



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		
Deadweight		4,700 MT @ 6.60m
Lightship		2991 MT @ 3.29m
Deck Cargo		2,600 MT approx.
Deck Strength	mt/m ²	10t/m ² aft of Fr.30, 5t/m ² fwd of Fr.30
Clear Deck Area	m ³	Approx. 1,000 (approx. 62.0m x 16.1m)
Ballast/Drill Water	m ³	2,563
Fuel Oil	m ³	1,203
Potable Water	m ³	808
Liquid Mud/Brine	m ³	967 (SG2.8) in 8 tanks
Base Oil	m ³	403 in 4 tanks
Methanol	m ³	161 in 2 tanks
ORO	m ³	707 in 6 tanks

Cargo Pump Capacities		
Fuel Oil Cargo		2 x 250m ³ /hr @ 90m head Centrifugal, Electric, 2 Speed
Fresh Water Pump		2 x 250m ³ /hr @ 90m head Positive Displacement, Frequency controlled
Liquid Mud/ORO		2 x 100m ³ /hr @ 24 bar Positive Displacement, Hydraulic
Brine Pump		1 x 100m ³ /hr @ 75m head Centrifugal, Electric, 2 Speed
Base Oil Pump		1 x 100m ³ /hr @ 90m head Centrifugal, Electric, 2 Speed
Ballast/Drill Water Pump		2 x 250m ³ /hr @ 90m head Positive Displacement Screw, Hydraulic
Methanol Pump		2 x 75m ³ /hr @ 90 m head Submerged Centrifugal, Hydraulic

Dry Bulk Plant		
Bulk Tank		6 tanks, Total Capacity – 318m ³ (11,230 cu.ft)
Compressors		Atlas Copco, 2 x 24m ³ /min @ 6 bar
Refrigerated Dryer	2 x Parker Dominick Hunter	
Dust Cyclones	2 x Randaberg	
Dust Collector Tanks	2 x Randaberg	
Loading/Discharge	2 x segregated systems	

Estimated Speed & Consumption*		
Maximum Speed		4 x engines @ 14kts, 23 – 25m ³ / 24hrs
Cruising Speed		3 x engines @ 10kts, 11 – 13m ³ / 24hrs
Econ Speed		2 x engines @ 7kts, 8 – 10m ³ / 24hrs
Harbour		1 x engine @ 3.2m ³ / 24 hrs

Machinery / Propulsion		
Main Alternator Engine		4 x CAT 3512TA (C), 1550 KW @ 1800 rpm
Main Alternator		4 x AVK, 1772 kVA, 690 V, 60 Hz
Frequency Converter		Converteam MV3000 Active Front End
Main Azimuth Propulsion		2 x Schottel, 2500 KW, Twin Propeller
Emergency Generator		1 x Perkins, 118 KW, 1800 rpm

Side Thrusters		
Forward Tunnel Thrusters		2 x Brunvoll, 880 KW, approx. 12 MT thrust

AUX Machinery / System		
Roll-Damping System		3 x passive roll reduction tanks
Liquid Mud Tank Agitator		8 x Submerged, Hydraulic-driven
Mud Tank Washing		8 x Washing Machines with Hot-Water
Alarm/Monitoring/Cargo Tank Sounding Sensor		STX OSV Electro A/S. IAS Damcos/Klay/Vega
Oily Water Separator		1 x RWO SKIT / S – DEB 2.5m ³ /hr
Sanitary Discharge		2 x JETS 25MBA Vacuumator
Sewage Treatment Plant		1 x DVZ Services SKA30 Biomaster Plus
Waste Handling		1 x Delitek Greenship DT-200
Incinerator		1 x TeamTec OG200CS, 465 kW
Ballast Water Treatment		1 x Optimarine, 250m ³ /hr, MEPC 174(58)
NOx Reduction System		4 x Johnson Matthey SINOx SCR
CCTV System		3 x Seahawk SH60C Camera, Display & Recorder
Cargo Fuel Flowmeter		1 x Satam ZC-17 18/20, Positive Displacement
Potable Water Flowmeter		1 x Siemens Sitrans FM MAG5100W
MGO Separator		1 x GEA Westfalia OSE5-91-037/5, 1900 l/hr
High Pressure Washer		2 x NILFISK Solar Booster, 25 bar, 18.5 l/min

Dynamic Positioning System		
Maker Gyro		Kongsberg K-Pos 21 3 x Anschütz STD 22
Wind Sensor		3 x Gill WindObserver II Ultrasonic
Motion Response Unit		3 x Nautica - Piro-25Da
DGPS 1		1 x Kongsberg Seatex DPS 110 (DGPS)
DGPS 2		1 x Seatex DPS 112 (DGPS/DGLONASS)
DP Laser Sensor		1 x Guidance Navigation Cyscan MK 4
HPR Trunk		1 x Bottom-mounted 500mm diameter with Sluice Valve, suitable for Kongsberg HiPAP

Deck Equipment		
Windlass/Mooring Winch		2 x Adria, Frequency-controlled, Windlass: 10T Pull / Mooring: 3.9 – 9.6T Pull, Drum: 170m of 50mm diameter wire
Capstan		2 x Adria, Frequency-controlled, 8T Pull, 12T Brake
Tugger		2 x Adria, Frequency-controlled, Pull/Brake: 10T/15T, Drum: 275m of 20mm diameter wire
Starboard Provision Crane		1 x TTS GPT 40-1-10 Fixed Boom, 1T @10m
Port Provision Crane		1 x TTS GPT 115-5-10 Fixed Boom, 5T @10m
Anchor		2 x M Spek, 3450kg Each
Anchor Chain		552m Total, 46mm diameter K3

* 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. Cyan 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

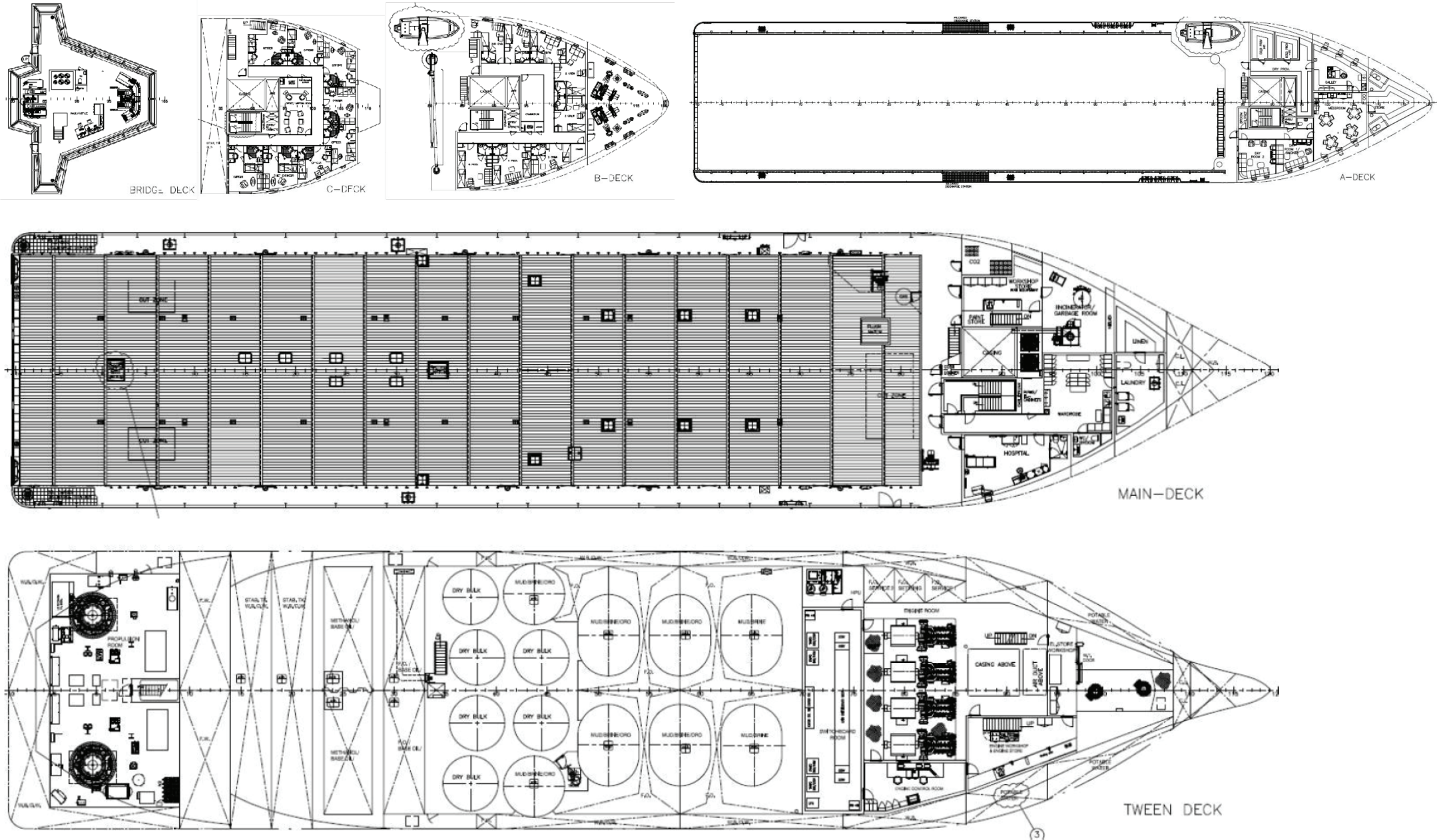
Cargo Hose Connections	
Fuel Oil	5" Weco Fig 206 (1PA, 1PM, 1SM)
Drill Water	5" Weco Fig 206 (1PM, 1SA, 1SM)
Potable Water	4" Anson Fig 206 (1PM, 1SA, 1SM)
Dry Bulk	5" Anson Fig 50 (1PA, 2PM, 2SM)
Liquid Mud	5" Anson Fig 50 (1PA, 1PM, 1SM)
Brine	5" Anson Fig 50 (1PA, 1PM, 1SM)
Base Oil	5" Anson Fig 50 (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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