## SHIP REPAIR & FABRICATION

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SHIP MANAGEMENT - SHIPYARD INTERCO Shipyard WS

PO Box 153, Doha - Qatar

INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

W/O NO: 21-011090 / 1

EXPENSE A/C: 85.901.1434006

W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
1100	BERTH PREPARATION, DOCKING AND UNDOCKING:-  Berth prepared, vessel docked and undocked. QRs 16,000.00  Vessel undocked 2nd time. QRs 8,000.00	24,000.00
1101	As per our quotation EM 15702 Rev , item 1.01.1  DOCK HIRE, WHARFAGE CHARGES AND SERVICES:-  Dock hired /alongside for during repairs from 21.03.2021 to 10.05.2021.	154,530.00
	Berthing crews provided. Fire line provided and connection/disconnection x 1 time. Fire and safety watch provided Galley garbage skip provided. Electrical shore power line 1 no including connection and disconnection. 1 no. sea water cooling line and 1 no. overboard line including connection and disconnection	
	QRs 3030 per day $\times$ 51 days = QRs 154,530.00 As per our quotation EM 15702 Rev , item 1.01.2	
1150	WHARFAGE AND SERVICE CHARGES:- From 01.06.2021 to 19.06.2021	39,092.00
	Wharfage charges- QRs 1,238 per day x 19 days = QRs 23,522.00 Fire and safety watch - QRs 330 per day x 19 days = QRs	

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PO Box 153, Doha - Qatar

INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
	6,270.00 Fire line 1 no provided + connection/disconnection = QRs 200 per day x 19 days + QRs 275 = QRs 4075.00 Galley garbage skip provided x 19 days = QRs 275 x 19 days = QRs 5,225.00	
1151	COMPRESSED AIR SUPPLY:-	
	N.A	
1152	CRANE ASSISTANCE:-	780.00
	Dock crane 2 hours dated 31.03.2021 for shifting of food - QRs 620.00 Rigger : 2 hours - QRs 160.00	
1153	GAS FREE CERTIFICATE:-	
	N.A	
1154	HIRE OF EQUIPMENTS:-	6,200.00
	HP Jet washing machine 1 no and Wildon pump no provided to client for 20 days- QRs 250 per day $\times$ 20 days = 5000.00 Provided fresh water line for 20 days - QRs 60 per day $\times$ 20 days = QRs 1,200.00 Consider minimum 1 ton each day $\times$ 20 days.	
1155	BALLAST TANKS:-	

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EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
	Not done.	
1156	SEWAGE:-	
	Not done.	
1157	DISPOSAL OF BILGE OILY WATER:-	15,400.00
	Collected and disposed bilge oily water - 26.98 m3	
	QRs 2200 per time (min 4 ton per time) x 7 times = QRs $15,400.00$	
1158	STAGING:-	
	N.A	
1159	EMERGENCY GENERATOR REPLACEMENT OF EXHAUST INSULATION &CLADING:-	12,285.56
	Scaffolding an approx. 1500mm height x 2000mm long arranged for access and later removed on completion of insulation works. Insulation and clading work carried out by specialist subcontractor.	
	Subcontractor charges = $9508.8 \text{ Qrs} + 20\% \text{ yard markup} = QRs 11,410.56$ Scaffolding = $875 \text{ Qrs}$ (amount reduced)	
	Total = QRs 12,285.56	

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
1160	TANK SOUNDING SYSTEM:-	
	N.A	
1161	ER BLOWER SPACE INSULATION:-	8,906.00
	Insulation/cladding to be renewed in ER blower space by yard arranged subcontractor.	
	As per our quotation EM 15702 C, item no 2	
1162	EMEG GENERATOR EXHAUST PIPE LINE:-	
	Incl in Job no 1159	
1163	N.A	
1164	N.A	
1200	TOP SIDE AREA TREATMENT AND PAINTING:-	24,643.00
	Top side area an approx of 852 square metres treated and painted as per paint manufacturer's representative's recommendation and your representative's instruction.	
	H.P. jet washing using fresh water- QRs 8,840.00 Spot Grit sweeping to SA 1, 5% area - QRs 2,150.00 Spot GritBlasting to SA 2.5, 5% area - QRs 2,795.00 Hosing down with fresh water - QRs 1,768.00 Applied one touch coat primer ( Hempadur 17634 beige )- QRs 3094.00	

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description Line Amount

Applied one full top coat ( Hempathane 55210 orange ) - QRs 3,536.00

Protection covering all tyre fenders and accommodation with blue canvas and tape - QRs 1,500.00

Disposal of used grit/garnet/waste water which mixed with ferros, paint, oil and chemical, collection, transportation and safe disposal as per Qatar safety envionment regulation in Mesaieed - 4 ton - QRs 240 x 4 = QRs 960.00

Notes: All paint composition, thinners and tool cleaners supplied by client.

Based on our quotation EM 15702 Revised, item 4.01.1

1201 UNDER WATER AREA TREATMENT AND PAINTING:- 189,566.00

Underwater area an approx. 2078 square meters treated and painted as per paint manufacturer's representative's recommendation and your representative's instruction.

Hand scraped to remove marine growth. QRs 8,312.00 H.P. jet washing using fresh water. QRs 13,650.00

Spot Grit sweeping to SA 1, 50% area . QRs 51,950.00 Spot GritBlasting to SA 2.5. 50% area. QRs 67,535.00

Hosing down with fresh water. QRs 4,156.00

Applied one full coat primer ( Hempadur 17634 red and beige)

QRs 7,273.00

Applied one full coat sealer (Hempadur 47182 )-QRs 8,312.00 Applied two coats antifouling on vertical side ( Hempel oceanic

73652 Red and brown ) - QRs 6,832.00

Applied one coats antifouling on flat bottom ( Hempel oceanic

73652 Red and brown) - QRs 4,896.00

Protection covering all zinc andoes with masking tape.

Protection covering echo sounder and speed log.

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SHIP MANAGEMENT - SHIPYARD INTERCO Shipyard WS

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1

W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description

Line Amount

Protection covering with blue canvas on accommodation. ORs 2,250.00

Disposal of used grit/garnet/waste water which mixed with ferros, paint, oil and chemical, collection, transportation and safe disposal as per Qatar safety envionment regulation in Mesaieed - 60 Ton

QRs 14,400.00

Notes: All paint composition, thinners and tool cleaners supplied by client.

1202 SHIP'S MARKS:-

3,800.00

Painting existing name, home port, draught marks and load lines marks with two coats gloss.

As per our quotation EM 15702 Revised, item 4.05

1350 PORT AND STBD. CHAINS:-

shots marked.

7,500.00

Lowering anchors and anchor chains to the dock bottom using ship's windlass, ranging out for examination and later restoring.

Both Port & Stbd anchors & chains to lowered & be run out until bitter end, chains flaked out on dock bottom and later

Port and stbd anchor chains HP washed. Port and stbd chains

As per our quotation EM 5702 A, 16.1

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description Line Amount 1400 SEA CHESTS AND GRIDS:-9,350.00 8 in nos. seachests grating removed. Sea chests and grids , HP washed, cleaned & painted as per flatbottom area treatment and painting specification. Later refitted on completion. grids QRs 4,400.00 Erected and removed staging. QRs 3,200.00 5 nos grit blasted. QRs 1,750.00 Based our quotation EM 15702 Revised item 2.03 1401 BT 1 REPLACEMENT OF INPUT DRIVE SEALS:-6,760.00 Motor electrical connections are disconnected and removed. Motor foundation bolts and coupling bolts are removed. Motor lifted and secured by chain blocks at one side. Driven shaft coupling was removed by hydraulic jacks. Top seal locking plate removed. Seal stuffing box/seal collar and seals are removed. Client supplied new seal collar is not matching with old/existing seal collar. Height of new seal collar was 2mm more than the old collar. Yard machined the new seal collar to match with the old one. Seal area thoroughly cleaned. Seal collar and input drive seals are installed in position. Inspected and witnessed by client. Driven shaft coupling installed on position by heating. Inspected by Client. Motor foundation and motor couplings are cleaned. Motor shifted back to the location and installed on position. Coupling bolts installed back and tightened. Electric connections are reinstalled back. Inspected and witnessed by client

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## for QATAR NAVIGATION (Q.S.C)

SHIP REPAIR, FABRICATION & ENGINEERING DIVISION

Based on our quotation EM 15702 revised, item 9.14

## SHIP REPAIR & FABRICATION

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SHIP MANAGEMENT - SHIPYARD INTERCO Shipyard WS

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EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description Line Amount

1402 BT 2 REPLACEMENT OF INPUT DRIVE SEALS:- 6,760.00

Motor electrical connections are disconnected and removed. Motor foundation bolts and coupling bolts are removed. Motor lifted and secured by chain blocks at one side. Driven shaft coupling was removed by hydraulic jacks. Top seal locking plate removed. Seal stuffing box/seal collar and seals are removed. Client supplied new seal collar is not matching with old/existing seal collar. Height of new seal collar was 2mm more than the old collar. Yard machined the new seal collar to match with the old one.

Seal area thoroughly cleaned. Seal collar and input drive seals are installed in position. Inspected and witnessed by client. Driven shaft coupling installed on position by heating. Inspected by Client. Motor foundation and motor couplings are cleaned. Motor shifted back to the location and installed on position. Coupling bolts installed back and tightened. Electric connections are reinstalled back. Inspected and witnessed by client.

Based on our quotation EM 15702 revised, item 9.14

1403 GATE VALVES AND BUTTERFLY VALVE RENEW: - 3,370.00

Engine room Over board Globe valve DN40-1no, Gate valve 5K 80-2nos and Gate valve 5K 65-3nos are removed from location. Found in bad condition. As per client instruction owner supplied same size new valves-6nos fitted back on position with yard supplied new gaskets and bolts nuts.

5nos of DN120 Gate valves are removed from location brought to workshop dismantled and cleaning done. Valve condition is found

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W/O NO: 21-011090 / 1

W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description

Line Amount

bad. As per Client instruction all the 5nos of Gate valves DN120 replaced by client supplied new DN120 Butterfly valves. Due to the length variation Client modified spool pieces are installed with yard supplied new bolts, nuts and new gaskets. Witnessed by client.

Based on our quotation EM 15702 Rev , item 17.01

1404 REPLACING OF VALVES:-

6,132.00

Following valves removed and client supplied new valves fitted in position.

Auxiliary engine sea water inlet 5K 80A Gate valve-2no removed from location and brought to workshop. Valve condition was bad. Client rejected. Yard supplied new 5K 80 gate valve -2nos are shifted to vessel and fitted back on position with yard supplied new gaskets and bolt nuts. Witnessed by Client.

Z-Peller sea water gate valve 5K 65A -3nos removed from location and brought to workshop. Valves are in bad condition, Client rejected the valves. Yard supplied new 5K 65A gate valve shifted to vessel and fitted back on position with yard supplied new bolts and nuts. Witnessed by Client.

Refer sea water glove valve DN40 -1no removed from location and brought to workshop. Dismantled and chemical cleaning and buffing done. Valves disc and valves seat lapped and cleaned. After Client inspection Valve assembled with yard supplied new gland packing, new gaskets. Gravity test done. No leaks found. Witnessed by client and yard QC. Valve shifted on-board and fitted back on position. Witnessed by client.

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DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
002 110	Description	Effic Timourie
	As per our quotation EM 15702 A, item 16.04	
1405	MGPS SYSTEM MODIFICATION AND INSTALLATION:-	9,710.00
	8 Nos. MGPS anodes removed. 2 Nos MGPS anodes renewed. (Client supplied) 6 nos blanked.	
	Yard fabricated 2 nos flanges and fitted with yard supplied new gaskets, bolts & nut.	
	1 No. 5" dia. x 1500mm long pipe for fresh water transfer line removed for access and later refitted. Sea chest vent line removed for access and later refitted on completion. 1 No. Bilge suction strainer and sea chest vent pipe removed for access and later refitted.	
	As per our quotation EM 15702 A, item 21.07	
1800	LIFE RAFT SECURING FRAME FABRICATION & RENEWAL:-	2,980.00
	6 pcs Liferafts removed from supports and later positioned after completion of retainer repair works. Retaining frame to be removed, each is held in place by 1off M12 bolt fitted to each leg [2 in total] 4 off new frames to fabricated using following materials.Material: 32mm OD Carbon Steel Schd 40, Height Overall: 73cm, Width: 54cm outside to Outside2off eyes of 12mm round & 45mm height to be fitted at 20cm from centre lineNew fabricated frames to be refitted to main frames & new bolts used on re-assembly.	
	As per our quotation EM 15702 rev , item 6.01	

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W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
1801	FLOOR PLATE MODIFICATION:-	4,464.00
	Floor plates are retained by M6 counter sunk screws each plate containing valve assessPlate size $-180  \text{mm}$ OD x $130  \text{mm}$ ID x $4  \text{mm}$ $-18$ nos .Fitted and welded.M6 X $20  \text{mm}$ long stainless steel counter sunk bolt $-30$ nos.	
1802	MOORING ROPE FRAME:-	1,780.00
	2 Nos. mooring rope frame to be fabricated and welded on port and stbd. crash barrier to size each 2"dia., sch 40 ms pipe x 2800mm long provided with 1 NO. cold bend.	
	As per our quotation EM 15702 rev , item 21.02 rev	
1803	BT ROOM GRATING:-	2,150.00
	1 No. Frp grating size 600mm x 600 provided with 40mmX 40mm ms angle bar frame and 2 Set hinges to be fabricated and installed to open inboard position at BT room T'ween deck emergency escape.	
	As per our quotation EM 15702 rev, item 21.03	
1804	RAISED PLATFORM FOR VALVE ACCESS:-	
	Not done.	
1805	FABRICATION OF ANGLE BARS TO FIT AT FRC DECK:-	2,000.00
	2 Nos. 'L shape angle fabricated & fitted to FRC deck to size	

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W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
	size each 200 mm x 90 mm x 12 mm thickness ms channel x 1300mm long provided with 2 nos bends Brackets to be fabricated of MS Channel 200 mm x 90 mm x 12 mm -2 nos Triangular brackets size each 250mm x 250mm x 10mm thickness - 4 Nos.  As per our quotation EM 15702 A, item 21.05	
1806	HATCH COVER REMOVE/REFIT:-	1,100.00
	Eye pad 4 nos. fitted and welded.	
1807	MGPS ANODE:-	1,110.00
	Flange Slot cutting on the 2 no. flange to fit on existing flange as requested by client.= $16$ slot Sleeve type New MS flange of size14mm thick X 220 mm OD x 95mm ID, PCD 180 mm fabricate and supply.= $02$ nos.	
	As per our quotation EM 15702 G, item 3	
1808	ZINC ANODE:-	1,200.00
	Installation of zinc anodes -6 nos.	
	As per your email,	
2400	FRESH WATER TANK CLEANING:-	
	Not done.	

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EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
2401	MUD TANK CLEANING:-	
	Not done.	
2402	BULK TANK:-	
	Not done.	
2403	DIRTY OIL TANK CLEANING:-	4,305.00
	Gas free of tank 1 no.Pump out remaining fuel and dispose if any.Cleaning bottom and sides by means of wiping with cotton rags.	
2404	BASE OIL TANK (308 M2):-	52,729.00
	Remove and refit manhole cover.	
	Ventilation using electrical blower. Erected full scaffolding	
	H.P. jet washing using fresh water. Pump out mop dry.	
	Full Grit blasting to SA 2.5	
	Removing dirts and debris - 1 m3 vacuum cleaning and protection covering	
	Hand cleaning full internal area .  Applied one full coat ( Hempadur 85671 Grey/ Off white)	
	Applied one full stripe coat	
	Applied second full coat ( Hempadur 85671 Grey/ Off white)Note : All paints supplied by Client	

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EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
	As per quotation EM 15702 Revised, item no 20.11	
2405	BILGE OIL TANK CLEANING:-	4,305.00
	Gas free of tank 1 no.Pump out remaining fuel and dispose if any.Cleaning bottom and sides by means of wiping with cotton rags.	
	As per our quotation EM 15702 H, item no 2	
2500	RESTORING OF STORES CRANE HYDRAULIC TANK:-	4,710.00
	$2\ x$ tanks covers removed in situ for access securing bolt threads drilled taped and helicoil fitted back as per client instruction 10MM helicoils 12 nos ,8MM helicoil 16 nos	
	Note: M10X20 Long ms bolt 12 nos with10MM flat washer 12 nos M8X20 Long ms bolt 16 nos with 16 nos 8MM Flat washer handed over to client Erected staging before start the job and removed after completion of the job.(approx size 5 meter)	
	As per our quotation EM 15702 Rev, 3.02	
2501	FUEL TANK SOUNDING CAP:-	3,760.00
	4 Port Fuel oil tank's old sounding cap removed by drilling taping and 1 No. new cap manufactured by yard and fitted back in original position size 58mm Od x 30mm long provided with 6mm x 30mm long key slot and M44 thread. Using brass material.	
	7 nos sounding cap New manufactured (58MM Od 30MM long material brass) fitted back original position witnessed by ship crew	

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## for QATAR NAVIGATION (Q.S.C)

## SHIP REPAIR & FABRICATION

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SHIP MANAGEMENT - SHIPYARD INTERCO Shipyard WS

PO Box 153, Doha - Qatar

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006 W/O NO: 21-011090 / 1

INVOICE NO: SFWK/INV/012883/2021

W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
	(S4P4, S5P5, S3P3, S2, P2)	
	Based on our quotation EM 15702 Rev, 17.06.1	
2502	AHU MOTOR ADDITIONAL WORK:-	1,400.00
	AHU motor NDE cover bearing worn out bearing area premachined, sleeve manufactured, inserted with interference fit, secured with 02 nos M5 grub screw and final machined according bearing OD 120.00.	
	As per quotation EM 5702 B, item 1	
2503	FABRICATION OF PLUGS FOR MUD TANK MANHOLES:-	720.00
	Carried out freeing of old plugs.	
2504	RESLEEVING OF END COVER - STBD SHAFT GENERATOR:-	3,450.00
	Resleeving of stbd DG end cover . OD 240 CI material used.	
	As per Qtn EM 15702 I	
2800	TYRE FENDER RENEWAL:-	3,510.00
	13 nos pad eyes cutting and grinding. 02 nos tyre removed and fitted back. 01 Tyre position on ship. Provided crane support	

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PO Box 153, Doha - Qatar

INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
5050	MAIN ENGINE CHARGE AIR COOLERS:-	12,400.00
	Both port and stbd coolers removed from vessel, brought to workshop, mechanically and chemically cleaned, pressure tested and return to vessel and fitted back in position.	
	As per our quotation EM 15702 F, item 1.3	
5051	PORT AND STBD. MAIN ENGINE TURBOCHARGERS:-	940.00
	Provided riggers and dock crane assistance for the removal and refitting of turbocharger.	
	Dock crane: QRs 310 per hour x 2 hours = QRs 620.00 Riggers : QRs 80 per hour x 4 hours = QRs 320.00	
5052	MAIN ENGINE PLATE COOLERS:-	
	Not done.	
5053	N.A	
5600	MAIN ENGINE FRESH WATER COOLING PUMPS:-	940.00
	Both Port & Starboard engine driven fresh water cooling pumps removed from engines & sent to workshop for overhaul.	
	Based our quotation EM 15702 rev, item no 10.15	

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
5601	MAIN ENGINE SEA WATER COOLING PUMPS:-	940.00
	Both Port & Starboard engine driven sea water cooling pumps removed from engines & sent to workshop for overhaul.	
	Based on our quotation EM 15702 rev, item no 10.15	
5602	1 & 2 BOW THRUSTER L.O. COOLERS:-	5,800.00
	Bow thruster Lube Oil coolers (Port and Stbd)-2nos removed from location by removing inlet and outlet pipes and foundation bolts. Coolers lifted and shifted to yard workshop. Coolers end covers removed and chemical cleaning and buffing done. Cover plugs -4nos found damaged. Yard fabricated -4nos of end cover plugs, Material Brass. Tube are cleaned by steel rods and chemicals. After washing cleaning inspected by chief engineer.	
	End covers are assembled back with yard supplied new O-rings. Pressure test 4Bar was carried out. No leaks found. Witnessed by Yard QC and Client. After client inspection coolers are shifted to vessel and fitted back on position with yard supplied new gaskets. Inlet and outlet pipe line are fitted back with yard supplied new gaskets. Inspected and witnessed by chief engineer	
	As per our quotation EM 15702 rev, item no 12.03	
5603	Z-PELLER_PUMPS:-	6,375.00
	Port and stbd sea water pump disconnected from inlet and outlet pipes.  Brought to workshop and dismantled.  Casing 2 nos , mechanical seals and bearing renewed.(client	

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DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1

W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
	supplied.) Pumps 1 no assembled back with old impeller and 1 no without impeller. Both pumps shifted to vessel and hand over to client. Based on our quotation EM 15702 rev, item no 14.28	
5604	PORT & STARBOARD FIFI GEARBOX L.O. COOLERS:-	3,500.00
	Coolers removed and brought to workshop, cleaned chemically and mechanically, pressure tested and fitted back in position. Pressure tested. Assembled with yard supplied O rings and gaskets.	
	Cleared the blocks using steel rods.	
	As per our Qtn EM 15702 A, item 12.07	
5605	P&S Z-PELLER SW PUMP OVERHAUL:-	
	Incl n job no 5603	
5606	D/G COOLER CLEANING AND TESTING:-	2,550.00
	Received 2 nos DG cooler at workshop, dismantled, chemically and mechanically cleaned, pressure tested and re assembled provided shell housing.	
	18 tubes in one cooler and 40 tubes in another cleaned with steel rods and hand drill machine.	
	Pressure tested at 2 bar and cooler hand over to ship staff.	

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DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Tala N.	Description	Time America
ON AOL	Description	Line Amount
5607	ALIGNMENT OF AC COMPRESSOR:-	1,800.00
	Stbd side AC compressor no 2 foundation adjusted with respect to motor by added shims and fixed. Motor foundation bolts loosened, and motor adjusted by using old shims. Lased alignment tool fixed. Alignment done. Inspected by client. Motor foundation bolts and coupling bolts are tightened. Alignment report submitted.	
5800	WINDLASS BRAKE LINING:-	
	Not done.	
	NOT done.	
5850	STORES CRANE REFITTING OF BOOM EXTENSION RAM:-	
	Job cancelled.	
6000	FABRICATION OF SEAWATER PIPES:-	
	Job cancelled.	
6001	REMOVAL, INSPECTION & CLEANING OF BHS LOADING & DISCHARGE LINES:-	
	Job cancelled.	
6002	MODIFICATION IN BULK MANIFOLD:-	11,200.00

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PO Box 153, Doha - Qatar

INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description

Line Amount

2 Nos. Port. & Stbd. Bulk pipe lines extended by approx. 750mm long, Sch. 80, 5" dia.

Material: Pipe 5" dia. Sch. 80 Seamless Carbon Steel Pipe and Camlock coupling removed & thread cropped,

Cropped ends & 1 x end of extension pieces prepared for full penetration welds other end of extension piece threaded for to suit camlock coupling. (One new camlock coupling supplied by owner. Other existing camlock coupling cleaned and refitted.) Extension pieces prepared & applied one coat shop primer.M.P.I done for all pipe weld joints by Q/A Q/C.Female camlock

couplings refitted to extension pieces.

Pipe lines shifted to main deck.

5" dia. temperary blind flange fitted both side for hydro testing.20mm dia. male brass plug made in machine shop and dfitted with the pipeline. - 02 nos.

Testing pressure - 8 bar.

Testing process inspected by Q/C and certificate issued. After testing refitted the pipe lines it's own position.

As per our quotation EM 15702 Revised, item no 17.03

6003 SEAWATER CONNECTION PIPES:-

3,105.00

Fabricated and fitted 03 nos. blind flange for Prov ref compressor condenser line, ECR air conditioner condenser line and accommodation air compressor condenser lines.Size - O.D. 200mm. P.C.D. 165mm. Hole - 08 nos. Hole dia. 19 mm. - 03 nos.Size:- M.S. Blind Flange,O.D. 115mm, P.C.D. 95mm. Hole - 04 nos. Hole dia - 15mm. - 01 nos.

As per our quotation EM 15702 Revised, item 21.07

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021 EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1

W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description Line Amount

6004 SEAWATER CONNECTION PIPES:-

Not done.

6005 INSTALLTION OF CUPRON SYSTEM NOZZLE:-

8,740.00

Port and stbd. cupron system nozzle installed on top of sea chest plate in void space tank.

Details - Port. Side.

1 ½" Dia. Hole penetration provided longitudinal Bulkhead. - 01 nos.1 ½" Dia. Hole penetration provided on sea chest top. - 01 nos. Owner supplied body threaded flange installed on sea chest top and bottom area.1  $\frac{1}{2}$ " dia. M.S. pipe, sch 80.,100mm long provided with one 90 deg. -Elbow and 02 nos. flanges.- 01 nos.1 ½" dia. M.S. pipe, sch 80.,200mm long provided with both side flange -01 nos.01 nos. M.S. pad plate welded on Bhd. O.D.130mm, X .I.D.50mm X 8 mm thick. - 01 nos.After fabrication all spools fixed on sea chest top with owner supplied valve in void tank area. Stainless steel Bot & Nut. M 16 X 50mm long. - 08 nos.G.I. Bolt and nut. M 16 X 60mm long - 08 nos.Details-Stbd. Side.1 2" Dia. Hole penetration provided longitudinal Bulkhead. - 01 nos.1 ½" Dia. Hole penetration provided on sea chest top. - 01 nos.Owner supplied body threaded flange installed on sea chest top and bottom area.1 2" dia. M.S. pipe, sch 80.,100mm long provided with one 90 deg. -Elbow and 02 nos. flanges.- 01 nos.1 ½" dia. M.S. pipe, sch 80.,200mm long provided with both side flange -01 nos.01 nos. M.S. pad plate welded on Bhd. Size - O.D.130mm, X .I.D.50mm X 8 mm thick. - 01 nos.After fabrication all spools fixed on sea chest top with owner supplied valve in void tank area. Stainless steel Bot & Nut. M 16 X 50mm long. - 08 nos.G.I. Bolt and nut. M 16 X 60mm long - 08 nos. MPI Testing process done inspected by Q/C and certificate

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description Line Amount

issued. After testing refitted the pipe lines it's own position.

As per our quotation EM 15 702 D, item no 1

6006 FABRICATION AND SUPPLY OF SEA CHEST FILTERS:- 1,840.00

Main sea chest strainer filter new fabricate from 2mm ss perforated sheet filter size is OD - 550 mm , Hight - 750 mm ( Perforated sheet supplied by client ) =02 no. Dia 550 mm X 2 mm thickness SS plate for base plate = 02 nos.(Yard supply material )SS round bar dia 12 mm X 550 mm long for filter lifting = 04 nos.Fabricate and supply 2 nos

As per our quotation EM 15702 G, item no 1

7000 PORT AND STBD. ENGINE ROOM FANS:-

15,520.00

Job has been identified with ship ETO and corresponding breakers are isolated by ship ETO. Unbolt blower Hood hatch cover and shift aside. Removed the foundation bolts of blower trunk, protection grid, disconnect the power supply cable. Access cutting done for take out the blower assembly. shifted the Blower assembly away from the hood and brought to workshop. Checked motor insulation tested. Withdraw the blower fan and cleaned trunk assembly with scraper cleaner. Dismantled blower motor to start overhauling. Clean the motors using electrical cleaning solvent, cured inside the temperature control oven and re-varnished the motor windings. All mechanical parts are cleaned by chemical solvent. both motor end cover bearing housing Areas are checked, found OK. Required QAQC report prepared sent to QC for preparing final report for client approval. Re-assembled motor using yard supplied bearings. MEGGER testing of motor carried out found satisfactory.

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PO Box 153, Doha - Qatar

INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No

Description

Line Amount

Reassembled blower, bench tested and shifted back to vessel. Refit the blower and protection grid. Gasket 3mm thickness renewed. base bolts, nuts washers are renewed by Yard supplied. Reconnected the power cables as per the marking. Satisfactory running test carried out presence of ETO. found satisfactory. Access angles welding completed. hatch cover Closed properly. Hatch cover gasket also renewed.

As per our quotation EM 15702 Rev, 5.09

7001

MAIN AC AHU MOTOR TO OVERHAUL (18.5kW 415V/3PH/ 50Hz) - 1 NO.:-

4,625.00

Job identified with ETO and LOTO applied. Electrical connection marked disconnected. motors transferred to electrical workshop. Checked motors winding insulation value noted. Dismantled motor end covers removed existing bearing from rotor shaft. Draw out rotor unit from stator body. Clean the motors winding, other parts by using electrical cleaning solvent, cured inside the temperature control oven. Checked insulation value of stator coil. Found good. Re-varnished the motor windings. Checked bearing clearance of end covers and found all end covers are good. Reading has been submitted to QC. After ETO inspection Re-assembled Motor using Ship Supplied bearings. workshop running test carried out with presence of ship ETO Shifted back to on-board and installed back to original position. Alignment done. Reconnected electrical cable as per marking on-board running test carried out. found satisfactory.

As per our quotation EM 15702 Rev, 5.24

7002 GALLEY EXTRACTION FAN MOTOR (0.55kW 415V/3PH/ 50Hz) - 1 NO:-

1,563.00

Job identified with ETO and LOTO applied. Disconnected the

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DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description

Line Amount

electrical cables. lifted shifted to workshop along with fan trunk. Visual inspection done. Value of motor winding checked value recorded. Dismantled motors end covers removed existing bearing from rotor shaft. Draw out rotor unit from stator body. Cleaned the motors winding by electro solvent, other parts also cleaned using electrical cleaning solvent. Motor kept inside the Oven. Re-varnished the motor windings. Checked insulation value of motor stator winding. Found out value was more than the tolerance insulation value recorded. Checked bearing clearance of each end covers. Each end covers knurling done. Report prepared submitted QAQC to prepare final report for client. After ETO inspection Re-assembled motor using ship supplied bearings 6202 RS - 02 PC's. Fan fixed as per marking. Motor tested in workshop. Shifted back to On-board installed. Prepared new gasket renewed bolts. All power cables reconnected as per original marking. on-board test carried out with presence of ETO. found satisfactory.

As per our quotation EM 15702 Rev, 5.25

7003 AHU FAN BEARING REPLACEMENT (ALLOW 1 AHU):-

1,650.00

Job identified with help of ship ETO. Isolated AHU fan motor breaker by ETO. V-belt has been marked removed. AHU Blower Motor Fan existing bearing removed on both side of the shaft. Properly cleaned bearing seating area on the shaft. installed ship supplied bearing set on both sides. Re-installed V-belt checked belt alignment with respect to motor pulley. Run test carried out with presence of ETO. Found satisfactory.

NOTE: Bearings supplied by the owner.

As per our quotation EM 15702 rev, item no 12.08

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INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No	Description	Line Amount
7004	MAIN AND EMERGENCY SWITCH BOARD:-	
	Job cancelled.	
7005	Z-PELLER P & S HYDRAULIC MOTORS TO OVERHAUL ( EACH 45KW X 2 NOS.):-	11,800.00
	Power: 45kW 415V/3PH/ 50HzRPM: Motors megger tested before removal & after reassembly tests to witnessed by vessels ETOElectrical cabling disconnected, brought to work shop, dismantled, overhauled, Motors is retained in position by 4off M16 bolts eachMotor is transported to workshop for overhaulMotor is dismantled, cleaned & presented to Vessel ETO for inspectionRe-insulation of motor. Client supplied bearings to be fitted. Motor to be reassembled after completion of ETO's inspection.Returned to vessel and refitted.2 x copies of motor overhaul to be provided 1 x copy to C/E 1 x copy to Vessel Superintendent.	
	As per our quotation EM 15702 A, item no 5.08	
7006	MAIN AC COMPRESSOR NO.2:-	
	Job cancelled.	
7007	PORT & STBD SHAFT GENERATOR:-	58,610.00
	(Maker : Leroy SomerWeight 3300 kg, 1250 Kva , Rating: 1000 KW, Qty : 2 nos )	

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W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No

Description

Line Amount

Port side shaft generator:-

Port shaft alternator power cables, control cables and AVR disconnected from alternator terminal box. Shaft Coupling marked disconnected and shifted aside. Alternator drive coupling with drawn from Gear box. Alternator lifted from position and shifted aside. After that megger and airgap checked in front of ETO. Alternator end covers marked dismantled. Alternator existing drive end and non-drive end bearings removed. All electrical mechanical parts cleaned using electrical cleaning solvent (using Eletrokleen-D4). End covers bearing clearance calibrated and found OK. Alternator winding heat up heating lamp. Checked value of winding insulation reading noted. After ETO inspection re-assembled the alternator by using owner supplied new bearings. O ring renewed. Alternator boxed up and coupling fitted back. Foundation area cleaning and buffing done. Alternator shifted back to position, aligned with gear box. Laser alignment carried out with gear box and alternator. Report submitted to client. After alignment chock fasting done. Chock fsat supplied by Yard. Witnessed by client. After 22 hours foundation tightened and all accessories refitted. Taken airgap between stator and rotor. Reading noted and report submitted to QAQC, and Alignment report submitted to QAQC by mechanical team. Chock fast done. Power cables, control cables and monitoring cables AVR re-connected. Close all terminal covers. found satisfactory.

Stbd side shaft generator:-

Stbd shaft alternator power cables, control cables and AVR disconnected from alternator terminal box. Shaft Coupling marked disconnected and shifted aside. Alternator drive coupling with drawn from Gear box. Alternator lifted from position and shifted aside. After that megger and airgap

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W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description Line Amount

checked in front of ETO. Alternator end covers marked dismantled. Alternator existing drive end and non-drive end bearings removed. All electrical mechanical parts cleaned using electrical cleaning solvent (using Eletrokleen-D4). End covers bearing clearance calibrated and found OK. Alternator winding heat up heating lamp. Found diode stud burned. Renewed new one with the help of machine shop. Checked value of winding insulation reading noted. After ETO inspection re-assembled the alternator by using owner supplied new bearings. O ring renewed. Alternator boxed up and coupling fitted back. Foundation area cleaning and buffing done. Alternator shifted back to position, aligned with gear box. Laser alignment carried out with gear box and alternator. Report submitted to client. After alignment chock fasting done. Chock fsat supplied by Yard. Witnessed by client. After 22 hours foundation tightened and all accessories refitted. Taken airgap between stator and rotor. Reading noted and report submitted to QAQC, and Alignment report submitted to QAQC by mechanical team. Chock fast done. Power cables, control cables and monitoring AVR re-connected. Close all terminal covers. found satisfactory.

NOTE: Bearings supplied the owner.

7500 SUPPLY OF MATERIAL: -

5,194.00

Following matrerial supplied against signed delivery note:-

4" flange 165 PCD 8 HOLE 12 pcs

4" flange 200 PCD 8 HOLE

welding rod 2.5 mm 3 pack welding rod 3.2 mm 3 pack

cutting nozel wiscol 16 2 pcs

Cutting wheel 1 mm 50 pcs

E & O.E

## for QATAR NAVIGATION (Q.S.C)

## SHIP REPAIR & FABRICATION

Telephones

Office: 4771690 / 4771695

: 4771687



Telex : 4206 DH Cable : "NAVIGATION" Doha Bank A/c:QNB Main Branch P.O.Box 1000, Doha - Qatar Swift Code : QNBAQAQA QAR A/C No. 0013-000309-060 USD A/C No. 0013-000309-061

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SHIP MANAGEMENT - SHIPYARD INTERCO Shipyard WS

PO Box 153, Doha - Qatar

INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1 W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description Line Amount

Cutting wheel 3 mm 50 pc Grinding wheel 4 1/2" - 50 pcs MS sockket 1/2" 05 nos MS plug 1/2" 05 nos MS SOCKET 1/4" 05 NOS

GI BOLT/NUT 16X50 -60 NOS

2 inch SS ball valve 12 pcs 2 inch socket 4 pc

GI BOLT/NUT 16X 100 - 60 NOS

2" Nipples 12pcs

8000 PORT & STARBOARD AZI BLADES CLEAN & POLISH:- 6,750.00

PORT & STBD side propellers each 2.8 meter, 4 blade of fixed pitch type fitted in Kort Nozzle cleaned and polished with grade 36 sanding disc at site.erected staging before start the job and removed after completion of the job.

As per our quotation EM 15702 Rev, 9.02

8001 BOW THRUSTER NO:1 FORWARD CLEAN & POLISH:- 4,900.00

FWD Bow thruster No.1 removed grating, propeller size 1750mm in diameter 04 blades cleaned and polished with grade 36 sanding disc at site after completion refit the grating.erected staging before start the job and removed after completion of the job.

As per our quotation EM 15702 Rev, 9.03

E & O.E

## for QATAR NAVIGATION (Q.S.C)

## SHIP REPAIR & FABRICATION

Telephones

Office: 4771690 / 4771695

Fax : 4771687



Telex: 4206 DH
Cable: "NAVIGATION" Doha
Bank A/c:QNB Main Branch
P.O.Box 1000, Doha - Qatar
Swift Code: QNBAQAQA
QAR A/C No. 0013-000309-060
USD A/C No. 0013-000309-061

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SHIP MANAGEMENT - SHIPYARD INTERCO Shipyard WS

PO Box 153, Doha - Qatar

INVOICE NO: SFWK/INV/012883/2021

DATE: 30/07/2021

EXPENSE A/C: 85.901.1434006

W/O NO: 21-011090 / 1

W/O REF: MDO 21067

Vessel Name/Description : M.V. "HALUL-83"

Job No Description

Line Amount

8002 THRUSTER 1 AFT CLEAN & POLISH:-

4,900.00

AFT Bow thruster No.1 removed grating, propeller size 1750mm in diameter 04 blades cleaned and polished with grade 36 sanding disc at site after completion refit the grating.erected staging before start the job and removed after completion of the job.

As per our quotation EM 15702 Rev, 9.04

Invoice Amount -->

800,099.56

(QAR - Eight Hundred Thousand Ninety-Nine And 56/100 Only)

E & O.E

for QATAR NAVIGATION (Q.S.C)
SHIP REPAIR, FABRICATION & ENGINEERING DIVISION