



NAVNAUTIK

OUR MILESTONE PROJECTS

Our latest Special Application Ship is “LEWEK CONSTELLATION”.

Winner of “Support Vessel of the Year” at Offshore Support Journal Conference (London) 2016.



Vessel type: Ultra deep water rigid & flexible Pipe lay / Heavy Lift / DP3 Construction Vessel

Summary: Designed to deliver complex projects in a safe, efficient and reliable manner in water depths exceeding 3,000 meters, the Constellation is equipped with an 800 MT top tension multi-lay system that can support both rigid and flexible pipelines and flexibles and a 3,000 MT heavy lift crane for large platform installation or decommissioning activities. Lewek Constellation is an ice-class, DP3 vessel with a high transit speed and superior maneuverability built for worldwide services.



DOLPHIN OFFSHORE ENTERPRISES MAURITIUS (PVT.) LIMITED.

(Rogers House, 5 President John Kennedy Street Port Louis, Mauritius)
(275 MEN DP2 ACCOMODATION BARGE)



Builder	Shoft Engineering Works Pvt. Ltd	DECK EQUIPMENTS	
Class	ABS	Mooring Anchors	Eight units "Flipper Delta" type anchors minimum 6900 Kg. 8 point Mooring system.
Class Notation	ABS+1 Accomodation Barge DP2 Compliance with SPS Code 2008	Mooring Equipment	8 no. SEKWANG SKH-MW-45T 45T @0-7.5M/MIN at rated Load 20T@0-15M/MIN at rated Load Brake Holding Capacity-80T. 2 nos Electro-Hydraulic Power pack .
Flag	Mauritius	Mooring Winch	Local and Remote Control, Auto spooling system, payout indicator and Tension control with preset audio and visual alarm. CCTV for each Mooring drum with display at remote.
Official No.	MR 287	Mooring wire	Six, 1200 m in length and 40mm in dia of galvanized Steel mooring wire. 2 nos 1200m ,50 mm dia. Also for anchor.
Call Sign	3BRS	Winch Drum	Suitable for 1200 m of 40 mm dia. wire rope, and fitted with band brakes of robust design.
Year of Built	October'11	Towing Equipment	C/w towing Bracket and Panama chocks.
DIMENSION		FIRE FIGHTING	
Length overall	90.00 m	Fire detection system	Combustible Gas Detection System in accomodation Fire Detection & Alarm System in accommodation and pump/genset room with manually operated call points.
Breadth MLD.	30 m	Major Fire Fighting	Equipments
Depth MLD	6.1m		Emergency Shut Down System GS/Fire pump(150cu.m/hr x 90M Head), Emergency Fire Pumps(160 cu.m/hr x 90 m head) Water sprinkler system for complete accomodation. Fire-Fighting System with CO2. Heli-deck Fire-Fighting System with Foam. Water Mist system for Main Generators.
Design Draft	3.4 m		
GRT	7740		
NRT	2322		
Deadweight	6000 MT		
Deck Load	10t / m. sq.		
Clear Deck Area	1200 m. sq. covered with wooden deck sheating		
Helideck	Suitable for Sikorsky S61N		
MACHINERY			
Main DG set	3 x 500 KVA Cummins KTA19-D(M1)		
Emergency generator	1 x 500 KVA Cummins KTA19-D(M1)		
Service Air	2 no. ELGI E-75-8 750m ³ /hr@7bar.		
Compressor			
Sewage Treatment	2 x 150 person capacity Make-Hamworthy		
Plant			
Oily water separator	2.5m ³ /hr ,with 15ppm alarm		
Incinerator	200L/hr		
Garbage Compactor			



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15000 DWT COPPER CONCENTRATE BARGE (UNLOADING)

Principal Dimensions

Length Overall :	118.00 m
Breadth Moulded :	30.00 m
Depth Moulded :	9.60 m
Design Draft :	6.50 m

Class Notation

American Bureau of Shipping, ABS + A1 BARGE

Electrical Generating Plant

Two (2) units DG sets, 350kw/440V/3Ph/60hz cap. each.

Brief description:

All the vessels of this fleet, classed with ABS, were built at Keppel Singmarine Pte. Ltd., Singapore to the designs of Navnautik Pte. Ltd., Singapore. The fleet was planned to load copper ore concentrate from the mine in West Irian, Indonesia, at the port of Tembagapura, south coast of West Irian, aboard of a bulk carrier moored several miles off the shore. The barge is a covered deck-loading barge of 15,000 DWT equipped with self-unloader system supplied by BMH Marine AB, Sweden. A combined coal/oil barge equipped with BMH self-unloader system belongs to the fleet for supply of fuel to the mine and the loading site. The pusherboats, Tembaga 3 and 4, are powered with two Caterpillar 3606, each developing 2,300 KW at 1,000 RPM, to drive Schottel Rudderpropellers SRP 2020. As the coupler systems organizing the "Fleet", Taisei Engineering's 2-pin supporting articulate couplers of combined friction- and tooth-engagement type, ARTICOUPLER FRC-300E, were adopted with successful results, because the site of transhipment is fairly rough in the rainy season and connection at the side of the bulk carrier under the influence of waves was expected.





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57M DIVING SUPPORT VESSEL

Principal Dimensions:

Length Overall :	57.00 m
Beam Moulded :	13.00 m
Depth Moulded :	4.80 m
Design Draft :	3.50 m
Complement :	28 + 10

Class Notation:

Bureau Veritas – BV I + HULL+MACH – UMS SPECIAL SERVICE – DIVING SUPPORT VESSEL UNRESTRICTED SERVICE

IMO - SPECIAL PURPOSE VESSEL CODE

Propulsion:

Main engine : 2 x Wartsila 8L-20C – 1440 kw @ 1000 rpm

Propellers : Fixed Propellers in Nozzle

Bow Thruster : A bow thruster unit with 400 HP

Elect. Power Generation :

2 Main Gensets - 190 kw each (CAT 3406 TA)

1 Emergency Gensets - 91 kw (CAT 3304 T)

2 Shaft Alternator - 350 kw each (HC5-2F STD) Alternator





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SHALLOW WATER MAINTENANCE VESSEL

Principal Dimensions

L.O.A. (Approx.) : 49.40 m
Beam (Approx.) : 15.00 m
Depth (Approx.) : 4.45 m
Max. Draft : 3.40 m

Class Notation:

+A1, +AMS, Offshore Support Vessel, (E), SPS, UWILD, U, CRC

Main Engines and Gearboxes

Two [2] diesel engines (Niigata 6L25HX) 1176KW x 750 rpm connected to azimuth FP propellers via shafting.

Propeller and Shafting

Two (2) units Rudder propeller - 800 rpm – Z-peller Type : ZP-41 DNC

Electrical Generating Plant

Four (4) diesel generator 450KW x 1800rpm sets each consisting of one diesel engine directly coupled to one alternator for each set.

One (1) emergency generator of 99 KW





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WATER INJECTION DREDGER

Principal Dimensions

L.O.A (Approx.) :	31.00 m
Beam (Approx.) :	10.00 m
Depth (Approx.) :	4.80 m
Max. Draft :	3.70 m

Class Notation:

+A1, +AMS, Offshore Support Vessel, (E), SPS, UWILD, U, CRC

Main Engines and Gearboxes

Two [2] diesel engines (Niigata 6L25HX) 1176KW x 750 rpm connected to azimuth FP propellers via shafting.

Propeller and Shafting

Two (2) units Rudder propeller - 800 rpm – Z-peller Type : ZP-41 DNC

Electrical Generating Plant

Four (4) diesel generator 450KW x 1800rpm sets each consisting of one diesel engine directly coupled to one alternator for each set.

One (1) emergency generator of 99 KW





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80T BP ASD ESCORT TUG

Principal Dimensions

Length Overall (excl fenders):	32.60 m
Breadth Moulded :	11.60 m
Depth Amidship (mld) :	5.70 m
Design Draft :	4.50 m
Speed :	12.5 knots
Total Complement :	6 persons

Class Notation :

LR + 100A1 Escort Tug Fire Fighting Ship 1 (2400 m³ hr with water spray) IWS + LMC, UMS

Main Engines / Propellers

Two (2) diesel engines (8L28HX Niigata) connected to azimuth FP propellers via shafting 2206 kw at 750 rpm

Two (2) Z-drive azimuthing thrusters (ZP 41 Niigata) for direct diesel drive and equipped with a fixed pitch type propeller running in a nozzle.

Electrical Generating Plant

Three (3) diesel generator sets (280 kw 400 VAC 3 Ph 50 Hz) each consisting of one diesel engine directly coupled to one alternator for each set.





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70 TONNES BP ICE CLASS VOITH TRACTOR ESCORT TUG

Principal Dimensions:

Length Overall (excl fenders) :	37.50 m
Breadth Moulded :	13.50 m
Depth Amidship (mld) :	5.30 m
Draft of Hull :	3.30 m
Max Draught :	6.05 m
Trial Speed:	15 knots
Foam tank :	20 cbm
Total Complement :	8 persons

Class Notation

Class Notation : LR + 100A1 Escort Tug (140, 150, 10,30), IWS, Fire Fighting Ship 1 with water spray, Ice Class 1C, Unrestricted Service – for World Wide Service.

Main Engines / Propellers

Two (2) medium speed diesel engines connected to two (2) Voith Schneider propellers via shafting.

Electrical Generating Plant

Two (2) diesel generator sets each consisting of one diesel engine directly coupled to one alternator for each set.





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70T BP ICE CLASS 1B ASD TUG

Principal Dimensions

Length Overall :	33.30 m
Length Waterline :	28.60 m
Breadth Moulded :	13.00 m
Depth Moulded :	6.10 M/5.70 m
Design Draft (mld) :	5.00 m
Speed :	12.5 knots
Total Complement :	6 Men

Class Notation

LLOYD'S REGISTER OF SHIPPING

LR + 100A1 Escort Tug, Fire Fighting Ship 1 with water spray + LMC, UMS, IWS, Ice Class 1B FS.

The vessel complies with DMA (Danish Maritime Administration) requirements.

Main Engines and Propeller

Two [2] diesel engines 2022KW x 750rpm connected to azimuth FP propellers via shafting.

Electrical Generating Plant

Two (2) diesel generator 400KW x 1500rpm and one(1) 200 KW and 1500rpm sets each consisting of one diesel engine directly coupled to one alternator for each set.





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75T BP ASD HYBRID ESCORT TUG
(for GORGON LNG project, Australia)

Principal Dimensions

Length Overall (excl fenders) :	32.60 m
Breadth Moulded :	13.60 m
Depth Amidship (mld) :	6.60 m
Design Draft (mld) :	4.95 m
Total Complement :	10 persons

Class Notation

Lloyds : 100A1 Escort Tug, Fire Fighting Ship 1 (2400 m³/h) with water spray, +IWS, <ECO (A, GW,IHM,NOx2, OW, P, R Sox)>, WDL (5t/m² from AFT to Fr 21), +LMC, UMS

The vessel complies with the requirements of The Australian Maritime Safety Authority (AMSA)

Propeller and Shafting

Two (2) units Rudder propeller Schottel SCD 4000 SRP 2300 kW , 800 rpm

Electrical Generating Plant for Hybrid Propulsion

Two (2) units main generators each of 1800 kw x 1000 rpm (Wartsila)

One (1) unit main generators each of 1600 kw x 1000 rpm (Wartsila)

One (1) set Lithium Batteries of type LiNMC for low speed propulsion duty for transit between deck and working area during which no diesel engine is allowed to run.





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80T BP DIESEL ELECTRIC ESCORT TUG
(for Wheatstone LNG project, Australia)



PRINCIPAL PARTICULARS

Length Overall (excl fenders)	32.60 m
Breadth Moulded	13.00 m
Depth Amidship (mld)	6.60 m
Design Draught(mld)	4.95 m
Trial Speed	12.50 knots
Total Complement	10 persons

CLASS NOTATION

Class Notation : Lloyds : 100A1 Escort Tug, Fire Fighting Ship 1 (2400 m³/h) with water spray, +IWS, <ECO (A, GW,IHM,NOx2, OW, P, R Sox)>, WDL (5t/m² from AFT to Fr 21), +LMC, UMS

Propeller and Shafting

Two (2) units Rudder propeller Schottel SCD 4000 SRP 2600 kW , 800 rpm

Electrical Generating Plant for Propulsion

Three (3) units main generators each of 2240 kw x 1800 rpm (Wartsila)

One (1) unit emergency / harbour generator of 107 kw x 1500 rpm

5250 DWT BITUMEN / LANDING CRAFT – AL JABER IX



Principal Particulars

Length (O.A.) : 115.80 m

Beam (Mld) : 21.00 m

Depth (Mld) : 7.00 m

Speed : 10.00 knots (@ abt 95% MCR – fully loaded)

Deadweight : 5250 Tonnes (Approx)

Cargo Tank Capacity : 5434 cbm (@ 98% I)

Cargo Pumps : 2 x 340 cbm / Hr @ 60 m Head

Cargo Heating System – 2 boilers : Thermal Oil Heated type (cargo temp. 140 Deg. C)

Clear Deck Space (approx) : 1600 sqm

Bow Ramp : 14.00 m wide, Length 10.0 m & flap 2 m. Support 200 Tonnes in middle

Accommodation : 23 persons (centrally air-conditioned)

Aux Engines (abt) : 2 X 500 KW each (Synchronised)

(abt) : 1 X 120 KW Harbour Set

Class Notation Bureau Veritas - I 3/3 E + Cargo Ship LCDT Deep Sea + MACH



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SELF-PROPELLED FO CARRIER - STAR SIRIUS

Principal Dimensions

Length Overall (mld hull) :	72.50 m
Beam Moulded :	14.80 m
Depth Moulded :	4.0/4.70m
Design Draft(mid) :	2.60 m
Cargo Tank Capacity :	1850 cbm
Speed :	8.0 knots
Total Complement :	14 persons

Class Notation

ABS + A1, Fuel Oil Carrier, Philippine Inter Island Service, + AMS circle E

Main Engines and Gearboxes

Two (2) units 634 kw x 1800 rpm engine including operational accessories

Main engines drives both main cargo pumps through front PTO

Propeller and Shafting

Two (2) fixed pitch propellers, Diameter approx. 1.72m , Manganese Bronze four bladed , B series

Electrical Generating Plant

Two (2) units main generators each of 99kw



1300 CBM LPG Carrier - 'THAI OIL 4'

Principal Dimensions

Length (O.A.) :	69.30 m
Beam (Mld) :	12.20 m
Depth (Mld) :	5.20 m
Designed draught :	4.00 m (max)
Maximum continuous speed :	10.00 knots
Deadweight :	937.00 Tons
Cargo Tank Capacity :	1300.00 cbm
No of cargo tanks :	2 cylindrical
Total Complement :	16 Persons



Cargo Containment: 2 Nos Cylindrical Tanks of 650 cbm at 18 kg/sq. cm pressure for carrying Propane, Butane or Propane / Butane mixture of any ratio.

Main Engines & Gearboxes: Two units marine diesel engine including operational accessories with reverse reduction gearbox. Performance per engine Continuous output : 600 PS at 900 RPM

Electric Generating Plant: 2 units standard shipboard generating sets. Both arranged for parallel operation. Rating : abt 240 kw at p.f. 0.8 / Voltage : 380 Volts / Frequency : 50 Hz / Speed : 1500 RPM

CONVERSION OF TANKER TO FPSO

The vessel was a Suezmax Tanker built in 1978 by Empresa Nacional 'Bazan' in Spain, named PROSTOR & Registered in Cypress. The data in this section apply to the tanker prior to Conversion (except for the TURRET extension)

Main Particulars

Length overall, Tanker :	288.0 m
Length of TURRET extension :	32.0 m
Length overall, FPSO :	320.0 m
Breadth extreme :	46.0 m
Depth moulded :	24.0 m
Light draught, approx :	5.0 m
Draught on summer freeboard :	16.5 m
Deadweight on this draught :	149,849 Tonnes

Propulsion Machinery

Steam turbine – Kawasaki; Max. continuous rating - 32,000 SHP

Electric Power Generation

Steam turbine alternators - 2 Brotherhood 1500 kW

Diesel alternator - 1 SACM V-16 1000 kW

Emergency diesel alternator - 1 Volvo 50 kW



LENGTHENING OF HEAVY LIFT VESSEL "MV SUPER SERVANT 4"

CLIENT: DOCKWISE N.V.

VESSEL BUILT AT:

Keppel Hitachi Zosen Limited (Formerly known as Hitachi Zosen Shipyard)

CLASSIFICATION SOCIETY: ABS



Principal Dimensions and Main Particulars (Approx.)

Length (after Lengthening) :	160.00 m
Breadth Moulded :	32.00 m
Depth Moulded :	8.50 m
Design Draft :	6.00 m
Gross Tonnage :	10,135 tons
Crew Complement :	24 persons
Speed Trial (max) :	14.2 knots

Class Notation : American Bureau of Shipping ABS + A1 (E) + AMS + ACCU

Main Engine: Two (2) sets Stork WerkSpoor 6TM410