

About the vessel

The MMA Harmony is of STX 09 CD PSV design, which was developed by STX Europe in 2009 after two years of extensive research and development.

The hull was specially designed to reduce resistance and improve performance in all weather conditions. Fuel consumption is reduced by minimising the additional resistance generated by waves. Flare has been reduced in the upper part of the bow for cutting through large waves.

The area above the bulb is uniquely designed to reduce resistance in small or medium waves. The underwater lines are optimised for calm seas. The vessel will consume less fuel, which reduces harmful emissions to the environment.

Selective catalytic reduction (SCR) system equipped in the ship helps to reduce nitrogen oxide and sulphur oxide emissions.

The vessel has DNV-GL CLEAN DESIGN class notation which has more stringent levels for emissions to the air and discharges to the sea than what either the International Maritime Organization or most flag states require. The CLEAN DESIGN notation must comply with additional requirements, including design requirements for avoiding and limiting the consequences from accidents.

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MMA Harmony

Platform Supply Vessel

Principal Particulars

Official No	399715	LOA	87.9 m
Call Sign	9V3034	Length Waterline	79.38 m
IMO No	9647801	Breadth - moulded	19 m
Port of Registry	Singapore	Depth - moulded	8 m
Flag	Singapore	Draft	5.9 m
Class / Notation	ABS A1, Fire Fighting Vessel Class 1, Offshore Support Vessels, DPS-2, Oil Recovery Vessel Class 1, AMS, ACC, IHM, HAB9WB), ENVIRO, HLC, NBLES. LFL(*), SF, DK(+)	GRT	3,921 T
		NRT	1,666 T
		MMSI	566280000
		INMARSAT C	456628010 / 456628011
Registered Owner	Harmony PSV Pte Ltd	Design	STX PSV 09 CD
Builder/Hull No.	PT. ASL Shipyard Indonesia/H1048	Delivery/Class Entry	28 January 2016

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Cargo Capacities		Dry Bulk Plant		AUX Machinery / System		Dynamic Positioning System	
Deadweight	4,700 MT @ 6.60m	Bulk Tank	6 tanks, Total Capacity – 318m³ (11,230 cu.ft)	Roll-Damping System	3 x passive roll reduction tanks	Maker	Kongsberg K-Pos 21
Lightship	2991 MT @ 3.29m	Compressors	Atlas Copco, 2 x 24m³/min @ 6 bar	Liquid Mud Tank Agitator	8 x Submerged, Hydraulic-driven	Gyro	3 x Anschütz STD 22
Deck Cargo	2,600 MT approx.	Refrigerated Dryer	2 x Parker Dominick Hunter	Mud Tank Washing	8 x Washing Machines with Hot-Water	Wind Sensor	3 x Gill WindObserver II Ultrasonic
Deck Strength	10t/m² aft of Fr.30, 5t/m² fwd of Fr.30	Dust Cyclones	2 x Randaberg	Alarm/Monitoring/Cargo Tank Sounding Sensor	STX OSV Electro A/S. IAS Damcos/Klay/Vega	Motion Response Unit	3 x Nautica - Piro-25Da
Clear Deck Area	Approx. 1,000 (approx. 62.0m x 16.1m)	Dust Collector Tanks	2 x Randaberg	Oily Water Separator	1 x RWO SKIT / S – DEB 2.5m³/hr	DGPS 1	1 x Kongsberg Seatex DPS 110 (DGPS)
Ballast/Drill Water	2,563	Loading/Discharge	2 x segregated systems	Sanitary Discharge	2 x JETS 25MBA Vacuumator	DGPS 2	1 x Seatex DPS 112 (DGPS/DGLONASS)
Fuel Oil	1,203	Estimated Speed & Consumption*		Sewage Treatment Plant	1 x DVZ Services SKA30 Biomaster Plus	DP Laser Sensor	1 x Guidance Navigation Cyscan MK 4
Potable Water	808	Maximum Speed	4 x engines @14kts, 23 – 25m³ / 24hrs	Waste Handling	1 x Delitek Greenship DT-200	HPR Trunk	1 x Bottom-mounted 500mm diameter with Sluice Valve, suitable for Kongsberg HiPAP
Liquid Mud/Brine	967 (SG2.8) in 8 tanks	Cruising Speed	3 x engines @ 10kts, 11 – 13m³ / 24hrs	Incinerator	1 x TeamTec OG200CS, 465 kW	Deck Equipment	
Base Oil	403 in 4 tanks	Econ Speed	2 x engines @ 7kts, 8 – 10m³ / 24hrs	Ballast Water Treatment	1 x Optimarine, 250m³/hr, MEPC 174(58)	Windlass/Mooring Winch	2 x Adria, Frequency-controlled, Windlass: 10T Pull / Mooring: 3.9 – 9.6T Pull, Drum: 170m of 50mm diameter wire
Methanol	161 in 2 tanks	Harbour	1 x engine @ 3.2m³ / 24 hrs	NOx Reduction System	4 x Johnson Matthey SINOx SCR	Capstan	2 x Adria, Frequency-controlled, 8T Pull, 12T Brake
ORO	707 in 6 tanks	Machinery / Propulsion		CCTV System	3 x Seahawk SH60C Camera, Display & Recorder	Tugger	2 x Adria, Frequency-controlled, Pull/Brake: 10T/15T, Drum: 275m of 20mm diameter wire
Cargo Pump Capacities		Main Alternator Engine	4 x CAT 3512TA (C), 1550 KW @ 1800 rpm	Cargo Fuel Flowmeter	1 x Satam ZC-17 18/20, Positive Displacement	Starboard Provision Crane	1 x TTS GPT 40-1-10 Fixed Boom, 1T @10m
Fuel Oil Cargo	2 x 250m³/hr @ 90m head Centrifugal, Electric, 2 Speed	Main Alternator	4 x AVK, 1772 kVA, 690 V, 60 Hz	Potable Water Flowmeter	1 x Siemens Sitrans FM MAG5100W	Port Provision Crane	1 x TTS GPT 115-5-10 Fixed Boom, 5T @10m
Fresh Water Pump	2 x 250m³/hr @ 90m head Positive Displacement, Frequency controlled	Frequency Converter	Converteam MV3000 Active Front End	MGO Separator	1 x GEA Westfalia OSE5-91-037/5, 1900 l/hr	Anchor	2 x M Spek, 3450kg Each
Liquid Mud/ORO	2 x 100m³/hr @ 24 bar Positive Displacement, Hydraulic	Main Azimuth Propulsion	2 x Schottel, 2500 KW, Twin Propeller	High Pressure Washer	2 x NILFISK Solar Booster, 25 bar, 18.5 l/min	Anchor Chain	552m Total, 46mm diameter K3
Brine Pump	1 x 100m³/hr @ 75m head Centrifugal, Electric, 2 Speed	Emergency Generator	1 x Perkins, 118 KW, 1800 rpm				
Base Oil Pump	1 x 100m³/hr @ 90m head Centrifugal, Electric, 2 Speed	Side Thrusters					
Ballast/Drill Water Pump	2 x 250m³/hr @ 90m head Positive Displacement Screw, Hydraulic	Forward Tunnel Thrusters	2 x Brunvoll, 880 KW, approx. 12 MT thrust				
Methanol Pump	2 x 75m³/hr @ 90 m head Submerged Centrifugal, Hydraulic						

TRANSFORMING THE WAY MARINE SERVICES ARE DELIVERED

* Vessel speeds and consumptions are estimates only, actual speeds and consumptions are subjected to prevailing environmental conditions that affect them.

Note - vessels can be modified to meet specific charter requirements. MMA encourages clients to contact the vessel operations team to confirm vessel particulars are accurate.

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Navigation Equipment	
X-band ARPA Radar (9GHz)	1 x Furuno FAR-2137SBB
S-band ARPA Radar (3GHz)	1 x Furuno FAR-2117S
GPS Navigator	2 x Furuno GP-150
ECDIS	2 x Telco TECDIS
Autopilot	1 x Anschutz Pilotstar D System
Magnetic Compass	1 x Cassen & Plath Reflecta 11
Echo Sounder	1 x Furuno FE-700
Speed Log	1 x Furuno DS-80 Doppler
BNWAS	VARD Electro AS SeaQ BAM

Communications	
Inmarsat-C	2 x Furuno FELCOM 15
MF/HF	1 x Furuno FS-2575C
Fixed VHF	2 x Furuno FM-8900S
Portable VHF	3 x Jotron Tron TR20
Fixed UHF	2 x Motorola GM380
Portable UHF	6 x Motorola GP340 Ex 403
Fleet Broadband	1 x FELCOM 250
SSAS	1 x Furuno IC 307
NAVTEX	1 x Furuno NX-700A
AIS	1 x Furuno FA-150
VDR	1 x Furuno VR 3000
EPIRB	2 x Jotron Tron 60S
SART	2 x Jotron Tron SART 20
Internal Communications	1 x Vingtor VSP Batteryless Telephone, 1 x Vingtor SPA-M1H Loudhailing System, 1 x Vingtor ACM-AlphaCom Integrated, Telephone/Intercom/PA/GA System
	TV-AM-FM Antenna
	1 x Naval Mark 32 ALC
LAN Connections	All cabins and offices

Fire Protection / Fighting Equipment	
FiFi 1 Pumps	2 x Sulzer SFP 250 x 350 HD CCW, Each 1730m³/hr @130m Head
FiFi 1 Monitors	2 x FFS1200LB, Each 1200m³/hr, Throw Length / Height - 120m / 50m
CO2 Protection System	Unitor (Engine, HPU & Incinerator Rooms)
Water Mist	Unitor Fixed Local Fire Fighting System
Deck Fixed Foam System	Tyco FJM-100 Fog/Jet Monitor (LFL Tanks)
Nitrogen System for LFL	20 x 50 litres each Unitor N2 Bottles
Emergency Fire Pump	1 x Centrifugal, 33 m³/hr, 60 m head
Fire Detection and Alarm	1 x Unitor T1216 16 Zone Fire Detection Unit
Fixed Gas Detection System	1 x Crowcon Triple Plus

Safety Equipment	
Fast Rescue Boat	1 x Noreq FRB-650, 15 person, 156 kW, Inboard Diesel Engine, Waterjet Propulsion, 28 knots
Rescue Boat Davit	Harding NPDS 3500H, 3.5 T SWL
Life Rafts	6 x Viking 16DK+, Capacity - 16 persons
Lifebuoys	8
Lifejackets	32 x Viking-275
Immersion Suits	32 x Viking-P5200

Cargo Hose Connections	
Fuel Oil	5" Weco Fig 206 (1PA, 1PM, 1SM)
Drill Water	5" Weco Fig 206 (1PM, 1SA, 1SM)
Potable Water	4" Anson Fig 206 (1PM, 1SA, 1SM)
Dry Bulk	5" Anson Fig 50 (1PA, 2PM, 2SM)
Liquid Mud	5" Anson Fig 50 (1PA, 1PM, 1SM)
Brine	5" Anson Fig 50 (1PA, 1PM, 1SM)
Base Oil	5" Anson Fig 50 (1PM, 1SA, 1SM)
Methanol	4" Mann Tek NPT SBC (1SM)
ORO	6" Anson Fig 206 (1SA, 1SM)
Location	PA - Port Aft, PM - Port Midship, SA - Starboard Aft, SM - Starboard Midship

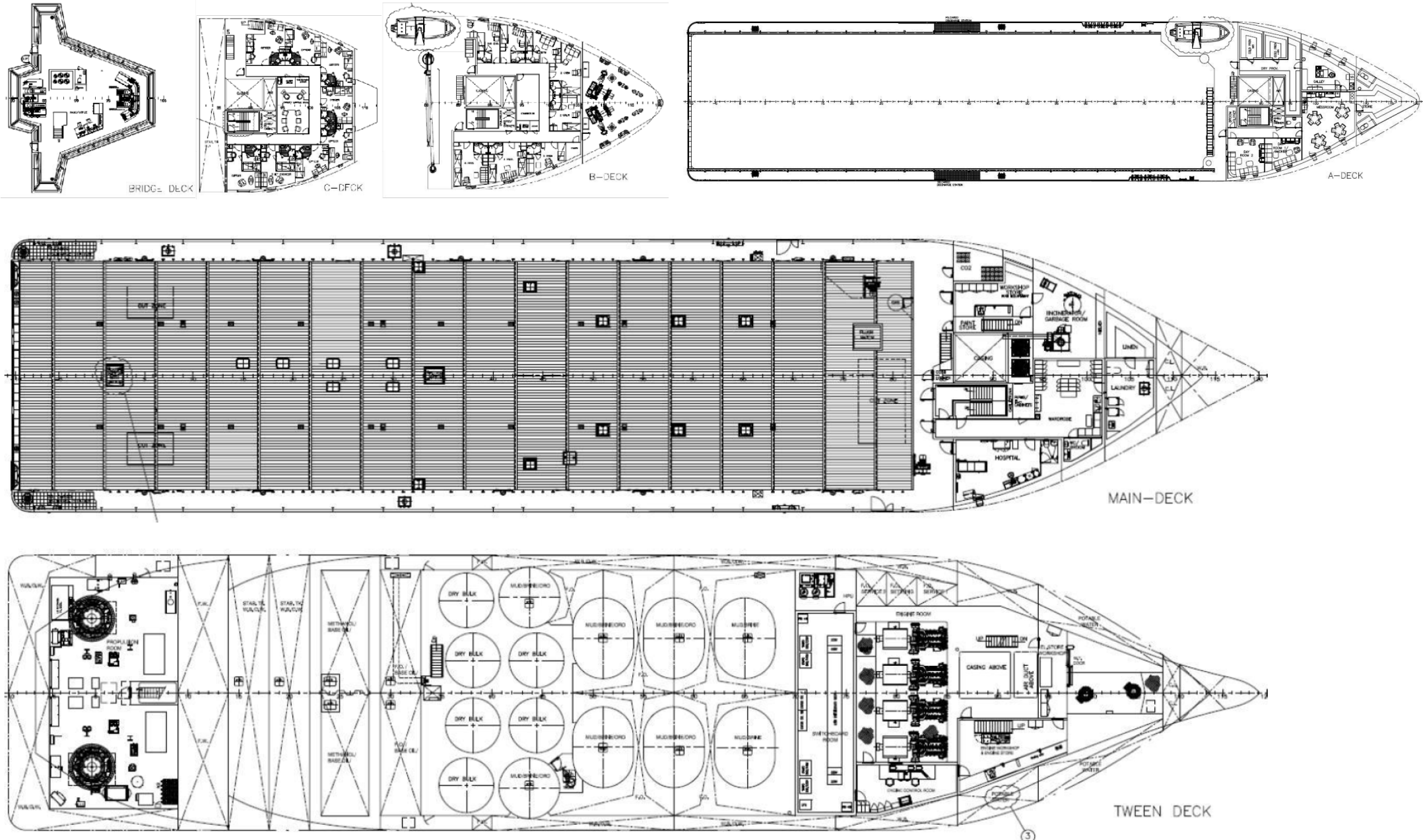
Accommodation	
Berths	10 x One (1) berth cabins 10 Men 04 x Two (2) berth cabins 08 Men 02 x Four (4) berth cabins 08 Men Total 26 Men
Sick Bay	1x bed with well-equipped facilities
Air-Conditioning System	Chilled-Water System with Redundant AHU, Compressor & Chilled Water Pump

Other Facilities	
Day Room	2 x Dayrooms (1 Equipped for Smoking)
Mess Room	1 x 20 Person Seating Capacity
Offices	1 x Client Office
Meeting Room	1 x Meeting Room integrated with Client
Gymnasium	1 Provided
Workshop	1 x Steel workbench, 2 x 400A welding transformer, 1x Eye wash station
Laundry Room	2 x 6.5kg washers and 2 x 6.5kg dryers
Changing Room	18 lockers
Waste Handling	Room for Garbage Compactor & Incinerator
Freezer	12.6m³, Minus 18°C
Chiller	16.2m³, 4°C

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