PERTAMINA PRIME 301,000 DWT Crude Oil Tanker 8

Japan Marine United Corporation

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PERTAMINA PRIME 301,000 DWT Crude Oil Tanker 8

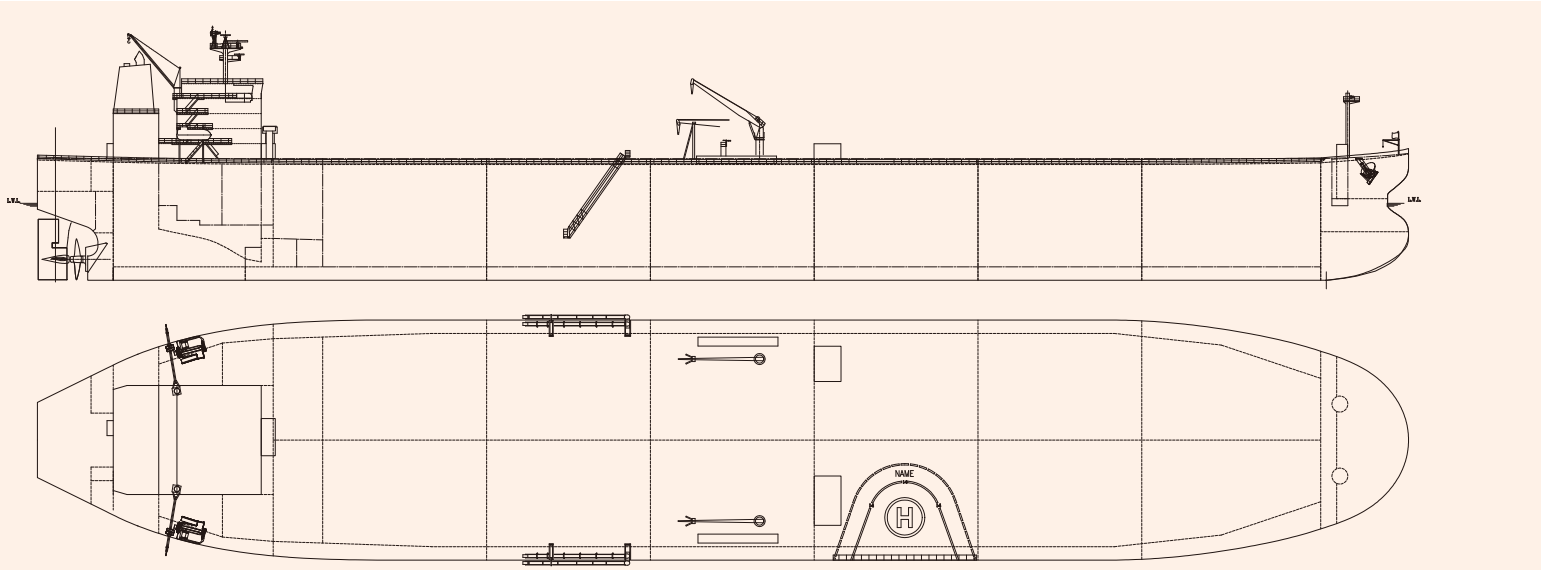
Japan Marine United Corporation delivered the 301,000 DWT Crude Oil Tanker, "PERTAMINA PRIME" at Ariake Shipyard on March 30, 2021.

Features

1. The vessel is the 11th vessel of the "G Series" VLCC.
2. The principal particular of the vessel have been designed to provide flexibility for worldwide trade by achieving both compact hull form and large deadweight at shallow draft. The vessel has been developed drastically reducing fuel oil consumption together with CO^2 emissions compared with existing vessels.
3. Excellent hull performance was achieved by adopting various and comprehensive technologies such as an advanced lower resistance hull form and optimized energy saving devices of the SSD® (Super Stream Duct®), SURF-BULB® (Rudder Fin with Bulb) and ALV-Fin® (Advanced Low Viscous Resistance Fin).
4. The unique bow shape, called the "Ax-Bow®", gives better performance in waves under the laden condition and well-refined shape of superstructure can attain low wind resistance.
5. The fuel oil consumption was further improved by installing a MAN Diesel & Turbo model G-type electronically controlled marine diesel engine, and a high efficiency propeller.
6. The vessel is applied with MARPOL ANNEX VI NOx Tier III and SOx emission regulation, in addition to Common Structural Rules for Bulk Carriers and Oil Tankers (H-CSR) by IACS and Performance Standard for Protective Coatings (PSPC) for seawater ballast tanks and cargo oil tanks by IMO.

PRINCIPAL PARTICULARS

Length (o.a.)	330.0 m
Breadth (mld.)	60.00 m
Depth (mld.)	29.35 m
Draft (mld.)	21.55 m
Gross tonnage	157,116
Deadweight	302,094 t
Main engine	MAN B&W 7G80ME-C9.5-HPSCR
Speed (max. trial)	15.5 knots
Complement	30
Classification	ABS
Builder	Japan Marine United Corporation



ENEOS DREAM 311,000 DWT Crude Oil Tanker 9

Japan Marine United Corporation

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ENEOS DREAM 311,000 DWT Crude Oil Tanker 9

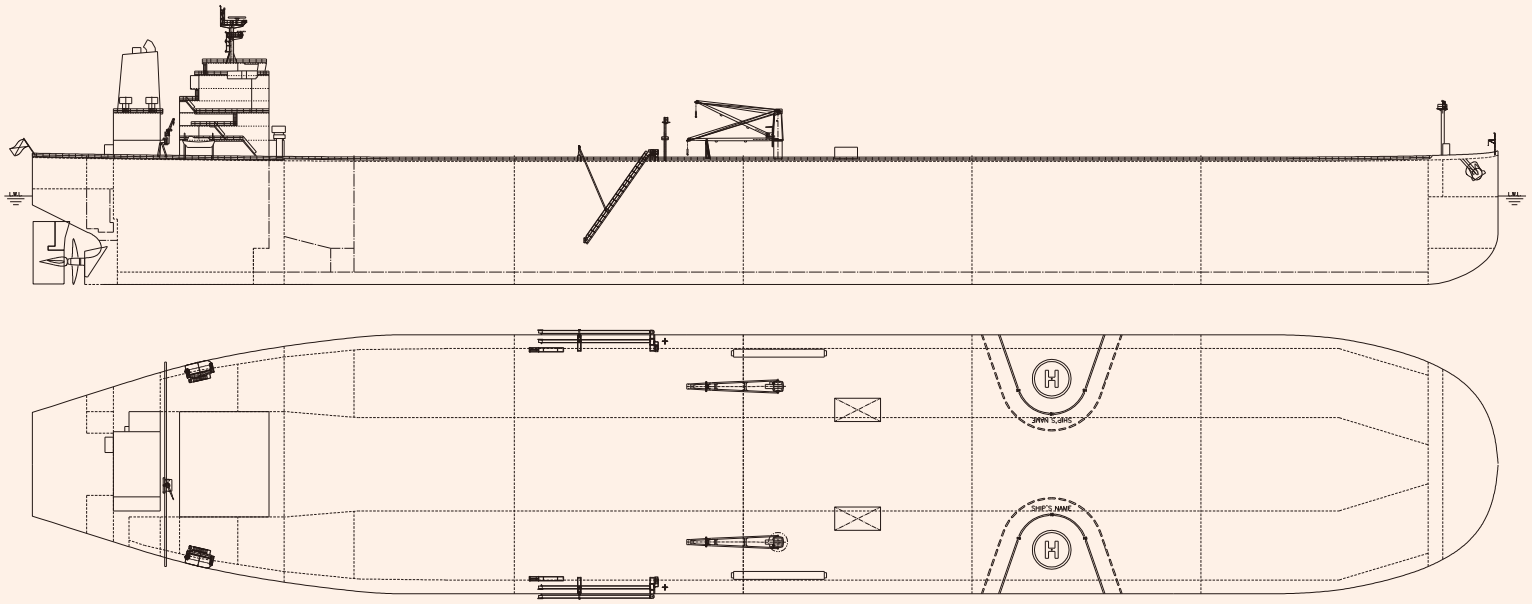
Japan Marine United Corporation delivered the 311,000 DWT Crude Oil Tanker, "ENEOS DREAM" at Ariake Shipyard on June 1, 2021.

Features

1. This is the 13th vessel of the newly developed eco-type Malacca max VLCC.
2. Principal particulars have been optimized for transportation between Middle East and Japan, while satisfying restrictions of domestic ports. Various and latest technologies developed through JMU's extensive experience in building tankers have been incorporated into the vessel.
3. High propulsion performance was achieved by the application of lower resistance and high efficiency hull form, and optimized energy saving devices such as the SSD® (Super Stream Duct®), SURF-BULB® (Rudder Fin with Bulb) and ALV-Fin® (Advanced Low Viscous Resistance Fin).
4. In addition, good sea performance was achieved by the application of the low wind resistance accommodation house and unique bow shape called the "LEADGE-Bow®".
5. The fuel oil consumption was further improved by the application of new electronically controlled marine diesel engine, low friction paint and large diameter propeller.
6. This vessel is equipped with a SOx scrubber to comply with MARPOL ANNEX VI Regulation 14.

PRINCIPAL PARTICULARS

Length (o.a.)	339.5m
Breadth (mld.)	60.00 m
Depth (mld.)	28.50 m
Draft (mld.)	21.05 m
Gross tonnage	160,725
Deadweight	312,168 t
Main engine	WinGD W7X82
Speed (service)	15.5 knots
Complement	30
Classification	NK
Builder	Japan Marine United Corporation



DIMITRIOS 158,500 DWT Crude Oil Tanker 13

DIMITRIOS 158,500 DWT Crude Oil Tanker 13

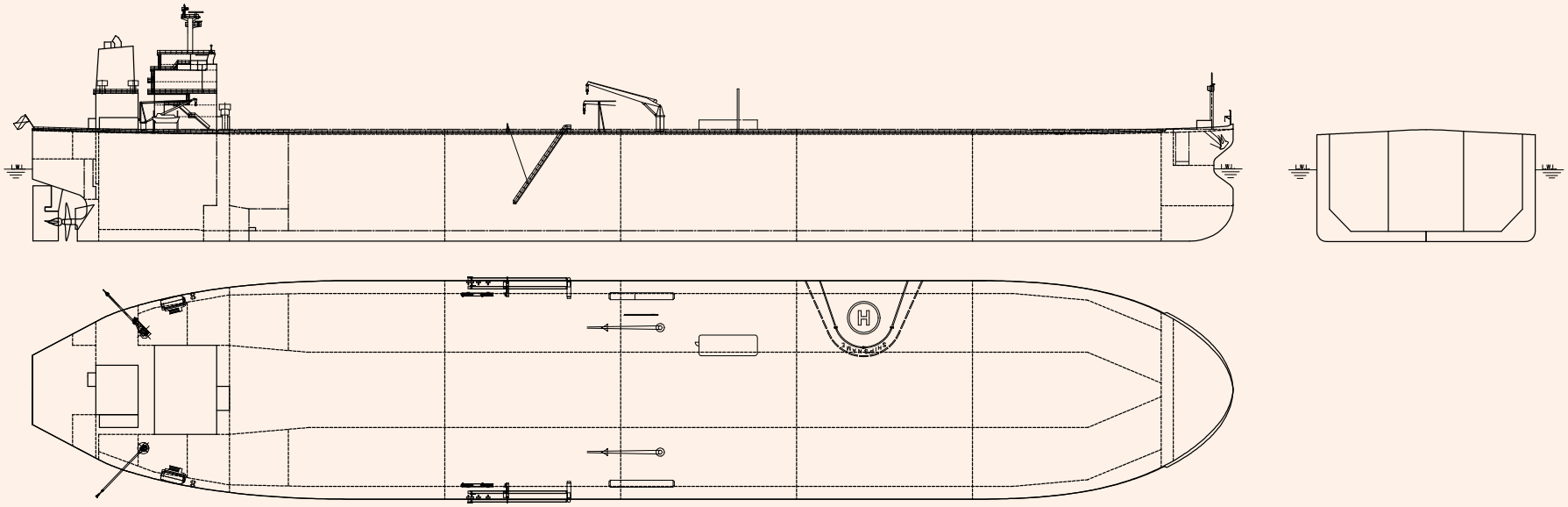
Japan Marine United Corporation delivered the Suezmax Crude Oil Tanker, "DIMITRIOS" at Tsu Shipyard on June 22, 2021.

Features

1. This is the 8th vessel of newly developed eco-type Suezmax Tanker.
2. Principal particular has been optimized in accordance with the market requirements, while satisfying restrictions of main ports in the world. Various and latest technologies developed through our rich experience in building tankers have been incorporated into her.
3. Excellent hull performance was achieved by using various and comprehensive technologies, which include advanced lower resistance hull form and optimized energy saving devices of the SSD® (Super Stream Duct®), SURF-BULB® (Rudder Fin with Bulb) and ALV-Fin® (Advanced Low Viscous Resistance Fin).
4. The unique bow shape, called the Ax-Bow® gives better performance in wave and low wind resistance accommodation house has lower wind resistance.
5. The vessel's fuel oil consumption was further improved by electronically controlled marine diesel engine, and a high efficiency propeller.
6. To ensure safety and maintenance, the IMO Performance Standard for Protective Coatings (PSPC) is applied for the cargo oil tanks and ballast water tanks.

PRINCIPAL PARTICULARS

Length (o.a.)	274.3 m
Breadth (mld.)	48.00 m
Depth (mld.)	23.15 m
Draft (mld.)	17.00 m
Gross tonnage	82,602
Deadweight	159,159 t
Main engine	MAN B&W 7S65ME-C8.5
Speed (service)	14.65 knots
Complement	28
Classification	LR
Builder	Japan Marine United Corporation



DREAM CLOVER 211,000 DWT Bulk Carrier 39

Japan Marine United Corporation

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DREAM CLOVER 211,000 DWT Bulk Carrier 39

Japan Marine United Corporation (JMU) delivered "DREAM CLOVER", the first J-Series 211,000 DWT Bulk Carrier at the Tsu Shipyard on July 28, 2021.

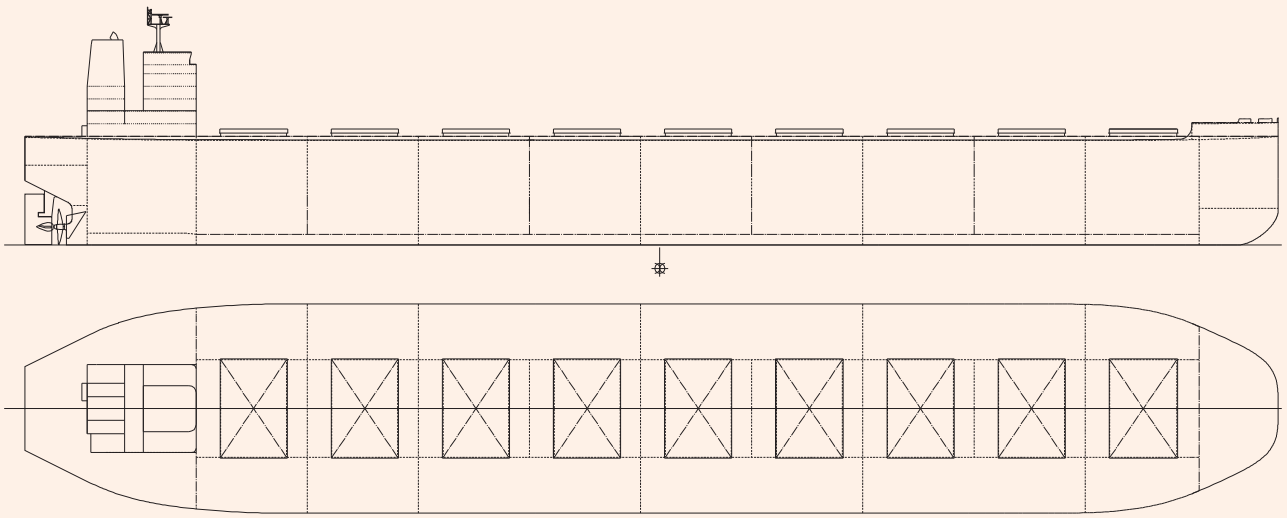
Features

1 This is the newly developed Newcastlemax bulk carrier called J211BC, which features both economical and environmental friendly design.

2. The J211BC conforms with MARPOL ANNEX VI NOx Tier III and SOx emission regulations as well as CSR BC&OT (Common Structural Rules for Bulk Carriers and Oil Tankers). These regulations/rules require shipbuilders to achieve more environmental friendly and secure hull structure designs. On the other hand, these requirements have negative impacts in economical design such as decreases in cargo hold capacity and deadweight, and increase in fuel oil consumption. However, JMU has overcome these negative impacts in design based on the latest JMU technology, and achieved more cargo capacity, deadweight, and lower fuel consumption, compared with the previous Newcastlemax bulk carrier series called G209BC, and the J211BC is so improved as to be categorized as Phase 2 of EEDI.
3. The J211BC has larger deadweight and cargo hold capacity suitable for bulk coal and iron ore in the nine cargo holds, achieved by JMU's expertise and vast experience.
4. The SSD® (Super Stream Duct®) and SURF-BULB® (Rudder Fin with Bulb) equipped fore and aft of the propeller, respectively, greatly improve the propulsion performance. The ALV-Fin® (Advanced Low Viscous Resistance Fin) equipped fore of the propeller controls stern water flow to gain better propulsive efficiency. Furthermore, a unique bow shape, LEADGE-Bow®, can reduce the added resistance due to waves, and the well-refined shape of the superstructure can attain low wind resistance. This vessel is also equipped with a SOx scrubber to comply with MARPOL ANNEX VI Regulation 14.
5. In addition, corrosion resistant steel (JFE-SIP®-CC) developed by JFE Steel Corporation was adopted for parts of the outer shell, cargo hold frame and inner bottom shell.
6. The DREAM CLOVER has obtained the DSS (HM (F+LS, O)) notation for hull monitoring and DSS (EE) notation for energy efficiency analysis function.

PRINCIPAL PARTICULARS

Length (o.a.)	299.99 m
Breadth (mld.)	50.00 m
Depth (mld.)	25.00 m
Draft (mld.)	18.40 m
Gross tonnage	108,903
Deadweight	212,078 t
Main engine	MAN-B&W 7S65ME-C8.5-HPSCR
Speed (service)	14.50knots
Complement	25
Classification	NK
Builder	Japan Marine United Corporation



KAURI 181,000 DWT Bulk Carrier 40

Japan Marine United Corporation

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KAURI 181,000 DWT Bulk Carrier 40

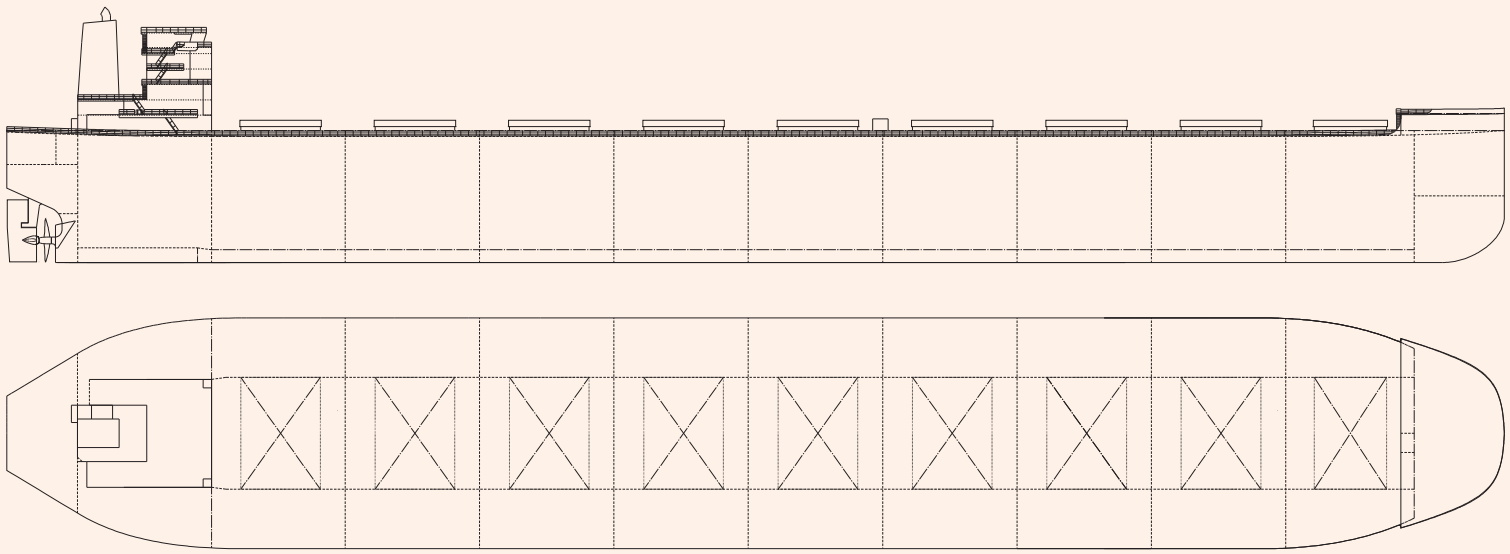
Japan Marine United Corporation (JMU) delivered KAURI, the 181,000 DWT Bulk Carrier at the Ariake Shipyard on September 22, 2021.

Features

1. This is the 2nd vessel of newly developed Dunkirkmax bulk carrier of G-Series, called G181BC, which is successful in both economical and environmental friendly design. .
2. This G181BC conforms with MARPOL ANNEX VI NOx Tier III regulations as well as CSR BC&OT (Common Structural Rules for Bulk Carriers and Oil Tankers).
3. The Vessel has larger deadweight and cargo hold capacity suitable for bulk coal and iron ore in its nine cargo holds, achieved by JMU's expertise and vast experience.
4. SSD® (Super Stream Duct®) and SURF-BULB® (Rudder Fin with Bulb) equipped fore and aft of the propeller, respectively, greatly improve the propulsion performance. ALV-Fin® (Advanced Low Viscous Resistance Fin) equipped fore of its propeller controls stern flow to gain better propulsive efficiency.
5. Furthermore, a unique bow shape, LEADGE-Bow®, can reduce the added resistance due to waves, and the well-refined shape of the superstructure can attain low wind resistance. This vessel is also equipped with a SOx scrubber to comply with MARPOL ANNEX VI Regulation 14.

PRINCIPAL PARTICULARS

Length (o.a.)	292.00 m
Breadth (mld.)	45.00 m
Depth (mld.)	24.55 m
Draft (mld.)	18.20 m
Gross tonnage	93,298
Deadweight	182,327 t
Main engine	MAN-B&W 7S65ME-C8.5-HPSCR
Speed (service)	15.05 knots
Complement	25
Classification	NK
Builder	Japan Marine United Corporation



SAKIZAYA VICTORY 82,400 DWT Bulk Carrier

Japan Marine United Corporation

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SAKIZAYA VICTORY 82,400 DWT Bulk Carrier 55

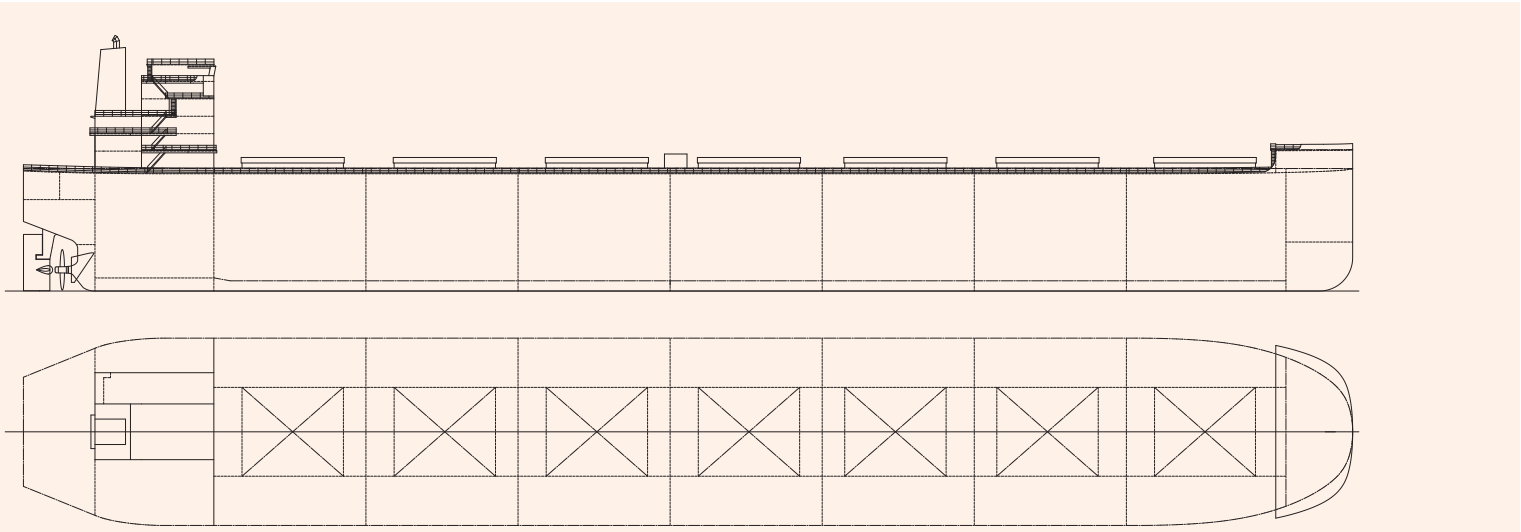
Japan Marine United Corporation (JMU) delivered the J-Series 82,400 DWT bulk carrier "SAKIZAYA VICTORY" at Maizuru Shipyard on May 26, 2021.

Features

1. This is the sixth vessel of Panamax bulk carrier of J-Series, called J82BC, which is successful in both economical and environmental friendly design.
2. This J-Series is applied with MARPOL ANNEX VI NOx Tier III and SOx emission regulation, in addition to CSR BC&OT (Common Structural Rules for Bulk Carriers and Oil Tankers).
   These regulations/rules make the ship environmental friendly and more secure in hull structure. On the other hand, these have negative impacts in economical design as decrease of cargo hold capacity, deadweight and increase of fuel oil consumption.
   However, using the latest JMU technology, JMU has overcome these negative impacts in design and achieved more cargo capacity, deadweight and lower fuel consumption, compared with the previous series called G81BC which is categorized as Phase 1 of Energy Efficiency Design Index (EEDI). J82BC is so improved as to be categorized as Phase 2 of EEDI.
3. J82BC has larger deadweight and cargo hold capacity suitable for carrying grain, bulk coal and iron ore in its 7 cargo holds, and has been developed with expertise and vast experience.
4. SSD® (Super Stream Duct®) and SURF-BULB® (Rudder Fin with Bulb) equipped fore and aft of its propeller, respectively, much improve the propulsion performance. In addition, ALV-Fin® (Advanced Low Viscous Resistance Fin) equipped fore of its propeller controls stern flow to get better propulsive efficiency. Furthermore, well-refined shape of superstructure can attains low wind resistance.

PRINCIPAL PARTICULARS

Length (o.a.)	229.0 m
Breadth (mld.)	32.26 m
Depth (mld.)	20.20 m
Draft (mld.)	14.55 m
Gross tonnage	44,317
Deadweight	82,418 t
Main engine	MAN B&W 6S60ME-C8.5-EGRBP
Speed (service)	14.5 knots
Complement	25
Classification	DNV
Builder	Japan Marine United Corporation



ARVIK I 31,000 DWT High Ice Class Bulk Carrier 70

Japan Marine United Corporation

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ARVIK I 31,000 DWT High Ice Class Bulk Carrier 70

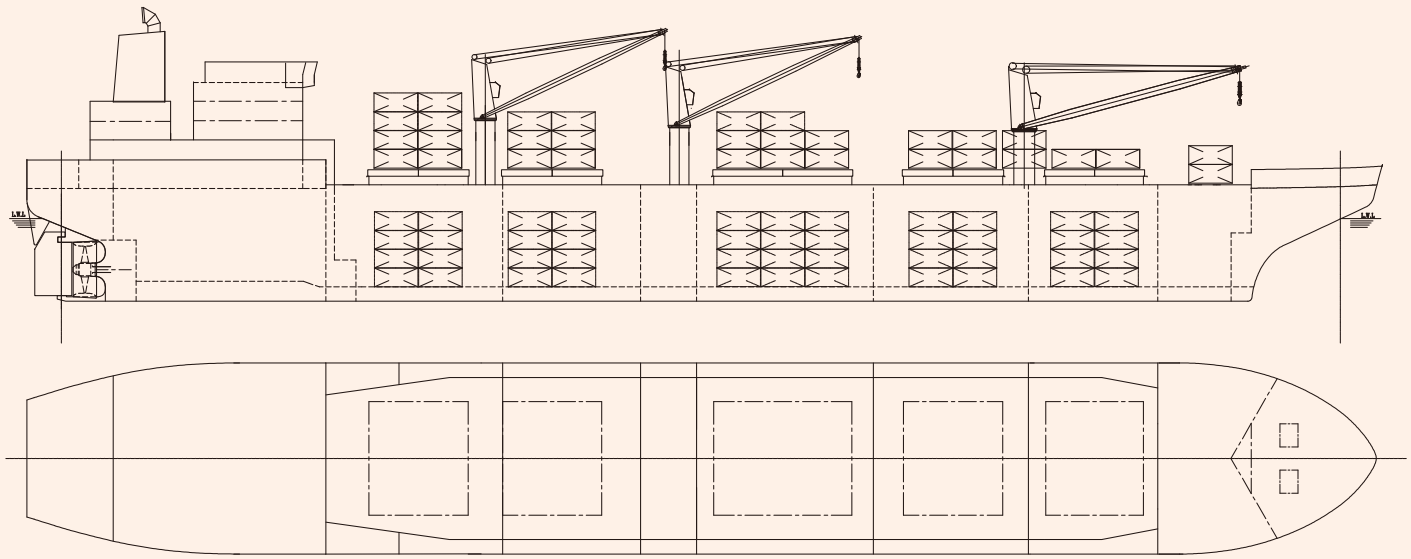
Japan Marine United Corporation (JMU) delivered the 31,000 DWT high ice class bulk carrier, “ARVIK I” at Isogo Works of Yokohama Shipyard on March 29, 2021.

Features

1. ARVIK I is one of the world’s largest ice-breaking bulk carriers, which is the sister vessel of "UMIAK I" delivered at Maizuru Shipyard in 2006 and "NUNAVIK" delivered at Tsu Shipyard in 2014.
2. This vessel is engaged in carrying nickel concentrates shipped from port of Deception Bay located in Northern Quebec, Canada. In order to carry supplies to the mine, this vessel is also capable for loading of containers, equipment, vehicles and two grades of fuel oils in separate cargo oil tanks.
3. This vessel is designed to conform with International Code for Ships Operating in Polar Waters (Polar Code) and has DNV notations of “PC-4”.
4. This vessel has continuous icebreaking capability to sail on 1.5 meter thickness ice and the vessel is equipped with ice breaking bow, ducted propeller and ice knife in the stern.
5. In order to comply with IMO NOx Tier III regulations, this vessel is equipped with EGR for main engine and SCR for auxiliary engines.
6. Combination of an electronically controlled low-speed diesel engine and a ducted controllable pitch propeller is unique as icebreaker and is effective in both open water and ice covered water.

PRINCIPAL PARTICULARS

Length (o.a.)	188.80 m
Breadth (mld.)	26.60 m
Depth (mld.)	15.70 m
Draft (mld.)	11.71 m
Gross tonnage	22,615
Deadweight	31,279 t
Main engine	MAN B&W 7S70ME-C8.5-EGRBP
Speed (service)	13.5 knots
Complement	30
Classification	DNV
Builder	Japan Marine United Corporation



NSU BRAZIL 400,000 DWT Ore Carrier 82

Japan Marine United Corporation

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NSU BRAZIL 400,000 DWT Ore Carrier 82

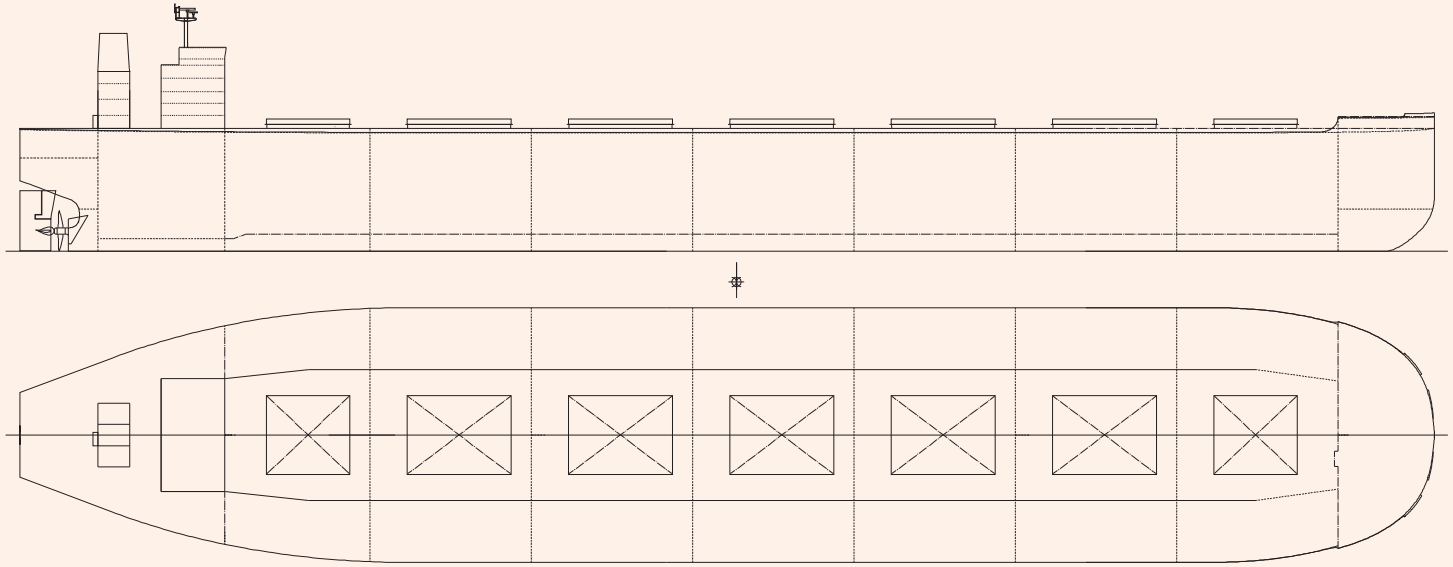
Japan Marine United Corporation has delivered "NSU BRAZIL", 400,000 DWT Ore Carrier at Ariake Shipyard on December 2, 2020.

Features

1. This is the third vessel of the first 400,000 DWT ore carrier (Valemax) series built in Japan.
2. Principal particulars have been optimized for transportation for Brazilian iron ore by using the various technology and the latest design know how developed through JMU's extensive experiment in building large size bulk carriers.
3. High propulsion performance was achieved by the application of lower resistance and high efficiency hull form. In addition, The SSD® (Super Stream Duct®) and SURF-BULB® (Rudder Fin with Bulb) equipped fore and aft of the propeller, respectively, greatly improve the propulsion performance.
4. Furthermore, well-refined shape of the superstructure, which complies with IMO "Code on noise levels on board ships", can attain low wind resistance.
5. The fuel oil consumption was much improved by the application of new electronically controlled engine, low friction paint and large diameter propeller.
6. The vessel is also equipped with a SOx scrubber to comply with MARPOL ANNEX VI Regulation 14. All these features ensure the vessel's effectiveness in energy-saving and environmental friendly performance.

PRINCIPAL PARTICULARS

Length (o.a.)	361.0 m	Gross tonnage	197,453
Breadth (mld.)	65.0 m	Deadweight	399,821 t
Depth (mld.)	30.2 m	Classification	NK
Draft (mld.)	23.0 m	Builder	Japan Marine United Corporation



WAN HAI 329 3,055 TEU Containership 94

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WAN HAI 329 3,055 TEU Containership 94

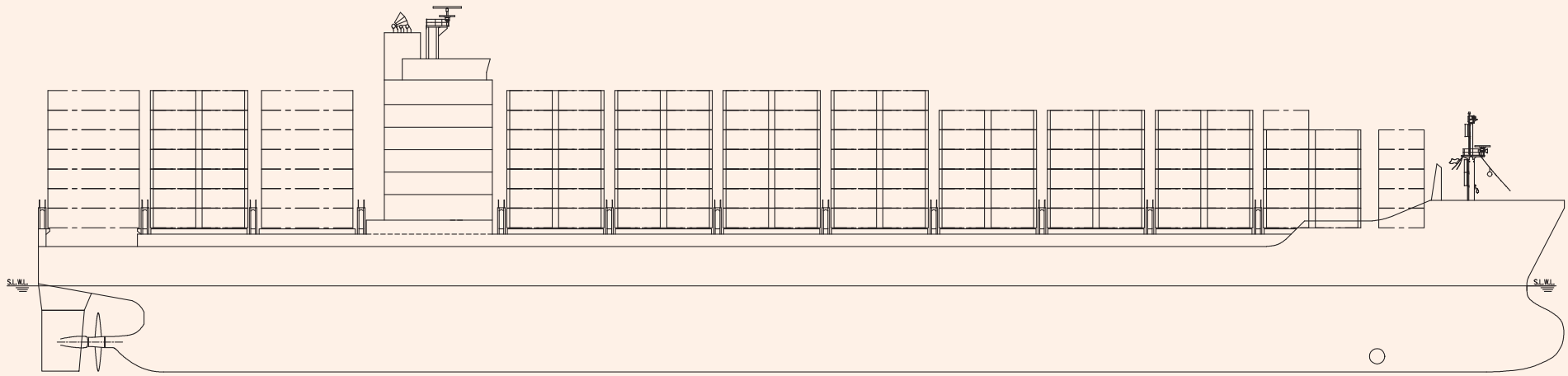
Japan Marine United Corporation (JMU) delivered the 3,055 TEU container ship, "WAN HAI 329" at Kure Shipyard on May 28, 2021.

Features

1. This is the 8th vessel of 3,055 TEU-capaciy container ship constructed by JMU. The vessel can load containers in 12 rows across and 6 tiers high in the cargo hold, and 14 rows across and 7 tiers high on the deck, with the total of 3,055 TEUs.
2. The vessel is optimally designed for medium to long distance trade in consideration that the amount of seaborne trade to and from Asia and within Asia is increasing, and achieves significantly improved environmental and operational performance compared with conventional vessels, with both high loading capacity and high navigation performance by using JMU's latest technology.
3. The vessel achieves high propulsion efficiency through its advanced lower resistance hull form and JMU's original energy saving devices such as ALV-Fin® (Advanced Low Viscous resistance Fin) and LV-fin (Low Viscous resistance Fin).
4. MAN-B&W's latest electronically controlled main engine, Mark 10.5 and inverter controlled cooling sea water pump reduce the fuel oil consumption.
5. Safety and convenience for steering during voyage and reaching/leaving the pier are improved by adopting the INS (Integrated Navigation System) and full enclosed navigation bridge.
   Voyage assistance and monitoring of the engine room by CCTV camera system improves safety.

PRINCIPAL PARTICULARS

Length (o.a.)	203.50 m
Breadth (mld.)	34.80 m
Depth (mld.)	16.60 m
Draft (mld.)	11.50 m
Gross tonnage	30,468
Deadweight	37,160 t
Main engine	MAN-B&W 7S70ME-C10.5
Speed (max. trial)	21.60 knots
Complement	25
Classification	ABS
Builder	Japan Marine United Corporation



NSY, 23 partners join in council to talk ammonia, highly anticipated next-generation marine fuel 122

To achieve IMO-mandated decarbonization goals, parties from various industries—energy, mining, electricity, chemicals, marine terminals, shipping, shipbuilding, manufacturing, marine fuel supplying and classification societies—have come together to discuss the common challenges seen in handling ammonia, which they hope will be used as next-generation marine fuel.

Nihon Shipyard Co., Ltd. (NSY), a sales and design joint venture established through a business and capital collaboration between Imabari Shipbuilding Co., Ltd. and Japan Marine United Corporation (JMU), began operation in January 2021.

NSY has a staff of about 500 employees in sales and design from its parent companies. Its headquarters is in Chiyoda Ward, Tokyo, with five offices in Yokohama City, Kanagawa Prefecture; Marugame City, Kagawa Prefecture; and Imabari City, Ehime Prefecture. The new company is engaged in sales, design and other relevant business activities for all types of general commercial vessels except LNG carriers and marine floating structures. Its activities include marketing; planning and development; research; contract bids and signings; and designing basics and functions for merchant vessels. Business procedures following function designs are handed over to Imabari Shipbuilding and JMU, which continue with details and the construction and delivery of completed ships.

As an example of NSY's forte in planning and development as well as research and development, the company has signed a memorandum of understanding (MoU) and set up a dedicated council with 23 partners. In pursuing the use of ammonia as a marine fuel, the members will discuss how to address the common challenges that they face on inter-industrial scale.

The 23 members joining NSY are, from Japan: Itochu Corporation; Itochu ENEX Co., Ltd.; JERA Co., Inc.; Kawasaki Kisen Kaisha, Ltd.; Mitsui E&S Machinery Co., Ltd.; Nippon Kaiji Kyokai (ClassNK); NS United Kaiun Kaisha, Ltd.; Ube Industries, Ltd; and Uyeno Transtech Ltd.; and from overseas: the American Bureau of Shipping (ABS); Anglo American plc; DNV AS; Equinor ASA; Fortescue Metals Group Ltd.; Genco Shipping and Trading Ltd.; MAN Energy Solutions SE; Pavilion Energy Pte. Ltd.; TotalEnergies SE; Trafigura Group Pte. Ltd.; Uniper SE; VALE S.A.; and Vopak Terminals Singapore Pte. Ltd.

The council will gather to discuss the following common challenges: 1) the safety of ammonia-fueled vessels, 2) the safety of supplying ammonia fuel, 3) the specification of ammonia as marine fuel, and 4) the net CO_2 emissions from ammonia production. To study these subjects in greater depth, the council is considering asking ammonia producers, relevant international organizations as well as the port and harbor administrators and authorities of countries and regions that are likely to be ammonia marine fuel suppliers for their opinions, points of view, expertise and experience.

Since the Paris Agreement of 2016, momentum has gained across the globe for decarbonization. In the shipping industry, in that time, the International Maritime Organization (IMO) adopted a strategy in 2018 on the reduction of GHG emissions. The organization is now calling for the curtailment of CO_2 emissions per transport work by at least 40% from 2008 levels by 2030 and overall CO_2 emissions by at least 50% by 2050. The IMO is also recommending that GHG emissions be phased out (to accomplish zero emissions) as soon as possible within this century. To clear such targets, it is important to implement ammonia marine fuel in society, a highly promising energy resource toward realizing a zero GHG emission target.

NSY will continue in the years to come to make the most of technologies to reduce its burden on the natural environment and to contribute to building a sustainable society through the provision of eco-friendly ships.