



## The world largest open hatch general cargo carrier, CORELLA ARROW by Oshima



Oshima Shipbuilding Co., Ltd. delivered the 72,863DWT CORELLA ARROW, the world's largest open-hatch bulk carrier for general cargoes, to Glory Ocean Shipping S.A. in May 2009.

The design allows accommodating a variety of cargoes including pulp, packaged lumber, ore, grain, roll paper, aluminum ingots, coal and other solid bulk cargoes. Two electric-powered gantry cranes manufactured by Iknow Machinery Co., Ltd. are installed on the upper deck, and the capacity of the crane has 70t lifting capacity, which is the largest capacity in this class. A large-capacity dehumidifier is installed, and special cargoes such as wooden pulp and roll paper can be kept dry.

A bow thruster and high-lift schilling rudder are employed to ensure ship maneuvering in a port. The Seaworthy bow, which is designed to maintain the excellent seaworthiness, improves the speed performance under the

rough weather conditions, and adoption of a set of the Flipper-fins increases propulsive efficiency. These combined arrangements help decrease the fuel oil consumption and improve propulsion performance further.

### Principal particulars

|                 |                                 |
|-----------------|---------------------------------|
| Length, o.a.:   | 225.00m                         |
| Breadth, mld.:  | 32.26m                          |
| Depth, mld.:    | 20.56m                          |
| Draft, mld.:    | 14.388m                         |
| DWT:            | 72,863t                         |
| GT:             | 44,684                          |
| Main engine:    | MAN B&W 6S60ME-C diesel x 1unit |
| MCR:            | 12,577kW                        |
| Service speed:  | 15.5kt                          |
| Classification: | DNV                             |
| Delivery Date:  | May 11, 2009                    |



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## JAPAN SHIP EXPORTERS' ASSOCIATION

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## The Ship of the Year 2008 award goes to “megumi,” trimaran passenger ferry —Associated awards for FERRY AKEBONO and TRINITY ARROW—

The Japan Society of Naval Architects and Ocean Engineers awarded its 19th Ship of The Year 2008 Award to the “megumi”, a small trimaran type passenger ferry of the light metal hull. Three awards were obtained by the TRINITY ARROW for the large cargo vessel category, the FERRY AKEBONO for the large passenger ship category, and the “megumi” for the small passenger ferry category. The commendation ceremony took place at the Nippon Kaiun Club in Tokyo on July 24, 2009. The ceremony was held jointly with two other institutes, The Japan Institute of Marine Engineering (JIME) and The Japan Institute of Navigation. The Marine Engineering of the Year Award and the navigation Achievement Prize were given to the respective winners.

### “megumi”

The “megumi” was built by



Kabushiki Kaisha Mokubei Zosensho of Shiga Prefecture in 2008 for Biwako Kisen Steamship Co., Ltd. The ferry is operated in Lake Biwa, the largest lake in Japan. The typical features of the ferry include the use of bio-diesel fuel for the main engine, employment of solar photoelectric generation and wind power generation systems for reduction of CO<sub>2</sub> emission. Moreover, the trimaran type hull contributes to achieving higher speed and efficiency in reducing the resistance by backwash. This results in fuel consumption reduction.

#### Outline

Ship type: Trimaran passenger ferry of light metal hull

Owner: Biwako Kisen Steamship Co., Ltd.  
 Builder: Kabushiki Kaisha Mokubei Zosensho  
 L (b.p.) x B x D x d: 34.20m x 8.00m x 2.20m x 0.715m  
 GT: 122  
 Speed: 18.75kt  
 Main engine: Yanmar 6HYP-ET diesel (423kW) x 2 units  
 Passengers: 200 people  
 Special outfitings: BDF compatible main engine, solar photoelectric and wind power generation systems, water sampler

### FERRY AKEBONO

The FERRY AKEBONO uses two-



engine and single propeller propulsion system. This arrangement is the first time as a costal ship, and reduces CO<sub>2</sub> and NO<sub>x</sub> by 13.3% and 24.3%, respectively, when compared with the previous two engines and two propeller ship. The ferry is now plying between Kagoshima, Amami Islands, and Okinawa. It visits many remote islands on the route for transport of both daily essentials and local people between islands. Considerations by barrier-free facilities are taken for the senior people.

#### Outline

Ship type: Passenger/car ferry  
 Owner: Japan Railway Construction, Transport and Technology Agency and A-Line Ferry Co., Ltd.  
 Builder: Mitsubishi Heavy Industries, Ltd.  
 L (b.p.) x B x D x d: 135.00m x 24.00m x 14.50m x 6.25m

GT: 8,083  
 Speed: 21.0kt  
 Main engine: JFE 12PC2-6V diesel (MCR 6,070kW) x 2 units  
 Accommodation capacity  
 Passengers: 682 people  
 Containers: 311TEUs  
 Vehicles: 50 trucks, 76 passenger cars

### TRINITY ARROW

The TRINITY ARROW has the



world's largest class cargo tank capacity as an LNG carrier that was built in Japan. To increase the cargo tank capacity, the No. 1 tank uses the world's first octagonal section. The ship's service speed is about 20.15 knots, faster than that of the conventional LNG carrier of the same type to achieve the flexible ship operation. Foaming gas to manufacture the insulation material for the LNG tanks uses CO<sub>2</sub> for the first time that will minimize the ozone depletion coefficient and the 100-year global warming potential.

#### Outline

Ship type: LNG tanker  
 Owner: Cypress Maritime (Panama), S.A., Luster Maritime S.A., Los Halillos Shipping Co., S.A.  
 Builder: Koyo Dockyard Co., Ltd. (Imabari Shipbuilding Co., Ltd.)  
 L (b.p.) x B x D x d: 76.00m x 44.70m x 26.00m x 12.05m  
 GT: 101.080  
 Speed: 20.15kt  
 Main engine: Steam turbine (KAWASAKI UA-400) x 1 unit (MCR 29,420kW)  
 Cargo: LNG (154,982m<sup>3</sup>)

## MHI delivers large PCTC, TOSCANA, to Wilhelmsen Lines Shipowning AS

Mitsubishi Heavy Industries, Ltd.(MHI) delivered TOSCANA, a pure car and truck carrier with a car carrying capacity of 6,500 units to Wilhelmsen Lines Shipowning AS on June 12, 2009. The TOSCANA is the tenth in the series of ten new PCTC's ordered by WILHELMSSEN LINES SHIPOWNING AS.

The ship can load various types of cargoes, cars, high and heavy machinery such as construction and agricultural machinery, dump truck and heavy lift on roll trailer up to 250 tons.

The cargo holds are constructed with center pillars and one line movable ramp ways to give optimum flexibility during loading and unloading.

The decks are accessed through a stern ramp with a SWL of 300 tons and a side ramp of 35 tons from the shore side. Internal transit between the decks is carried out via 13 mov-



able hold ramps and one fixed ramp.

The ship has the capacity for accommodation of 6,556 cars (RT-43) on 12 decks including four liftable decks.

Principal particulars

L (b.p.) x B x D: 192.00m x 32.26m x 36.02m

Gross tonnage: 61,328

Car carrying capacity: 6,556 cars (RT-

43)

Main engine: Mitsubishi-UE 7UEC60LSII (Derated) diesel x 1 unit,

MCR: 13,240kW x 105.0min<sup>-1</sup>

Service speed: abt. 20.0kt

Classification: DNV, +1A1, Car Carrier (MCDK), E0, TMON

## Naikai Zosen completes product carrier, HIGH CURRENT

Naikai Zosen Corporation has delivered the 46,590DWT product tanker, HIGH CURRENT (HN: 720), to its owner Ansei Product S.A. of Panama at the Setoda Works.

The HIGH GLOW has the maximized beam to go through the Panama Canal. It is designed with double bottom and double side shells, complying with the MARPOL requirements and can carry various products including petroleum products (light and heavy oils), crude oil, and palm oil.

The vessel has 14 cargo tanks including two slop tanks, and the total capacity is 54,000m<sup>3</sup>. The configuration facilitates simultaneous loading of four types of liquid cargoes by allotting 25% of the total cargo capacity for each cargo. Four electric motor drive screw pumps with a capacity of 800m<sup>3</sup>/h are provided for unloading cargoes.

The slender hull design can achieve high speed. A high forecastle prevents the bow from swashing and increases

seaworthiness as a high-speed medium range product tanker, attaining energy saving. Adoption of a special rudder facilitates ship maneuvering in a narrow port. Thus, the overall ship operation efficiency has increased.

The accommodation quarters are isolated from the engine casing to decrease noise and vibration. The crew can enjoy a quiet environment in the accommodation quarters.

Principal particulars

Length, o.a.: 179.90m

Length, b.p.: 172.00m

Breadth, mld.: 32.20m

Depth, mld.: 19.25m

Draught, mld.: 11.65m

DWT: 46,590t

GT: 28,231

Main engine: Hitachi MAN B&W 6S50ME-C diesel x 1 unit

MCR: 9,480kW x 127min<sup>-1</sup>

NCR: 8,530kW x 123min<sup>-1</sup>

Speed, service: About 15.7

Complement: 25

Classification: NK

Completion: Apr. 28, 2009





## IHIMU completes 302,290 DWT Double-Hull VLCC, PACIFIC VOYAGER

IHI Marine United Inc. delivered the 302,290 DWT double-hull VLCC, PACIFIC VOYAGER, for Dynasty Shipping Corporation S.A. at its Kure Shipyard on Apr. 17, 2009.

The PACIFIC VOYAGER was developed to have maximum deadweight with maximum draft to pass through the Strait of Malacca.

Superior economical operation is possible for worldwide trades, and good cargo loading capacity can be maintained at the shallow draft condition between the Persian Gulf and Far-East trade. The arrangement of cargo oil tanks, ballast tanks, and other compartments is optimized, resulting in lower gross tonnage.

The DU-Sulzer 7RT-flex84T-D high power engine is installed, which is equipped with the electronically controlled common rail type fuel injection system for optimized engine operation. The environmental-friendly vapor emission control system is employed,



To achieve the good propulsion performance, economical operation, and good maneuverability of the ship, IHIMU designed the ship using its sophisticated technology and engineering capacity, CFD analysis, 3D-FEM ship model analysis, walk-through simulation and apparatus hull-block installation simulation by the CIM system, Ajisai, which IHIMU originally developed.

### Principal particulars

|                       |  |
|-----------------------|--|
| L (o.a.) x B x D x d: | 333.0m x 60.0m x 29.0m x 20.5m           |
| DWT/GT:               | 302,290t/159,943                         |
| Main engine:          | DU-Sulzer 7RT-flex 84T-D diesel x 1 unit |
| MCR:                  | 27,160kW x 74.0rpm                       |
| Speed, service:       | 15.80kt                                  |
| Classification:       | NK                                       |
| Completion:           | Apr. 17, 2009                            |

## Universal completes 207,000 DWT Bulk Carrier, OCEAN CREATION

Universal Shipbuilding Corporation delivered OCEAN CREATION, a 207,000 DWT Bulk Carrier, to Asian Cruiser S.A. at the Tsu Shipyard on Apr. 22, 2009. The vessel is designed to carry bulk coal and iron ore between Asia and Australia more efficiently and to have flexibility for port restrictions.

This is the 9th vessel of the new

design series of Newcastle-max that is not only the most efficient for shallow draft, but also has large cargo hold capacity.

The vessel applied double side skin construction for cargo holds in order to reduce the flooding risk due to side damage and improve cargo handling. In spite of having cargo holds bound by a double side skin, the cargo ca-

capacity is equivalent to that of previous single skinned Newcastle-max series.

The vessel is equipped the high propulsion efficiency and energy saving devices, SSD (Super Stream Duct) and Surf-Bulb (Rudder Fin with Bulb), in front and behind the propeller.

In addition, the bow above the waterline is shaped as the Ax-Bow that can decrease added wave resistance at sea.

Deck machinery such as windlasses/mooring winches and hatch covers are driven by electric-motor system for oil leak prevention on deck.

### Principal particulars

|                                  |                                       |
|----------------------------------|---------------------------------------|
| L (o.a.) x L (b.q.) x B x D x d: | 299.7m x 290.2m x 50m x 25.0m x 18.2m |
| DWT/GT:                          | 207,935MT/106,367                     |
| Loading capacity:                | 218,790m <sup>3</sup>                 |
| Main engine:                     | MAN B&W 6S70MC-C diesel x 1 unit      |
| Speed:                           | 16.3kt                                |
| Complement:                      | 25                                    |
| Classification:                  | NK                                    |
| Completion:                      | Apr. 22, 2009                         |



## Kawasaki delivers VLCC, SAKURAGAWA, to KAW1612 Shipping S.A.

Kawasaki Shipbuilding Corporation delivered the 315,000DWT VLCC, SAKURAGAWA (HN: 1612), to its owner, KAW1612 Shipping S.A. at the Sakaide Shipyard on June 5, 2009.

The vessel built based on the newly developed hull design has the maximum loading capacity that is allowed to pass through the Strait of Malacca and can call at any of main crude oil import terminals in Japan.

The bunker oil tanks of the vessel are double hull construction like the cargo tanks to prevent marine pollution in an accident. The rudder bulb with fins (RBS-F) and highly efficient propeller are used for improved fuel saving.

Principal particulars

Length, o.a.: 332.93m  
Length, b.p.: 324.00m



|                      |                       |                               |
|----------------------|-----------------------|-------------------------------|
| Breadth, mld.:       | 60.00m                | 7S80MC-C diesel x 1 unit      |
| Depth, mld.:         | 29.00m                | MCR: 27,160kW x 76rpm         |
| Draught, mld.:       | 20.305m               | Speed, service: About 15.58kt |
| GT:                  | 160,068               | Complement: 35                |
| DWT:                 | 299,982t              | Classification: NK            |
| Cargo hold capacity: | 351,618m <sup>3</sup> |                               |
| Main engine:         | Kawasaki-MAN B&W      |                               |

## MITSUI-MAN B&W Diesel Engine Annual Production Reached Record High 4.7 Million BHP in FY 2008

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) has accomplished the largest diesel engine production of 4.7 million brake horsepower (BHP) with 214 units in its Tamano Works for fiscal year 2008 exceeding its previous year's record of 4.52 million BHP with 200 units.

MES, since it manufactured its first engine in 1928, has ever produced total accumulated engine output of 64,734 thousand BHP (as an accumulated BHP production with a single

brand of MITSUI-MAN B&W low speed diesel engine at the end of March 2009) as a leading engine manufacturer worldwide. This fiscal year's total engine production is expected to be 4.53 million BHP.

In order to cope with a recent active demand for diesel engine, MES has expanded the assembly and testing facility with a tact system, and machining and/or welding capacities since 2005 to increase its production capacity. To further strengthen, a new

assembly and testing shop was completed in June this year, which will contribute a lot to more efficient production of the engines with 500mm bore. The annual production capacity of the new shop is expected to be approximately 1 million BHP with 80 units.

MES is improving its after sales service system by developing "e-GICS" and "e-GICSW," which diagnoses performance and life expectancy of marine diesel engine by satellite and internet, and is committed to enhance customers' satisfaction more than before.



### Annual records for the last 5 years by MITSUI-MAN B&W low speed engine

|        |                                 |
|--------|---------------------------------|
| FY2004 | 177 units with 3.48 million BHP |
| FY2005 | 186 units with 3.52 million BHP |
| FY2006 | 195 units with 4.01 million BHP |
| FY2007 | 200 units with 4.52 million BHP |
| FY2008 | 214 units with 4.70 million BHP |
| FY2009 | 225 units with 4.53 million BHP |

\* Figures of FY2009 are expected ones.

Photo shows MES diesel manufacturing plant



**ROYAL ACCORD**

Owner: Panamanian owner  
 Builder: Imabari Shipbuilding Co., Ltd. (Saijo Shipyard)  
 Hull No.: 8077  
 Ship type: Bulk carrier  
 L (o.a.) x L (b.p.) x B x D x d: 288.93m x 280.80m x 45.00m x 24.70m x 18.147m  
 DWT/GT: 180,129t/90,111  
 Main engine: MAN B&W 6S70MC-C diesel x 1 unit  
 MCR: 17,700kW x 87.0rpm  
 Speed, service: 15.1kt  
 Classification: NK  
 Completion: Apr. 10, 2009

**CAPE BRITANNIA**

Owner: "K" Line Bulk Shipping (UK) Limited  
 Builder: Mitsui Engineering & Shipbuilding Co., Ltd.  
 Hull No.: 1694  
 Ship type: Bulk carrier  
 L (o.a.) x L (b.p.) x B x D x d: 292.00m x 282.00m x 44.98m x 24.70m x 17.95m  
 DWT/GT: 178,369t/92,281  
 Main engine: MITSUI-MAN B&W 6S70MC-C diesel x 1 unit  
 MCR: 18,660kW x 91rpm  
 Speed: 15.3kt  
 Complement: 28  
 Classification: NK  
 Delivery: June 11, 2009

**ERICA**

Owner: Nikolson B. V.  
 Builder: Sanoyas Hishino Meisho Corp.  
 Hull No.: 1276  
 Ship type: Bulk carrier  
 L (o.a.) x L (b.p.) x B x D x d: 229.00m x 223.00m x 32.24m x 20.20m x 14.551m  
 DWT/GT: 83,690t/44,213  
 Cargo hold capacity: 96,152m<sup>3</sup>  
 Main engine: MAN B&W 6S60MC-C diesel x 1 unit  
 MCR: 10,740kW  
 Speed, service: about 14.0kt  
 Classification: ABS  
 Completion: May 28, 2009

**VIGOR SW**

Owner: Venus Ocean Navigation S.A.  
 Builder: Kanda Shipbuilding Co., Ltd.  
 Hull No.: 495  
 Ship type: Open hatch cargo ship  
 L (o.a.) x B x D x d (ext.): 177.13m x 28.40m x 14.25m x 10.00m  
 DW/GT: 32,227.25t/20,236  
 Main engine: MITSUBISHI 6UEC52LA diesel x 1 unit  
 Speed, service: About 14.3knot  
 Classification: NK/CR  
 Completion: May 22, 2009

**TH SOUND**

Builder: Tsuneishi Holdings Corporation  
 Hull No.: 1389  
 Ship type: Tanker  
 L (o.a.) x B x D x d (ext.): 243.80m x 42.00m x 21.30m x 14.578m  
 DWT/GT: 107,687t/60,205  
 Main engine: Mitsui MAN B&W 6S60MC-C diesel x 1 unit  
 Speed, service: 15.4kt  
 Classification: ABS  
 Completion: May 20, 2009

**MAIZURU DAIKOKU**

Owner: Verdant Naviera S.A.  
 Builder: Namura Shipbuilding Co., Ltd.  
 Ship type: Bulk carrier  
 L (o.a.) x L (b.p.) x B x D x d: 234.88m x 226.00m x 38.00m x 20.00m x 14.20m  
 DWT/GT: 93,521t/50,933  
 Main engine: Mitsui MAN B&W 6S60MC (Mk 6) diesel x 1 unit  
 Maximum output: 12,240kW x 105.0rpm  
 Speed, service: 15.0kt  
 Complement: 25  
 Classification: NK  
 Completion: July 3, 2009

