A.'s FUR-1404 FCR-900 series radar, one of the products that will be on exhibit at the Workboat Show.

58 Bright spots on the Delta scene

Though the Gulf Coast offshore industry economy remains depressed along with oil prices, the gloom is not total. New Orleans region shipyards are finding more government contracts.

61 Feeding Cats on heavy fuel

This month's POWER & PROPULSION feature looks at hints for successful operation of Caterpillar diesels on heavier grades and blends of fuel.

NEXT MONTH

- Cruise Shipping Developments
- Cruise Ports
- CSSRA Show Preview
- Canadian Shipyards



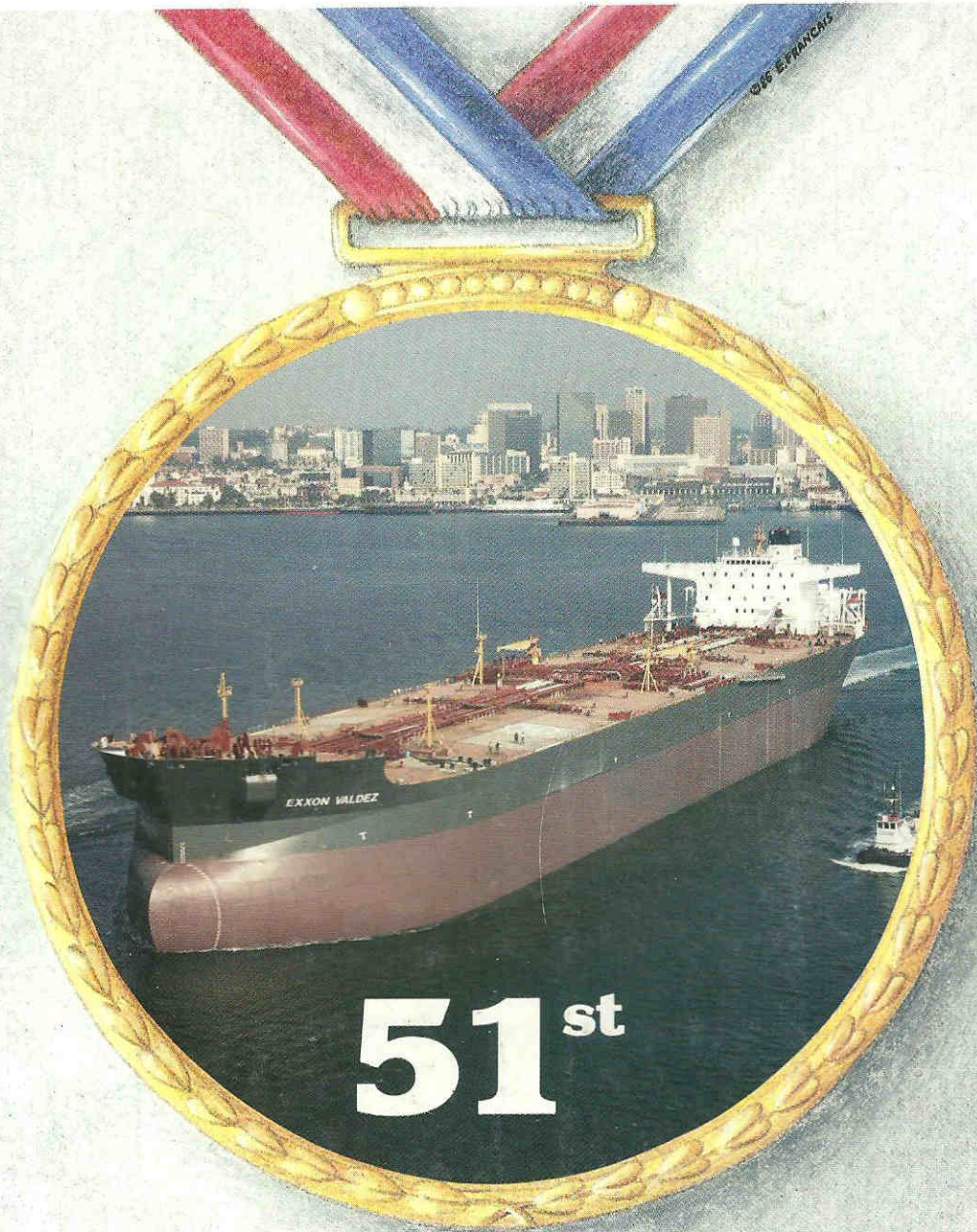
29 Special Supplement:

MILITARY SHIPBUILDING

Military Shipbuilding Notes (p.31); Todd CEO eyes exports and diversification—an interview with Hans K. Schaefer on how America's largest independent shipbuilding group is facing the future (p.35); Ingalls puts the emphasis on further shipyard computerization—including a 3-D CAE/CAD system from GE Calma (p. 47); Smaller military vessels—what's being built (p.50).

MARINE ENGINEERING/LOG

DECEMBER 1986



51st

DISTINCTIVE OCEANGOING SHIPS AWARDS

Inside: PASSENGER VESSELS

MARINE ENGINEERING/LOG

December 1986

The magazine of marine management and technology

Vol 91, No.12

FEATURES

21 51st Annual Portfolio of Distinctive Ships

Exxon Valdez—Supertanker from NASSCO (p.21); *Birka Princess*—Baltic cruise ferry (p.22); *Richard G. Matthiesen*—Products tanker from Tampa (p.22); *Tagawa Maru*—New generation VLCC (p.23); *Petrojarl 1*—Versatile offshore PTS (p.25); *Scol Venture*—Sideloaded paper carrier (p.25); *Homeric*—cruise ship from Germany (p.26); *Jubilee*—cruise ship from Sweden (p.26); *Dana Cimbria*—Bacon runner from Denmark (p.27); *Sarita*—North Sea shuttle from Daewoo (p.27); *Kalla*—Drop n'swop in the Baltic (p.28); *Alster Rapid*—Versatile cargo ship from Sietas (p.28); *Norita*—Economic tanker from Burmeister & Wain Shipyard (p.30); *Iron Pacific*—VLBC with unusual stern (p.30); *Berge Stahl*—World's largest ore carrier (p.31); *Otso*—New generation icebreaker (p.31); *Peter Pan*—Distinctive ferry (p.33); *Marrakech*—Ferry with Moroccan flavor (p.33).

35 Special Supplement: CAD/CAM/CAE in the shipyard

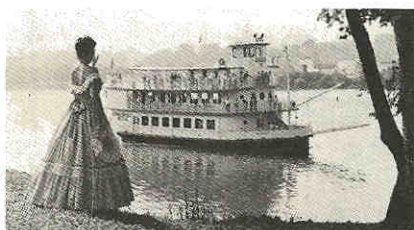
A look at how shipbuilders and the Navy are moving towards further advances in computer aided design, manufacture and engineering.

47 Entrepreneurs on a boat trip

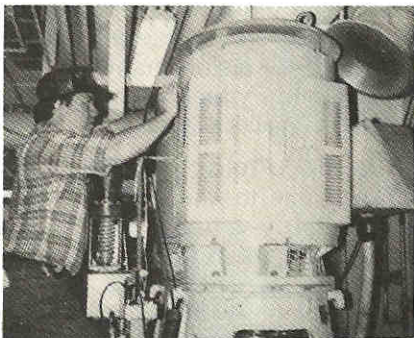
Day boats and dinner boats are enjoying a boom as enterprising entrepreneurs take advantage of growing markets for dining afloat and seeing America from the water.



Cover photo shows VLCC Exxon Valdez recently delivered by NASSCO (p.21)



Excursion boat entrepreneurs offer everything from ultrasleek motor yachts to evocations of the Mark Twain era (p.47)



Mounting vibration pick-up as part of a computerized predictive maintenance plan (p.57)

57 Spares and repairs

Computerized systems are enabling shipowners to put into practice the "if it ain't broke, don't fix it" philosophy and to keep spare parts inventories at cost-effective but adequate levels.

61 Diesel manufacturers set own fuel standards

CIMAC standards for marine fuels align with draft International Standards but are a little tougher as manufacturers see a need to protect older existing engines and ships.

63 Waste-to-watts afloat

Blount, Inc., Montgomery, Ala., and Norway's Moss Rosenberg Verft have developed a floating waste-to-energy plant based on a barge that is less costly and faster to build than a land-based plant.

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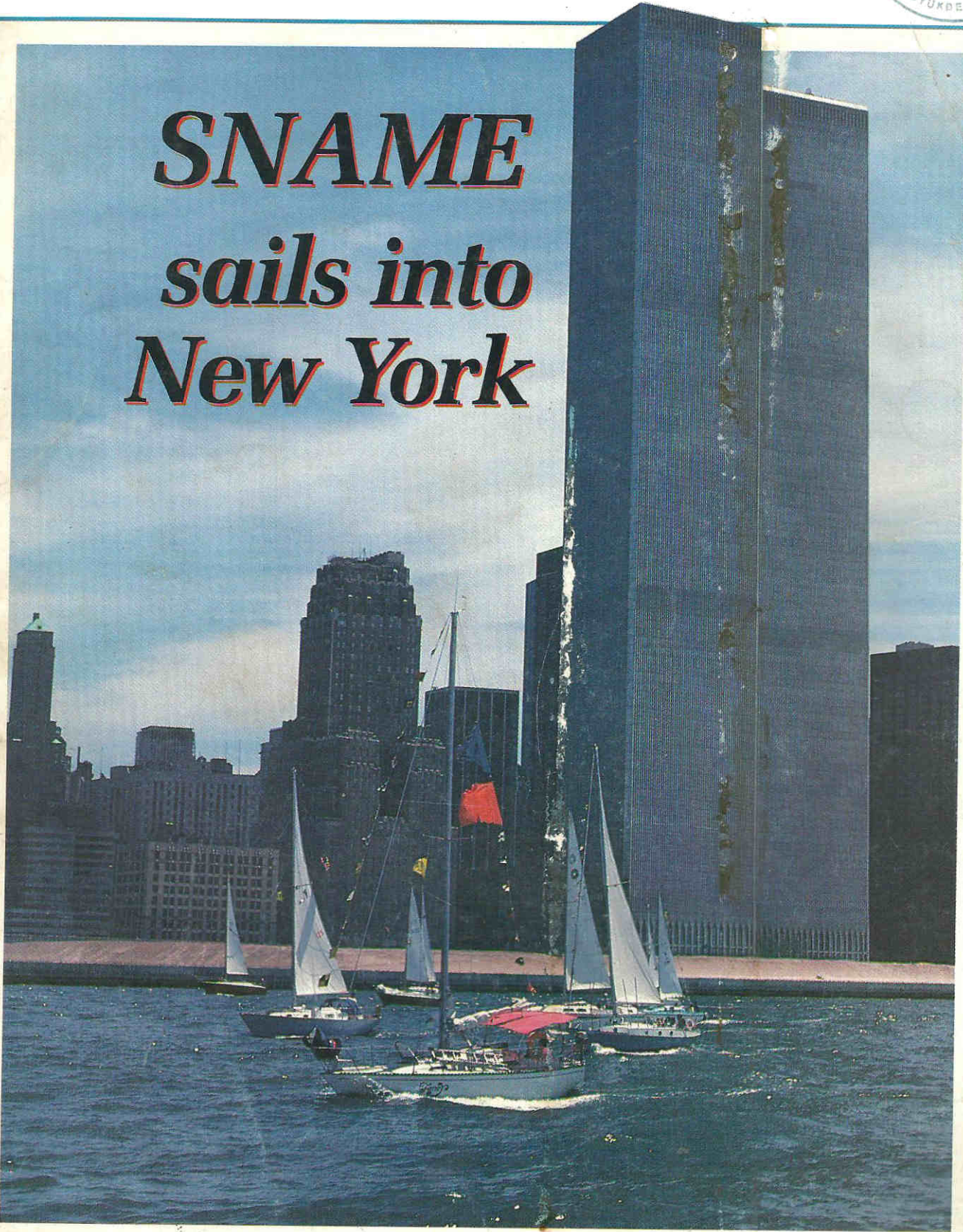
- Workboat show preview
- Military Shipbuilding
- Distinctive Boats

MARINE ENGINEERING LOG

NOVEMBER 1986



SNAME sails into New York



Inside: FOCUS ON NAVIGATION

MARINE/ENGINEERING/LOG

November 1986

The magazine of marine management and technology

Vol. 91, No.11

FEATURES

21 SNAME sails into New York

The Big Apple once again hosts SNAME's annual meeting—this is the 93rd—and the accompanying International Maritime Expo.

42 Dr. Leopold's prescription

A mix of engineering and entrepreneurship is one man's way to beat the ship design dry patch.

44 Large Quebec ports hurt by labor costs

Events leading up to the Maritime Employers Association of Canada's decision to lock out longshoremen from the Port of Quebec.

46 Catamaran cruise ship with sails appeal

German yard unveils a passenger vessel design aimed at the top end of the market.

49 U.S. insurers seek tougher rules

AIMU says shipowners should know how much roll a vessel will take . . . and should build to one-compartment standard.

52 Northern Ranger

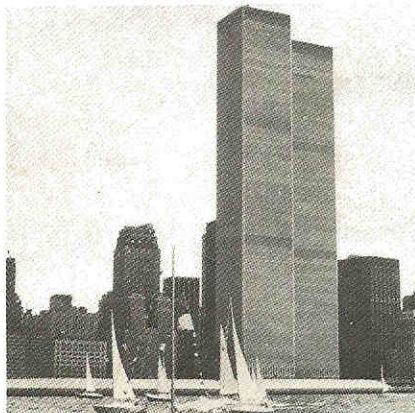
2,340 gt passenger vessel for Newfoundland coastal service.

55 Navigation: CDs and touch screens come on board

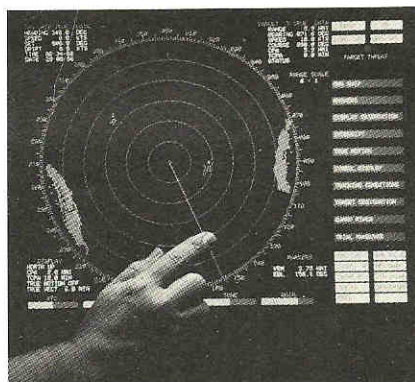
ELECTRONICS LOG looks at the newest technology that is making it onto the bridge.

63 84 ways to burn fuel more efficiently

POWER & PROPULSION lists more ways to eke out the bunker budget.



Frank Duffy photograph sets the scene for another memorable maritime event in New York, this month's annual SNAME meeting (p.21).



New raster display ARPA has the right touch (p.55)

72 Automating Sarita

North Sea shuttle tanker features the latest from Norcontrol.

77 Combating terrorism

Experts expound on how to counter a growing threat to shipping.

84 Sliding to safety

Two Danish rail ferries have an advanced passenger evacuation system.

87 Pacific Maritime Expo

MARINE EQUIPMENT NEWS™ previews a new West Coast show.

90 Updating voltage regulators

The advantages of going solid state.

99 Lighthouse automation on course

When the last keeper left Chesapeake Bay, it marked 95% completion of an ambitious Coast Guard program.

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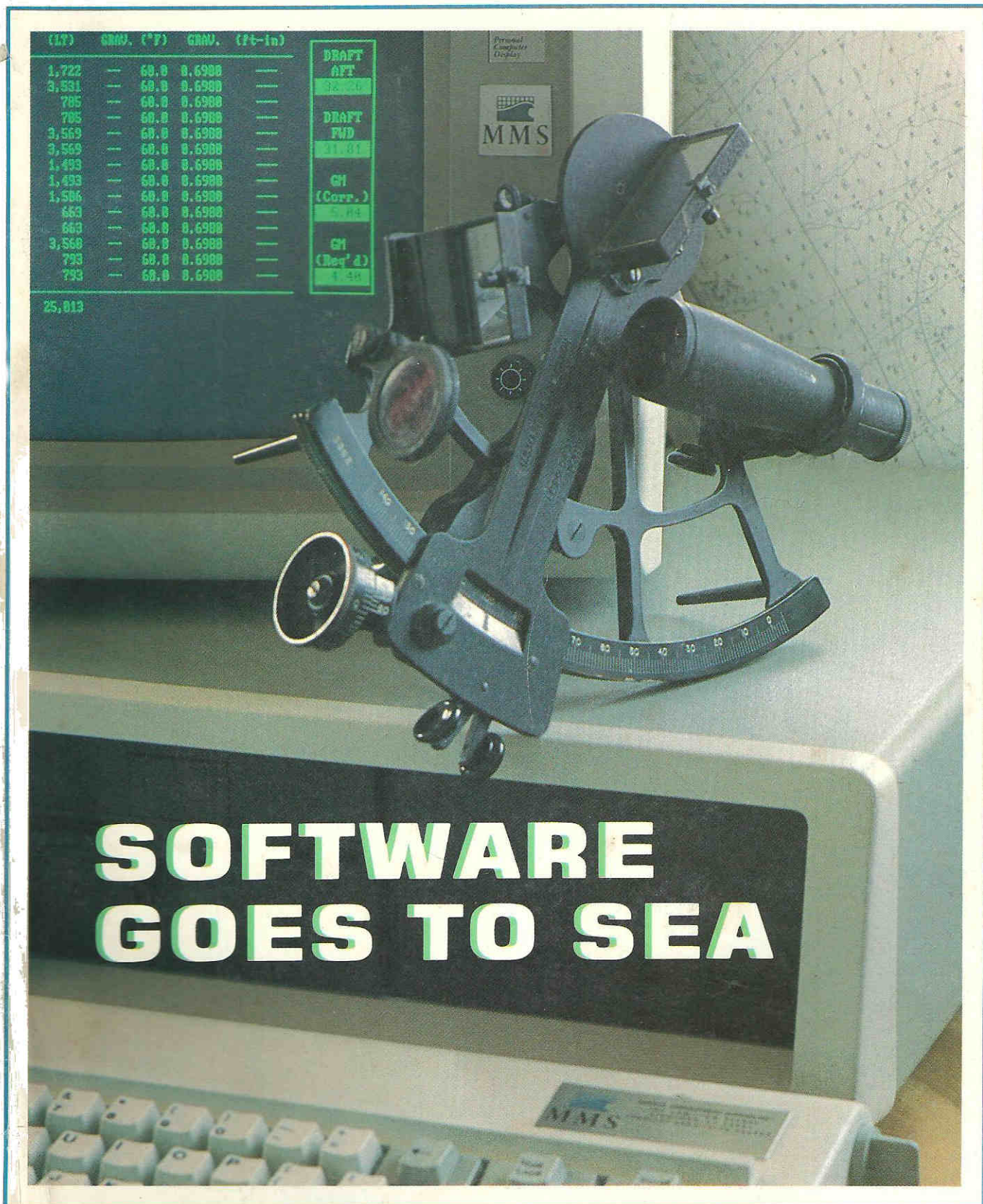
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- 51st Annual Portfolio of Distinctive Ships
- CAD/CAM/CAE in the shipyard
- Machinery repairs and spares
- Passenger boat business blossoms



MARINE ENGINEERING LOG

OCTOBER 1986



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705	60.0	0.6900
705	60.0	0.6900
3,569	60.0	0.6900
3,569	60.0	0.6900
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1,493	60.0	0.6900
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663	60.0	0.6900
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793	60.0	0.6900
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DRAFT
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1.30

25,813

SOFTWARE GOES TO SEA

Inside: MILITARY SHIPBUILDING

MARINE/ENGINEERING/LOG

October 1986

The magazine of marine management and technology

Vol. 91, No. 10

FEATURES

- 24 Software to make shipboard hardware sing**
PCs are making ships run more efficiently—but operators have different approaches on how to make the best software choices. While a number of specialist firms now offer programs, some shipowners still prefer to write their own and others have found that MarAd can offer some real bargains.

- 28 Tilting plant and dual fuel capabilities offshore**
Tougher safety regulations and new demands for operational flexibility are producing changes in machinery spaces offshore.

- 31 P&I clubs set for steady business**
Shipowners' major areas of liability continue to be covered by a type of insurance where traditional caution has proven its worth since the 19th Century.

- 35 MILITARY SHIPBUILDING**
Special pull-out supplement
Bronx yard builds "roads that float" for Navy (p.38); Alliance—First ship built for NATO (p.40); Budget MCMV (p.43); RRF tanker converted to pipe fuel to beachhead (p.51); Storing CAD plotter tapes a better way (p.52); Shipbuilding research program fights budget ax (p.53); Seaguard CIWS: Antidote for Exocet? (p.58); Sub escape system (p.60).

- 63 Permanent ballast eases conversions**
When a ship's center of gravity must be relocated, permanent ballast is the answer, as demonstrated by work carried out in France on U.S. Lines ships.

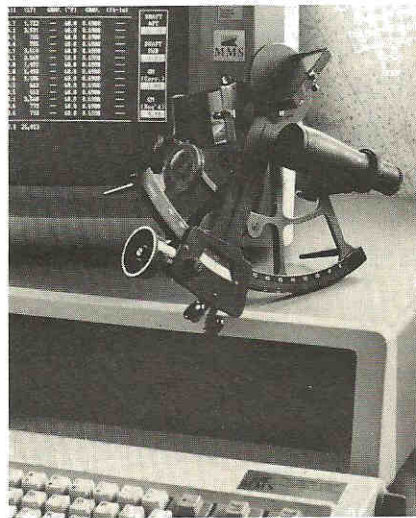


Photo courtesy MMS

Computer software has brought a new dimension to shipping p.24.



Classification societies now require offshore auxiliaries to be able to operate at 35° tilt p.28.

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- 64 Tent helps PCC save fuel**
ART—the Air-resistance Reduction Tent—is helping Mitsui gain energy savings on ships with wind-resistant superstructures.

- 68 Tug/barge system for the 1990s**
British Columbia shows off the results of a three year R&D project.

- 69 Humber Syren high speed pilot boat**
Twin Scania vee eights give a 23.5 knot speed at continuous rating.

- 75 Cost effective lubrication of marine engines**
Power & Propulsion looks at a report by Shell International Petroleum that underlines the influence of fuel quality and engine operating conditions on lubricant performance needs.

- 80 New approach to lube formulation**
Chevron has developed a more efficient way to blend modern marine lubricants at worldwide locations.

NEXT MONTH

TRADE SHOW HIGHLIGHTS:

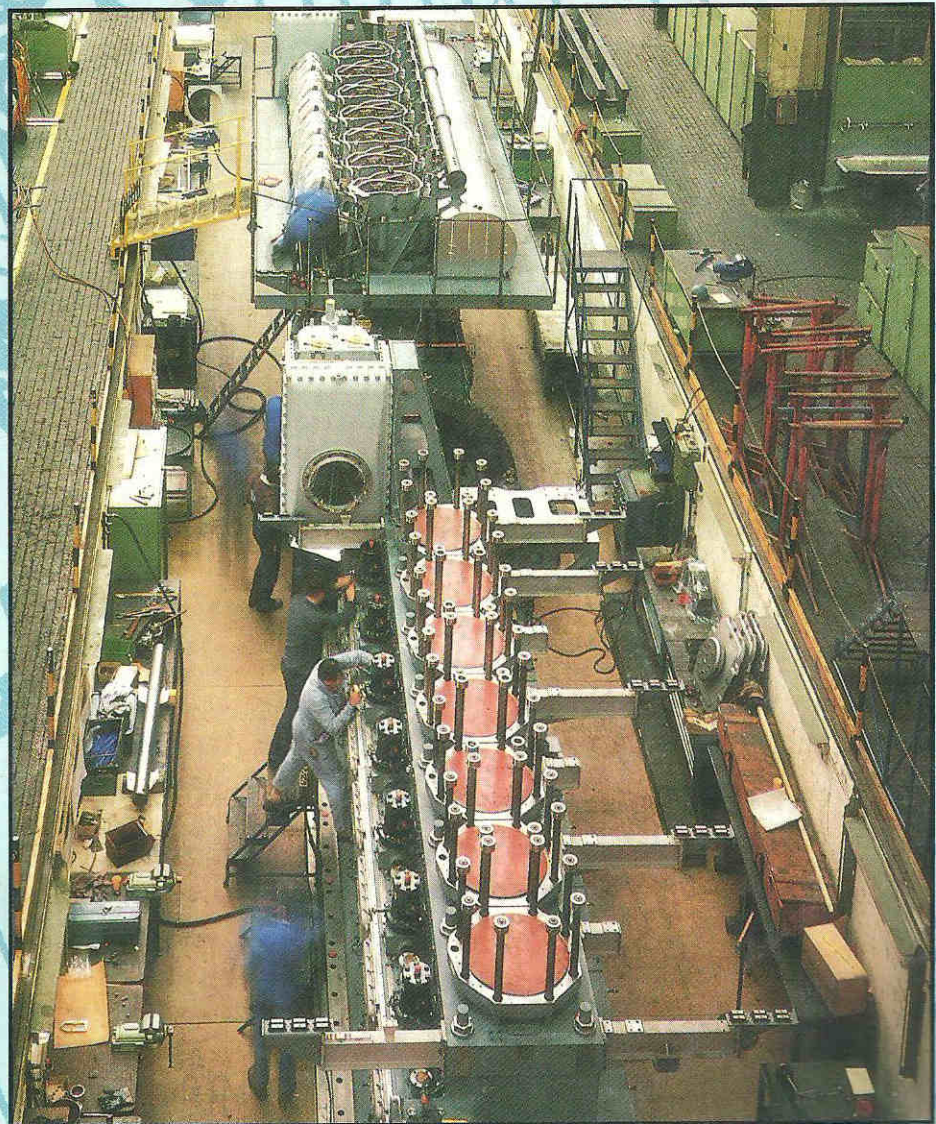
- SNAME
Nov. 19–22,
New York, NY
- Pacific Marine Expo
Nov. 20–22
Seattle, Wash.

PLUS:

- 99 Ways to save fuel
- Navigational equipment



GERMANY: MARITIME WORKSHOP FOR THE WORLD



Inside: FOCUS ON SAFETY

MARINE ENGINEERING/LOG

September 1986

The magazine of marine management and technology

Vol. 91, No. 9

FEATURES

19 Germany: Maritime workshop for the world

The Federal Republic of Germany puts the emphasis on hi-tech, hi-value marine engineering and shipbuilding . . . and on catering for a worldwide market as domestic demand slows.

31 Meeting USCG safety rules

Though "grandfather" clauses will ease the pain of new rules that implement the latest SOLAS treaty requirements, vessel operators must still rethink their safety equipment outfits.

37 Stena Seawell—multi-purpose offshore vessel

A cost-effective monohull to rival semisubs for diving support, sub-sea maintenance, well service, fire-fighting and heavy lift tasks.

42 Small vessels on the crest of a wavelet

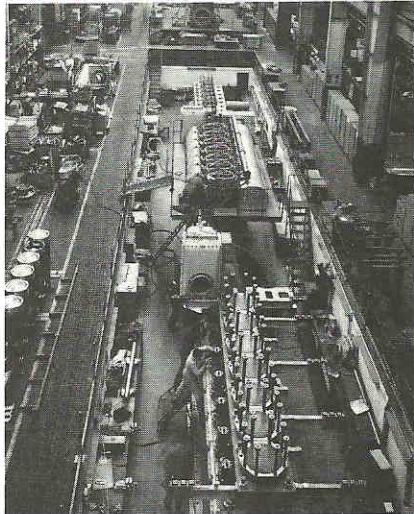
Whatever is happening elsewhere on the shipping/shipbuilding scene, activity is fairly brisk below the 200 ft LOA mark.

49 Low speed crosshead diesel for smaller vessels

MAN-B&W's new S26MC is the world's smallest low speed crosshead engine. Covering the 950–4,000 bhp range, it offers fuel consumptions as low as 123 g/bhp h along with heavy fuel capability.

50 A better way to cope with pintle problems

Today's synthetic materials make it easier to save time and money on rudder repairs.



On the cover: MAN-B&W heavy fuel diesels under assembly in Augsburg, Germany. (p. 19).



Stena Seawell (p. 37).

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53 Planning for oil spill emergencies

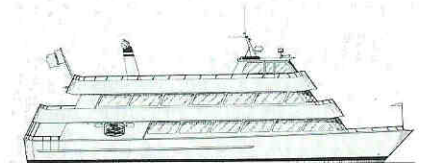
Though the ship's master is not expected to be solely responsible for the clean up of an oil spill, there are things that he should know.

57 SMM preview

This month sees Hamburg, Germany, again host Europe's largest marine show.

72 Going ashore to increase marine business

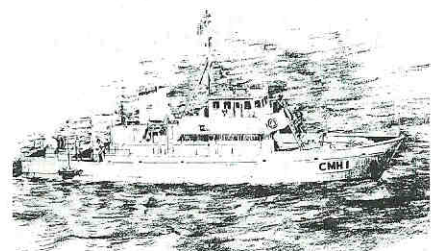
A leading diesel repair specialist finds that diversification shoreward is actually helping boost its ability to serve shipping clients.



There's growing interest in small vessels like this ferry (p. 42).

NEXT MONTH

- Military Shipbuilding
- Marine lubricants
- Power generation offshore

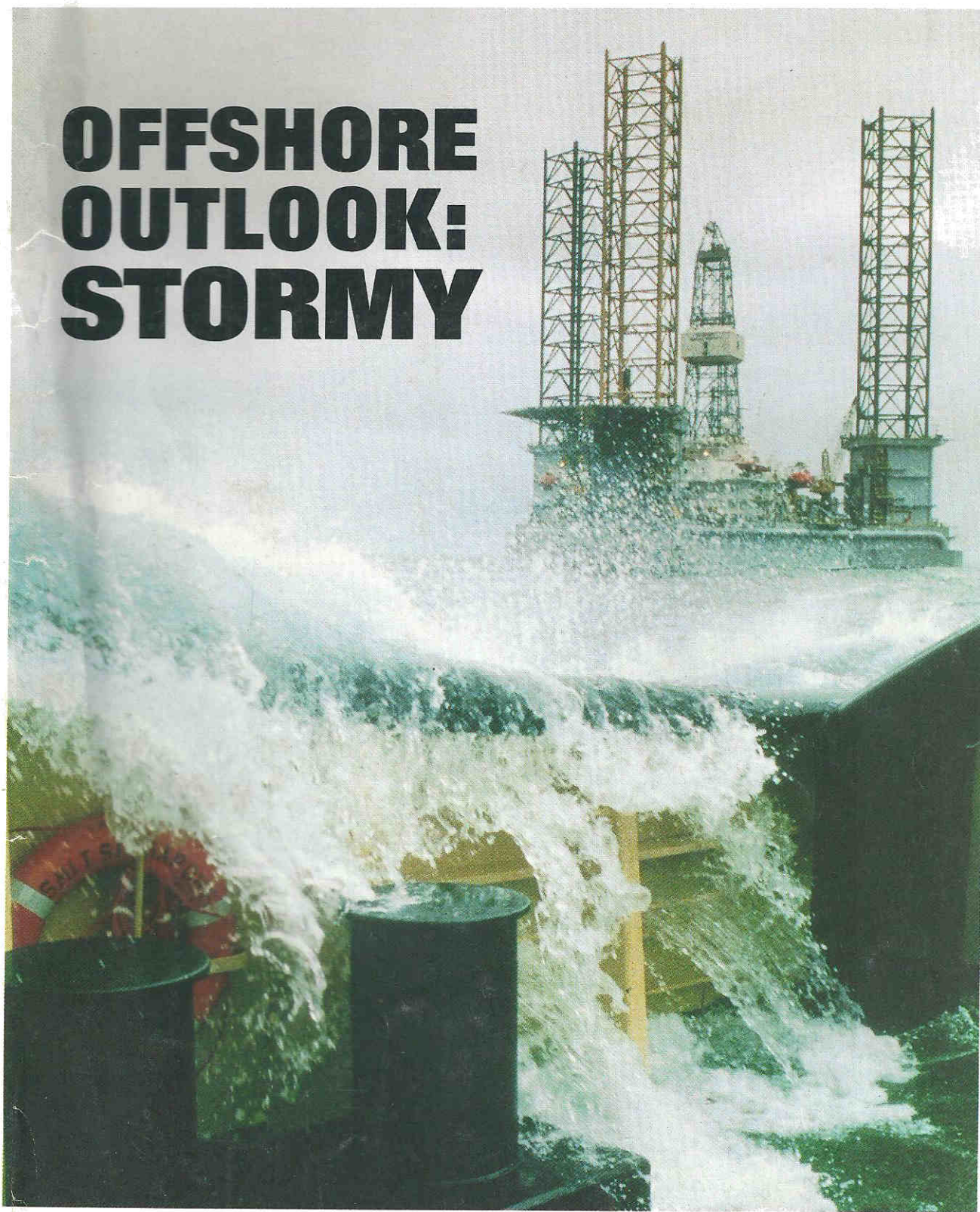


MARINE ENGINEERING LOG

APRIL 1986



OFFSHORE OUTLOOK: STORMY



Inside: **MILITARY SHIPBUILDING**

FEATURES

20 Offshore outlook: Stormy

Flunging crude oil prices are making oil companies think in terms of netback deals with the Saudis rather than costly excursions offshore—and that spells trouble ahead for many oil patch operators.

25 R for maritime burn prevention

Credit checking is one of those businesses that boom when times get hard and debtor shipowners become elusive.

27 Computerized performance monitoring for economy

A computerized monitoring system based on torque thrust meters is gaining applications in both steam and motor ships.

29 MILITARY SHIPBUILDING: QUARTERLY PULL-OUT SUPPLEMENT

Building the Canadian Patrol Frigates (p.33); Preview of exhibits at ASNE Day (p.41); Line heating—efficient way to form curved plates (p.53); Couplings cut oiler building costs (p.56)

61 How Love Boats hush the flushes

A quiet revolution in sanitation has played a major part in easing expansion of the cruise ship fleet.

63 Underwriters tighten the screws

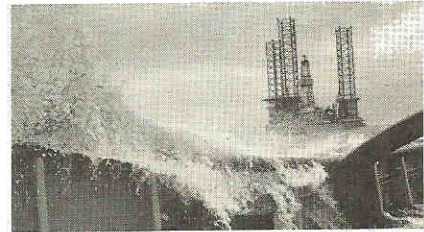
Faced with increasing losses, marine insurers are taking a tougher line with vessel owners.

67 Thomas St. Phillips and Empress

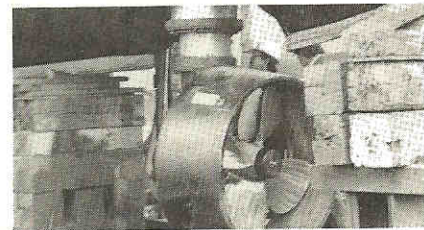
Profiles of a single screw harbor tug retrofitted with an azimuthing thruster in the bow and of a new excursion and dinner boat.

69 Semi-diesel-electric, the new power option

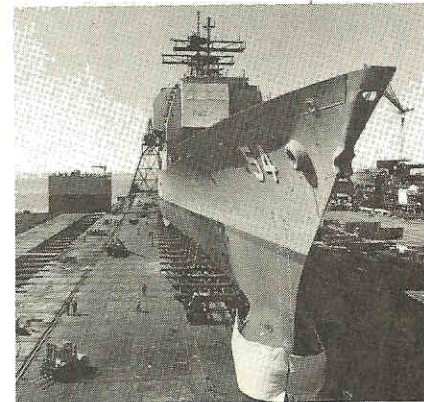
POWER & PROPULSION looks at the attractions of thyristor-based integrated electrical auxiliary propulsion systems for vessels with wide speed ranges.



Challenge of the offshore arena is captured in our front cover shot by Albert Roosenburg showing Smit tug in action (p.20)



Retrofitting an Aquamaster thruster in tug Thomas St. Phillips (p. 67)



MILITARY SHIPBUILDING looks at how the Canadian Patrol Frigates will be built (p.33)

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