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Diamond Princess leaves Nagasaki for L.A.

—Maiden voyage is eight-day cruise to Mexican Riviera—

The Diamond Princess, an 116,000GT cruise ship, left Nagasaki Port on February 27 for Los Angeles, where she entered service on March 13. Her maiden voyage was an eight-day cruise to the Mexican Riviera. The order for two cruise ships was placed with Mitsubishi Heavy Industries, Ltd. (MHI) in February 2000. The Diamond Princess was constructed at Nagasaki Shipyard & Machinery Works, and the Sapphire Princess, now under construction is scheduled for completion this May.

Principal particulars

L (o.a.) x B x D x d: 290.0m x 37.5m x 41.3m x 8.05m
Gross tonnage: abt. 116,000
Service speed: 22.1 knots
Diesel-generators: 9,450kW x 2 units; 8,400kW x 2 units
Gas turbine-generator: 25,000kW x 1 unit
Propulsion motors: 20,000kW x 2 units
Fixed pitch propellers (FPP) x 2 units
Side thrusters: 3 units for bow and stern, respectively
Passenger cabins: 1,339
Passengers: 2,670

The christening ceremony of the Diamond Princess took place in Nagasaki on February 26. The ceremony was attended by Mr. Micky Arison, Chairman and Chief Executive Officer of Carnival Corporation & plc; Mr. Peter G. Ratcliffe, Chief Executive Officer of Princess Cruises; Mr. Kazuo Tsukuda, President of MHI; and Mr. Kazunori Ohta, Managing Director of MHI. Mrs. Tsukuda christened the ship after a performance by the brass band of a local junior high school. After that, a reception with many guests was held on board the ship, with tours of the whole ship.

The Diamond Princess is provided with marvelous public spaces as shown in the photos including five swimming pools, restaurants, cabins, and other necessary amenity

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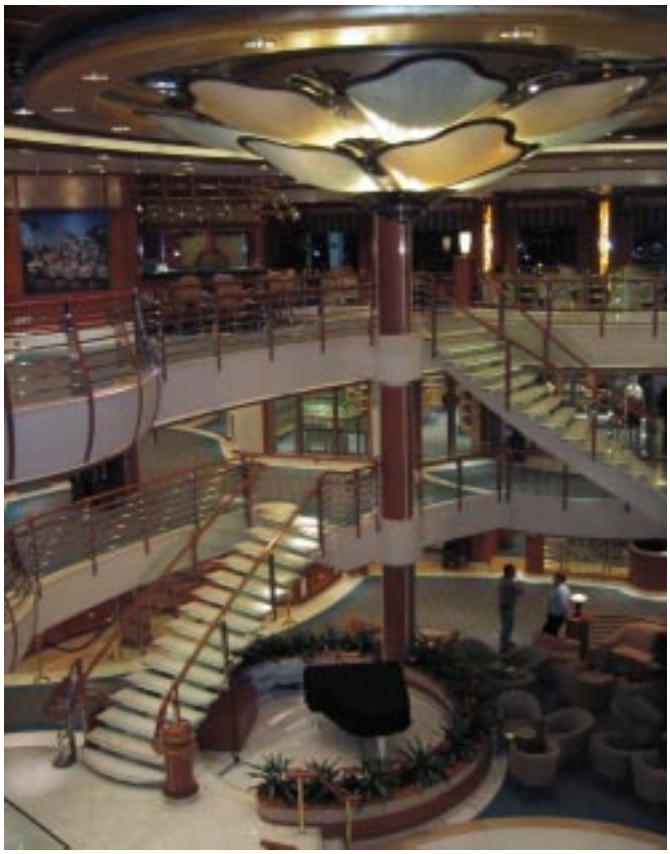
Diamond Princess Presents Gorgeous Voyage



Entrance (above)
Italian restaurant (above right)
Cabin A (right)
Gym (left)
Theater (below)

(Continued from page 1)

facilities for the voyage, which are all arranged to produce a comfortable environment. To ensure a comfortable cruise, the ship employs the electric motor-drive propulsion system with the combined power source of a gas turbine and low emission type diesel engines. High output but low noise and vibration are achieved.

Exhaust gas and various wastes on board the ship are disposed of by a flue gas treatment system, waste water treatment equipment based on next-generation bio technology, and other facilities. The large volume of waste is completely treated on board the ship without discharging into the sea.

MHI completes 35,000m³ Multi-Purpose LPG Carrier, *Berlian Ekuator*

Mitsubishi Heavy Industries, Ltd. (MHI) completed construction of the LPG carrier, *Berlian Ekuator*, at the Nagasaki Shipyard & Machinery Works and delivered the vessel to Rolling Hills Maritima S. A. on 29 January, 2004.

The *Berlian Ekuator* is a multi-purpose gas carrier with independent prismatic tanks and can carry propane, butane, propylene, butadiene, anhydrous ammonia, butylene and VCM. The cargo tanks are designed for the minimum temperature of -50°C and two kinds of refrigerated cargoes can be simultaneously handled and carried. For good efficiency in cargo handling, six sets of main cargo pumps and two sets of booster pumps are provided. Furthermore, two sets of deck tanks and deck fans for each cargo tank are provided to shorten gas displacement time.

Principal particulars
L (o.a.) x L (b.p.) x B x D x d: 169.9m x 162.0m x 27.4m x 18.2m x 11.125
DWT/GT: 26,776t/22,209t
Cargo tank type: Prismatic independent tank (Type A)
No. of tanks: 3
Cargo tank capacity: 35,437m³
Main engine: Mitsubishi 7UEC50LSII x 1 unit
Speed, service: 16.45kt
Classification: NK

Sanoyas completes Panamax bulker, *Navios Hyperion*

Sanoyas Hishino Meisho Corp. has completed the Panamax bulk carrier, *Navios Hyperion* (HN: 1208) on 10 February, 2004, for Mi-Das Line S. A. of Panama at the Mizushima Works and Shipyard. The carrier is the 17th 75,500DWT type Panamax bulker developed by Sanoyas.

The *Navios Hyperion* has seven cargo holds, and the living quarters and engine room are located aft. The cargo holds are the top side tank and hopper bottom type to facilitate bulk cargo handling.

The hatch covers are the side rolling type, and opening and closing are achieved by chain drives with hydraulic motors. The main engine uses a low speed, long-stroke, and 2-cycle diesel engine to rotate the large diameter propeller for fuel saving.

Principal particulars
L (o.a.) x L (b.p,) x B x D x d: 225.00m x 217.00m x 32.26m x 19.30m x 13.994m
DWT/GT: 75,707mt/38,871t
Cargo hold capacity: 89,250m³ (grain)
Classification: NK
Complement: 25
Speed, service: about 14,5kt
Main engine: MAN B&W 7S50MC-C diesel x 1 unit
MCR: 12,200ps

SHI-ME delivers 76,000 MTDW Panamax Bulk Carrier, *Atlantic Breeze*

Sumitomo Heavy Industries Marine & Engineering Co., Ltd. (SHI-ME) delivered a 76,000 MTDW Panamax Bulk Carrier, *Atlantic Breeze*, to Alice Shipping UK Limited, at the Yokosuka Shipyard on 25 March, 2004.

The vessel has seven cargo holds and seven cargo hatches suitable for carrying dry bulk cargoes, such as coal, iron ore and grain. The hull form is optimized to achieve both large deadweight and high propulsive efficiency. The Sumitomo Stern System (SILD, NBS propeller and HLES rudder) saves fuel consumption and improves maneuverability.

The hull structure is designed in compliance with classification requirements for the Safe Hull notation. A water ingress detection and alarm system for cargo holds further enhances safety of the vessel.

Water ballast tanks are heavily coated with epoxy based paint with backup anodes for corrosion protection. A fully automated ballast system is provided for efficient handling of water ballast. The system is monitored and controlled remotely from the accommodation quarters.

Principal Particulars
L (o.a.) x B x D x d: 225m x 32.26m x 19.30m x 14.00m
DWT/GT: 76,200t/39,800t
Cargo capacity: 90,600m³
Main engine: Mitsui MAN B&W 7S50MC-C
Service speed: 14.5kt
Complement: 28
Classification: ABS, ACCU, SH

SKD completes 32,762-DWT bulker, *Federal Kushiro*

Wealth Line Inc. of Panama has taken a delivery of the 32,762DWT bulk carrier, *Federal Kushiro*, at the Onishi Works of Shin Kurushima Dockyard Co., Ltd. (SKD). The bulk carrier is designed with the maximum hull form permitted to navigate through the Saint Lawrence Seaway. Before designing the ship, SKD had observed the depth conditions and dangerous parts of the seaway to maximize the ship dimensions and ensure safe navigation. The observations were made through the courtesy of FEDNAV LTD., the operator of the ship.

The new design allows the ship to navigate with the largest load ever in the shallow seaway. The six cargo hold arrangement is well balanced for efficiently loading grain, ore, steel materials, packaged lumber, and other cargoes. The ship design also complies with dangerous goods requirements. All holds are permitted to load coal, and Nos. 1 through 5 holds can load ammonium nitrate. Three electro-hydraulic deck cranes are installed, and the hatch covers are the end-folding type driven by hydraulic cylinders. Thus cargo handling can be achieved efficiently.

A bridge console and bow thruster are provided, and ship maneuvering is achieved in real time at the wheelhouse. These features increase safe ship operation within the shallow and dangerous areas in the river and ports.

The main engine and diesel electric generators satisfy the requirements for international restrictions of waste gas emission with decreased NO_x emissions, and at the same time fuel consumption is lowered. Eco-awareness is fully taken into account. Moreover, to cope with new regulations required for bulk carriers, a water ingress alarm system for the bow section and cargo holds and remotely controlled water discharge system for the bow section are provided for improved ship safety.

Principal particulars
L (o.a.) x L (b.p.) x B x D x d: 190.43m x 181.00m x 23.60m x 15.20m x 10.65m
DWT/GT: 32,762t/19,223t
Main engine: 6UEC52LA
MCR: 7,080 kW x 133min^{-1}
NOR: 6,372 kW x 128min^{-1}
Speed, service: 14.4kt
Complement: 25
Classification: ABS
Completion: Feb. 4, 2004

MES obtained authentication of CS1, new system for LNG carrier

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) acquired the authentication of "CS1 System", a new system for LNG (Liquefied Natural Gas) carrier from its licensor, Gaz Transport & Technigas (GTT in France) and relevant four classification societies, the Lloyd's Register of Shipping (LR in UK), Bureau Veritas (BV in France), American Bureau of Shipping (ABS in USA), and Nippon Kaiji Kyokai (NK in Japan).

This is the first authentication as a Japanese shipyard, and MES will be the second authenticated shipyard worldwide following Chantier d'Atlantique (France) where the first LNG Carrier of CS1 System is now being built.

CS1 System is a new method of membrane type LNG ship developed by GTT to achieve low cost construction and size enlargement of LNG carriers, which combines merits of both of the conventional system "Gaz Transport (GT) No.96" and "Technigas (TG) Mark III".

In this system, the invar steel of the GT system is adopted for the first insulation wall and the Triplex of the TG system method is adopted on the second insulation wall. Since the Triplex is a bonded structure, the first and second walls can be constructed in the shop as one unit, which enables the shortening of the construction period. Moreover, the adoption of the polyurethane foam for the heat insulation enables a thinner insulation part, compared with the insulation box of GT system, which eventually can increase the cargo tank capacity.

MES, after establishing the construction technologies for GT system Membrane Type LNG carrier, now has the construction and delivery record of Membrane Type LNG carrier of such system, one in 2002 and 2004 respectively and the third one is being is now under construction. In addition, MES has already the delivery record of ten MOSS type LNG carriers.

By newly acquiring the authentication of CS1 system for Membrane type LNG carrier, MES has now established a construction system of building three types of LNG carriers, and is committed to promote a sales activity in positive and flexible manners in the LNG carrier market where an enlargement of ship size is foreseen.

CS1 System Mock-Up Tank

TSC establishes design criteria for wheelhouse

Tsuneishi Shipbuilding Co., Ltd. (TSC) has newly established its own design criteria for the wheelhouse in which safe ship operation must be ensured. The criteria are first applied to the CAMSAMAX bulk carrier scheduled for launching in 2004. The company will continue to apply the design criteria to ships to be built at its shipyards.

TSC has continued to study functions of the wheelhouse where the crew conducts their tasks for a long time, which relate to navigational watch conditions, working environment, livability, and operability of ship-maneuvering equipment. The company has also invited an architect as a consultant to provide consideration of human engineering for the total wheelhouse design.

New design criteria include the following features:

(1) Provision of wide view using large glass windows

The windows at the front and at both sides of the bridge use glass windows wider than those used for previous ships, by which blind spots have been reduced, ensuring safe navigation.

(2) Increased operability by unitizing radar and console

The steering unit is built in the bridge console, and the radar and console are also unitized. This arrangement increases operability in steering and maneuvering tasks.

(3) Improved working environment by color scheme

Based on the architect advice, the color arrangement inside the wheelhouse has greatly been improved in livability. Flooring and curtains are coordinated on the blue color basis. The ceiling and walls use rather dark color than the others to provide calm environment for alleviation of fatigue. Moreover, important navigational equipment including the bridge console, radio console, radar, and navigational meters are coated with blue color to easily identify navigational equipment and give adequate attention to the crew.

(4) Rubber mat used on the floor to reduce fatigue

The rubber mat is used on the flooring of the wheelhouse to reduce fatigue by non-slip and cushion effects.

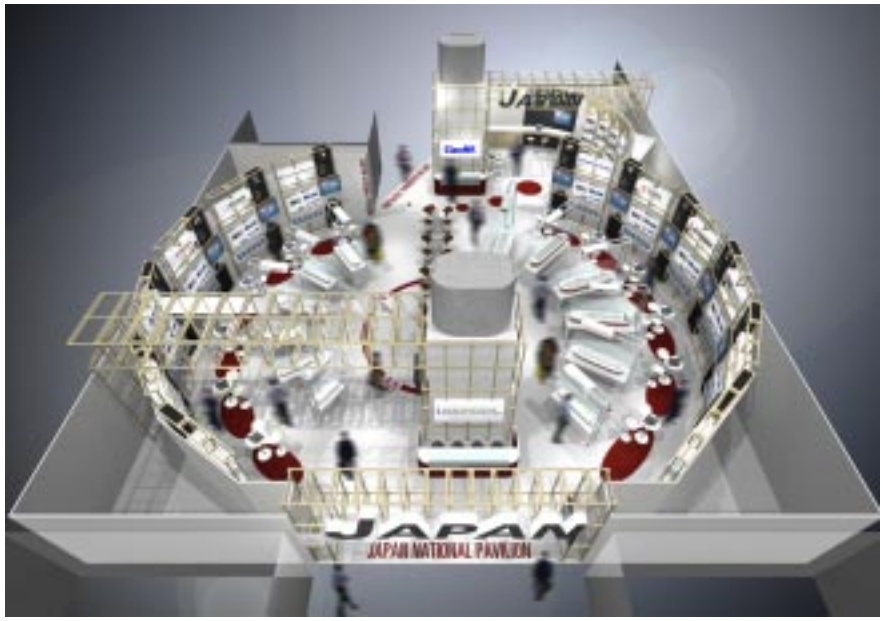
JSEA participates in Posidonia 2004

The 19th Posidonia 2004 (The International Shipping Exhibition) will take place at the Piraeus Exhibition Centre in Piraeus five days from June 7 through 11. This event is organised by the Posidonia Exhibitions SA and sponsored by the Greek Ministry of Mercantile Marine, Union of Greek Shipowners, etc. and organizations related to the maritime industry.

The Japan Ship Exporters' Association consisting of 11 Japanese shipbuilders will participate in the exhibition with the financial support of The Nippon Foundation and in cooperation with The Shipbuilders' Association of Japan. JSEA, The Cooperative Association of Japan Shipbuilders, and the Nippon Kaiji Kyokai co-exhibitors, will use a 261m^2 exhibition area where Japanese shipbuilding technology will be presented. Particular ship hull forms and newly developed ship designs will be introduced with the plasma vision system and other displays.

Shipbuilders:

IHI Marine United Inc.
Imabari Shipbuilding Co., Ltd.
Kawasaki Shipbuilding Corporation
Mitsubishi Heavy Industries, Ltd.
Mitsui Engineering & Shipbuilding Co., Ltd.
Namura Shipbuilding Co., Ltd.
Oshima Shipbuilding Co., Ltd.
Sanoyas Hishino Meisho Corporation
Shin Kurushima Dockyard Co., Ltd.
Sumitomo Heavy Industries, Ltd.
Universal Shipbuilding Corporation



Oshima develops easily attachable remote de-watering system

Oshima Engineering Co. Ltd. (OEC), a subsidiary of Oshima Shipbuilding Co., Ltd., has developed a remote water-discharging device for the boatswain store and fore peak tank (ballast tank), which must be installed together with the water ingress alarm system on board bulk carriers. (The water ingress alarm system of Oshima Engineering was also introduced in SEA Japan No. 301)

This device allows the remote control of water discharging by only adding the remote control system to the water-discharging devices installed on the operating ships. This device has already been attached to 11 Panamax

type vessels.

For the boatswain store, water valves of ejectors have been modified into the remote control system, and for fore peak tanks, the system has been applied to Hydraulic valves of five vessels, MAROL hyd. valves of three vessels, and the REACH ROD manual types of three vessels.

The crew can easily attach the remote control system to the existing water discharging devices during navigation in the same way as the water ingress alarm system, WINOSY System. For reference, the WINOSY System is a combined system of the water ingress alarm system and remote de-watering system.

Saffron

Owner: Adoramar Shipping Inc.
Builder: Kawasaki Shipbuilding Corporation
Hull No.: 1542
Ship type: Bulk carrier
L (o.a.) x B x D x d: 189.80m x 32.26m x 16.90m x 11.90m
DWT/GT: 50,000t/28,200t
Main engine: Kawasaki MAN B&W 6S50MC-C diesel x 1 unit
MCR: 8,090kW x 127rpm
Classification: NK
Completion: Jan. 21, 2004

Puteri Zamrud Satu

Owner: Malaysia International Shipping Corporation Berhad
Builder: Mitsui Engineering & Shipbuilding Co., Ltd.
Hull No.: 1507
Ship type: LNG carrier
L (o.a.) x B x D x d: 276.00m x 43.40m x 25.50m x 11.01m
DWT/GT: 76,144t/94,446t
Main engine: MHI MS40-2 steam turbine x 1 unit
Speed, service: 21.38kt
Classification: LR
Completion: Jan. 15, 2004

Celebrity

Owner: Victory Trading Company/ Dynacom Tankers Management Ltd.
Builder: Sumitomo Heavy Industries Marine & Engineering Co., Ltd.
Hull No.: 1300

Ship type: Tanker
L (o.a.) x B x D x d: 237.74m x 42.00m x 21.30m x 14.85m
DWT/GT: 105,200t/56,227t
Main engine: DU Sulzer 6RTA58T diesel x 1 unit
Speed, service: 15.10kt
Classification: LRS
Completion: Feb. 24, 2004

Torm Anholt

Owner: ND Shipping S. A.
Builder: Namura Shipbuilding Co., Ltd.
Hull No.: 235
Ship type: Bulk carrier
L (o.a.) x B x D x d: 224.93m x 32.20m x 19.30m x 13.952m
DWT/GT: 74,195t/39,035t
Main engine: Hitachi B&W 7S50MC (MK VI) diesel x 1 unit
Speed, service: 14.5kt
Classification: NK
Completion: Feb. 23, 2004

Isuzugawa

Owner: Isuzugawa Shipping S.A.
Builder: Universal Shipbuilding Corp.
Hull No.: 232
Ship type: VLCC
L x B x D x d: 333.0m x 60.0m x 29.6m x 18.6m
DWT/GT:299,984t/159,929t
Main engine: DU Sulzer 76TA84T-B x 1 unit
Speed, max.: 15.6 kt
Classification: NK
Completion: Jan. 23, 2004