

Tele:- 079-23243374

SPEED POST/E-Mail

Reply should be addressed
to the Commander

Headquarters
Coast Guard Region (NW)
Udyog Bhavan
Post Box No. 09
Sector-11,
Gandhinagar – 382 010

3462/3

08 Oct 18

**PRE QUALIFICATION FOR RATE CONTRACT 2019-20 FOR UNDER WATER AND
YEARLY/TWO YEARLY/FIVE YEARLY WATER JET ROUTINES
OF M/s ABG BUILT INTERCEPTOR BOATS
INVITATION OF EXPRESSION OF INTEREST AND COMMENTS/QUERIES**

Sir,

1. It is intimated that e-mail containing defect list along with serial wise CGRHQ (NW) remarks (Hull, Engineering and Electrical) for annual under water and yearly/Two yearly/ Five yearly water jet routines of M/s ABG built Interceptor Boats as has been forwarded to date 08 Oct 18:-

ICGS		C-143	C-153	C-152	C-149
Based at		Porbandar	Veraval	Vadinar	Veraval
(a)	Hull:	HA-1001 to HB-1030	HA-1001 to HA-1030	HA-1001 to HB-1033	HA-1001 to HA-1030
(b)	Engg:	EA-3001 to EB-3053	EA-3001 to EA-3054	EA-3001 to EB-3128	EA-3001 to EB-3062
(c)	Elect :	LA-5001 to LA-5047	LA-5001 to LA-5050	LA-5001 to LA-5047	LA-5001 to LA-5048

2. Item wise Technical comments/queries are invited from **Registered/ Approved Refitting firms** for the defects remarked "DO" by CGRHQ (NW) on the defect list enclosed. **Please note that only Technical comments/queries need to be forwarded and no "Budgetary Quote" is to be forwarded. Forwarding of budgetary offer will disqualify the concerned refitting yard from the tendering process.**

Contd ... 2/-

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3. **The routines are to be undertaken at Gujarat only. The likely duration of work package on each boat is 40 days only.** The Details of IBs under this region are as follows:-

SI No.	ICGS	Based at	Work package due
(a)	C-143	Porbandar	Annual underwater work package with two yearly jet routines
(b)	C-153	Veraval	Annual underwater work package with five yearly jet routines
(c)	C-152	Vadinar	Annual underwater work package with five yearly jet routines
(d)	C-149	Veraval	Annual underwater work package with yearly jet routines

4. The conduct of refit including other general conditions, payment terms etc. will be governed in accordance with provisions of Defence Procurement Manual in vogue.

5. For details of defects on machinery and ship's Hull, you are requested to contact **"The District Technical Officer, CGDHQ-1, Porbandar (Tele: 0286-2241794)"** to ascertain availability of IBs in harbour and clearance to visit the boat.

6. It is intimated that a Request for Information Conference (RFIC) will be held at **CGRHQ (NW), Gandhi Nagar** to discuss/clarify the scope of work and to bring all the participating yards at par. It may be noted that the date and venue for RFIC will be intimated by **CGRHQ (NW)** at a later date.

7. You are advised to depute your reps to the IBs for meeting the Commanding Officers in order to assess the defect wise work package physically prior submitting technical comments/queries.

8. It is also desired that suitable reps may be deputed for attending the RFIC on receiving intimation from **CGRHQ (NW)**. Alternatively, a communication may be sent to **CGRHQ (NW)** that you would accept the work package as finalized during the RFIC.

9. **In the event that firm/ refitting firms does not have its own infrastructure including workshop facility at the place of refit, it should have a Memorandum of Understanding (MoU) with a local firm which owns at least a workshop facility befitting the refit of a ship. The refitting firm / refitting firms should be a licensee or have a MoU with a local firm who is a licensee of port/ PSU/ private refitting firm in whose dry dock the ship is going to be docked. The proof for both the facilities (workshop and dry dock) is to be attached with the technical bid so as to ascertain the technical qualification of the yard.**

10. **It may be noted that RFP will be issued to all those yards who have not conveyed their unwillingness to undertake the refit in accordance with provisions of DPM-09, irrespective of whether they attend RFIC or not.** As such if you do not wish to undertake the refit you should communicate it in writing before the RFIC takes place.

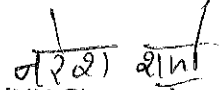


11. It may be noted that CGHQ is contemplating AIAMC contract for certain equipment/ systems fitted onboard ship. Although, defects on these equipment have been added in defect list but in case the AIAMC contract is concluded prior commencement of contract, Indian Coast Guard will have right to delete the same from the work package. Further, shipyard will not have any objection to undertake defect rectification/repair on equipment offloaded by ship/ICG through local vendors under DFPR and not included in work package.

12. It is requested that your **Technical comments/queries** for the defect list serials remarked "DO" by CGRHQ (NW) as per the enclosure be forwarded to reach **Headquarters Coast Guard Region (NW), Gandhi Nagar** with one copy each to CGDHQ-1, Porbandar, ICGS Vadinar and ICGS Veraval at the addresses given below by 30 Oct 2018 :-

- (a) The Commander
{for CSO (Tech)}
Coast Guard Region (NW)
Udyog Bhavan, Post Box No. 09
Sector-11, Gandhinagar – 382 010
E-mail – tech-nw@indiancoastguard.nic.in
- (b) The Commander
[for DTO]
Coast Guard District Headquarters No. 1 (Guj)
Post Box No. 25, Porbandar, Gujarat-360 575
E-mail – dhq1@indiancoastguard.nic.in
- (c) The Commanding Officer
[for STO]
ICGS Vadinar
Dist-Jamnagar, Gujarat-361 010
E-mail- cgs-vdr@indiancoastguard.nic.in
- (d) The Commanding Officer
[for STO]
ICGS Veraval, P.O Box No.3
Veraval, Gujarat- 362 265
E-mail – cgs-vrl@indiancoastguard.nic.in

13. It is requested that receipt of this letter be acknowledged.


(NK Sharma)
Commandant
Regional Technical Officer (R)
for Commander
Coast Guard Region (NW)

Enclosure: Main Defect list (Hull, Engg and Electrical)
for Interceptor Boats C-143, C-153, C-152, C-149 by e-mail.

Copy to:

The Commander
{for (DTO)}
Coast Guard District Headquarters No. 1 (Gujarat)
Post Box No. 25, Porbandar, Gujarat-360 575

The Commanding Officer
ICGS Vadinar
Dist-Jamnagar, Gujarat-361 010

The Commanding Officer
ICGS Veraval
P.O Box No.3
Veraval, Gujarat- 362 265

Other amt

HULL DEFECT LIST FOR ANNUAL U/W AND TWO YEARLY JET ROUTINE OF C-143

DL SL.	DESCRIPTION	RHQ (NW) REMARKS	
UNDER WATER WORK PACKAGE : HULL AND APPENDAGES, MAKE: ABG SHIP YARD			
HA-1001	Carry out docking and undocking of the ship as per docking plan. Scrap and clean the marine growth immediately on completion of docking and wash with fresh water. Clean the EM log and ECHO sounder pick up head. Clean all sea growth and apply paint as per paint scheme.	DO, docking in both versions. SS to provide docking plan. Painting covered under HA- 1005 area 270 M ²	
HA-1002	Renew all sacrificial anodes (both hull and jets) which are consumable 50% or more. All other anodes to be cleaned with wire brush. Qty - 08 in nos (04 nos- main engine sea chest & 04 nos shaft protection tube).	DO. Anodes CG supply	
HA-1003	Carry out UTG of critical or suspected area as per class surveyor's recommendation. Renew hull plates as necessary.	DO. Survey by class surveyor including 350 UTG points. Renewal of hull plate against AWRP as per surveyor recommendations.	
HB-1004	Remove all 03 nos. under water gratings, clean and chip to bare metal and to be fitted after painting as per paint scheme with adequate surface preparation. Renew all fasteners.	DO. Paint and material yard supply	
HA-1005	Underwater Painting Paint is to be removed using paint remover or as suitable without any damage to metallic surface. Painting of underwater hull including boot top area as per paint scheme after completion of underwater repairs. Total area is 250 Sq. mtr. Paint yard Supply	DO. Touch up paint scheme. Existing paint scheme of M/s Jotun India. Paint yard supply	
(A) Under water -Area 230 Sq mtr			
Coat	Paint name/colour	DFT	Pre treatment
1 st	Penguard HB Red	100	HPFWW, sanding with 3M sander disc with abrasive flap of 35 to 60 mesh
2 nd	Penguard HB Grey	100	
3 rd	Safeguard universal ES, Red	100	
4 th	AF SeaAlu ,DK Red	150	
5 th	AF SeaAlu, Blue	100	
6 th	AF SeaAlu ,DK Red	100	
Total		650	
Boot top - Area 20 Sqmtr			
Coat	Paint name/colour	DFT	Pre treatment
1 st	Penguard HB Red	100	HPFWW, sanding with 3M sander

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	<table border="1"> <tr> <td>2nd</td> <td>Penguard HB Grey</td> <td>100</td> <td rowspan="5">disc with abrasive flap of 35 to 60 mesh</td> </tr> <tr> <td>3rd</td> <td>Safeguard Universal ES, Red</td> <td>100</td> </tr> <tr> <td>4th</td> <td>AF SeaAlu, Black</td> <td>150</td> </tr> <tr> <td>5th</td> <td>AF SeaAlu, Black</td> <td>150</td> </tr> <tr> <td>Total</td> <td></td> <td>600</td> </tr> </table>	2 nd	Penguard HB Grey	100	disc with abrasive flap of 35 to 60 mesh	3 rd	Safeguard Universal ES, Red	100	4 th	AF SeaAlu, Black	150	5 th	AF SeaAlu, Black	150	Total		600	
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4 th	AF SeaAlu, Black	150																
5 th	AF SeaAlu, Black	150																
Total		600																
HB-1006	The following main jet system compartment (water jet sea inlet tube and water jet duct) to be degreased, fresh water washed and power tooled to ST2 STD and painted after completion of repairs as per paint scheme as mentioned below. Paints Yard supply. Water Jet compt. (Total area 20 sq mtr.)	Delete. SS																
HA-1007	Painting of draught markings and ship side blue bands to be painted. Paint yard Supply.	DO. Blue band, pennant number at transom and Indian Coast Guard in English (Port side) "आरटीए तटरक्षा" in Hindi (Stbd side) to be painted as per CGBR 382 Paint CG supply																
SHIP SIDE, SUPER STRUCTURE & MAST MAKE : ABG SHIP YARD																		
HA-1008	Carry out survey of internal and external shell plating, all welded joints and other structures by classified surveyor and report is to be rendered with LRS surveyor's recommendations.	DO. Survey by class surveyor including 100 UTG points																
WATER TIGHT DOORS AND HATCHES (DOORS - 06 Nos, HATCHES - 04 Nos.)																		
HA-1009	100% area to be visually surveyed by Surveyor for correctness and water tight integrity, carry out nondestructive testing on suspected area and carryout repair as necessary.	DO. Undertake 100 % survey and chalk test on all WT doors and hatches with class surveyor. Repairs, if any, under AWRP.																
HA-1010	Replace all rubber coaming of doors and hatches. Approx Length- 35 mtr	DO for 15 mtrs.																
HA-1011	Carry out watertight test by chalk/hose testing on the door and hatches	Deleted.																
HA-1012	Carry out cleaning of inside & outside area of both water jet buckets for Erosion /corrosion and peeling of paint film. Report is to be rendered with LRS surveyor's recommendations.	Deleted. Covered in HA-1001																
UNDERWATER PACKAGE FRESH WATER TANK, CAPACITY-01 TON																		
HA-1013	Clean and pressure test the fresh water tank to design pressure. Remove, clean and fitted back drain plug.	Deleted.																

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HA-1014	<p>Carry out 100% survey. Post degreasing, F/W Wash and Power Tool Cleaning ST 2STD fresh water tank to be painted as per paint scheme mentioned below. (Area: 10 Sq Mtrs). Paint Scheme: Jotun with dry film thickness (paint yard supply).</p> <table border="1" data-bbox="293 853 571 1973"> <thead> <tr> <th>Coat</th> <th>Paint name / colour</th> <th>DFT</th> <th>Pre treatment</th> </tr> </thead> <tbody> <tr> <td>1st</td> <td>Penguard HB, Red</td> <td>100</td> <td>HPFWW, sanding with 3M sander disc with abrasive flap of 35 to 60 mesh</td> </tr> <tr> <td>2nd</td> <td>Penguard HB, Gray</td> <td>50</td> <td></td> </tr> <tr> <td>3rd</td> <td>Penguard HB, Grey</td> <td>50</td> <td></td> </tr> <tr> <td>4th</td> <td>Penguard HB, White</td> <td>50</td> <td></td> </tr> <tr> <td>5th</td> <td>Penguard HB, White</td> <td>30</td> <td></td> </tr> <tr> <td>total</td> <td></td> <td>250</td> <td></td> </tr> </tbody> </table>	Coat	Paint name / colour	DFT	Pre treatment	1 st	Penguard HB, Red	100	HPFWW, sanding with 3M sander disc with abrasive flap of 35 to 60 mesh	2 nd	Penguard HB, Gray	50		3 rd	Penguard HB, Grey	50		4 th	Penguard HB, White	50		5 th	Penguard HB, White	30		total		250		DO. Cleaning, Survey and Touch up paint scheme. Paint CG supply. Material yard supply.
Coat	Paint name / colour	DFT	Pre treatment																											
1 st	Penguard HB, Red	100	HPFWW, sanding with 3M sander disc with abrasive flap of 35 to 60 mesh																											
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total		250																												
UNDERWATER PACKAGE FUEL, LUB, HYDRAULIC AND DIRTY OIL TANK																														
HA-1015	All above mentioned tanks to be cleaned, surveyed and tested 1.9 (Qty- 02)& 2.8 KL- (Qty- 01), Lub oil dirty tank- 01 , Capacity-300 Ltrs MATERIAL YARD SUPPLY, Dirty Oil tank, capacity- 01KI, Qty-01	DO. Cleaning and survey by class surveyor																												
GREY WATER TANK, AREA- 06 SQ MTR																														
HA-1016	<p>Remove the grey water from the tanks, clean with liquid detergents and scrap the damage paint, carry out 100% survey by surveyor. Repaint the tanks as per paint scheme. Paint yard supply.</p> <table border="1" data-bbox="904 958 1145 1973"> <thead> <tr> <th>Coat</th> <th>Paint name / colour</th> <th>DFT</th> <th>Pre treatment</th> </tr> </thead> <tbody> <tr> <td>1st</td> <td>Penguard HB, White</td> <td>125</td> <td>HPFWW, sanding with 3M sander disc with abrasive flap of 35 to 60 mesh</td> </tr> <tr> <td>2nd</td> <td>Penguard HB, Gray</td> <td>125</td> <td></td> </tr> <tr> <td>3rd</td> <td>Penguard HB, White</td> <td></td> <td></td> </tr> <tr> <td>total</td> <td></td> <td>250</td> <td></td> </tr> </tbody> </table>	Coat	Paint name / colour	DFT	Pre treatment	1 st	Penguard HB, White	125	HPFWW, sanding with 3M sander disc with abrasive flap of 35 to 60 mesh	2 nd	Penguard HB, Gray	125		3 rd	Penguard HB, White			total		250		DO. Touch up paint scheme. Paint CG supply. Tank to be dismantled/fitted from place for painting for survey of inaccessible area. All in way jobs included. Repairs, if any, under AWRP on surveyor's recommendation.								
Coat	Paint name / colour	DFT	Pre treatment																											
1 st	Penguard HB, White	125	HPFWW, sanding with 3M sander disc with abrasive flap of 35 to 60 mesh																											
2 nd	Penguard HB, Gray	125																												
3 rd	Penguard HB, White																													
total		250																												
BLACK WATER TANK, AREA- 06 SQ MTR																														
HA-1017	Remove the black water from the tanks, clean with liquid detergents and scrap the damaged paint, carry out 100% survey by the surveyor. Repaint the tanks as per the paint scheme. Paint yard supply.	DO. Touch up paint scheme. Paint CG supply. Tank to be dismantled/fitted from place for painting for survey of inaccessible area. In way jobs included. Repairs, if any, under AWRP on surveyor's recommendation.																												

At the end

EQUIPMENT: GENERAL COMPARTMENTS.NO.1 DECK ABOVE AND BELOW, MAKE: ABG SHIP YARD, AREA:230 SQ.M

HA-1018 100 % internal area including bilge to be cleaned, visually inspected and report is to be rendered with LRS surveyor's recommendations. DO. Yard to cater for survey and Touch up paint scheme of bilges. Paint CG supply

EQUIPMENT: SCUPPER AND DRAINS MAKE: ABG SHIP YARD

HA-1019 All scupper valves are to be removed and overhauled and refitted. Size: 40mm Qty: 02 No. DO.

HA-1020 Following drain pipe lines to be chemically cleaned and pressure tested. DFP

Sr	Description	Size	Testing Pressure
(a)	Wash basin drain	40 mm dia x 5 Mtrs length	01 Bar
(b)	Galley drain	40 mm dia x 3 Mtrs length	01 Bar

EQUIPMENT: BOAT DAVIT AND SLINGS MAKE: ZODIAC

HA-1021 Survey and load test davits together with all associated wire ropes, blocks and fittings for SWL. Running and Static load test for wire rope: Length- 20 m, Dia: 08 mm; 06 strand, SWL-360 kgs. DO Overhauling. Yard to render load test certificate.

EQUIPMENT: ANCHOR AND CHAIN CABLE ARRANGEMENT MAKE: SHIP EQUIPMENTS, NETHERLAND, QTY:01 NO

HA-1022 **Anchor (HHP stockless, 117 kg, Qty- 01 No.) and Cable (U2 grade DIN 766,13 mm, 110 m)**
 Dismantle the chain cable from cable locker and lay down on dock floor. Clean and paint as per the under mentioned scheme (Area 25 Sq mtr) with cable marking. Clean the anchor, survey and record the readings. Survey certificate to be rendered with class surveyor (LRS) recommendation. Marking of cable to be done as per policy in vogue. DO. Paint and NDT of Anchor and chain cable to be carried out and gauging report to be rendered. Paint yard supply

coat	Paint name/colour	DFT	Pretreatment
1 st	Blastistic black, black	75	Power tool cleaning(SA12)
2 nd	Blastistic black, black	75	according to ISO 8501.1-1988

HA-1023 Anchor chain cable to be tested and certificate to be rendered Delete.

EQUIPMENT: ANCHOR WINDLASS, MAKE: MUIR ENGG. AUS, TYPE: VRC 4500

HA-1024 Dismantle the deck gear clean all running parts. Strip and inspect windlass brake mechanism. Examine brake linings, pins, and bushes for wear and tear. Dismantled examine for wear and deterioration. Windlass to be overhauled and operation to be proved. DO overhauling including load test. Yard to provide load test certificate. Spares CG Supply. Material yard supply.

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EQUIPMENT: CABLE LOCKER MAKE: ABG SHIP YARD	
HA-1025	Clean cable locker and remove dirt and grease. Paint the cable locker as per paint scheme. Replace hardwood lining for insulation inside locker deteriorated. Clean the drain pipe from cable locker.
EQUIPMENT: OFFICERS & SAILORS BATHROOM MAKE: BROWN BROARYLITE CO. AUS	
HA-1026	Remove drain pipe of officers and sailor's bathroom & toilet and chemically clean and fit with new gaskets. length - 05 Mtrs, 125 NB, Material- SS & Length 15 Mtrs, Dia: 40 NB, Mat PVC
HA-1027	<p>General Services. The following yard services to be provided during docking period.</p> <p>(a) Suitable accommodation for one Officer, 04 sub-ordinate officer and 12 other ranks with controlled environment.</p> <p>(b) Fresh water 01 ton/day and potable drinking water 50 Ltrs/ day.</p> <p>(c) Fire main pressure 3-5 bar for 24 hours</p> <p>(d) 415V, 03 phase, 50 Hz, 20 Amp shore supply with neutral.</p> <p>(e) Separate bathroom and toilet facility for Officers, SOs and other crew members separately.</p> <p>(f) Telephone connections with fax and broad band facility separately forentire period of refit/ 02 nos mobile phone & 01 data card for internet.</p> <p>(g) One Staff car and one transport for Captain and ship's company respectively (10 hrs./100 Kms. per day)</p> <p>(h) Office space for Commanding Officer and crew separately.</p> <p>(j) Empty container in good condition for stocking the reserve LSHFHS before docking.</p> <p>(k) Galley with Gas Stove and Gas cylinder.</p>
HA-1028	Paint to be removed using paint remover or as suitable without any damage to metallic surface. Painting of decks as per paint scheme (only touch up scheme, final DFT 300) after repairs if any total area- 115 SQ MTR. Paint yard supply
HB-1029	Leakage observed from paint store in upper deck. Suspect leakage due to development of crack in plate joint. (Mat: Aluminum, approx. area - 0.5 x 0.5 feet)
HB-1030	Main engine room chequered plate foundation frame broken and uprooted at many places. Same to be welded or bolted at foundation. Inway jobs including renewal / fitment of frames along with Chequered plate. (Mat: aluminum, approx. area - 20 x 05 feet)
	DO. Survey by class surveyor. Paint yard supply.
	DO. Chemical cleaning for 50% only.
	Do as per RFIC Minutes.
	DO. Touch up paint scheme. Paint CG supply
	DO. Material yard supply.
	DO. Material yard supply.

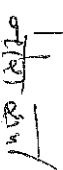
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ENGINEERING DEFECT LIST FOR ANNUAL U/W AND TWO YEARLY JET ROUTINE OF C-143

DL SL.	DESCRIPTION	RHQ (NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: SEA WATER SYSTEM		
EA-3001	Overhaul and pressure test all under water valves up to 3.0 Kg/cm ² . (Mat: SS) (E-13) (a) 250 NB butterfly valve - 02 No. (b) 150 NB butterfly valve - 02 No. (c) 80 NB butterfly valve - 01 No.	DO. Material yard supply.
EA-3002	Overhaul and pressure test all overboard valves up to 5.0 kg/cm ² . (Mat: SS). (E-13) (a) 100 NB butterfly valve - 02 Nos. (b) 80 NB butterfly valve - 04 Nos. (c) 32 NB butterfly valve - 04 Nos. (d) 40 NB butterfly valve - 03 Nos. (e) NRV 50 NB - 03 Nos.	DO including 50 NB Butterfly valve-03. Material yard supply.
UNDER WATER PACKAGE EQUIPMENT: WATER JET SYSTEM , MAKE – KAMEWA MODEL 71 S II, QTY- 02 NOS, PAC FIRM- M/S ROLLS ROYCE MARINE, MUMBAI		
EA-3003	Following Two yearly routines to be undertaken. (E-3) (a) Check mechanical damage to impeller and guide van chamber for pump unit. (b) Carry out in-situ visual inspection of shaft, shaft seal and shaft coupling. (c) Carry out in-situ inspection of bulkhead seal. (d) Carry out functional test of counter balance valve of steering and reversing system. (e) Carry out functional test on PTO pump. Readjust, if required. (f) Carry out functional test on Electric motor driven lub oil pump. Readjust Pressure, if required. (g) Carry out functional test on Hydraulic oil tank with valve manifold. Readjust Pressure, if required. (h) Check the condition of hanging anodes, Replace, if required. (i) Carry out functional test on control system. Readjust, if required. (j) Carry out functional test of alarms switches and pressure gauges (k) Carry out in-situ pressure tests of cylinder seals. (l) Carry out pressure test and crack test hydraulic hoses (m) Carry out in-situ inspection of impeller, guide vane chamber and transom	DO through PAC firm M/s Rolls Royce, Mumbai. Spares CG supply. Material yard supply.

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	flange assembly. (p) Carry out inspection of shaft & flange bolts. (q) Carry out in-situ inspection of split cone ring. (r) Carry out readjustment of shaft seal. (s) Replace the cylinder seals. (t) Replace the hydraulic hoses. (u) Replace the feedback cables. (v) Replace the anodes below shaft protection tube, on ship transom and shaft seal anode. (w) Carry out calibration of levers, feedback units and readjust indicators.	
AC PLANT, MAKE- HEINEN & HOPMAN, TYPE- GDA 5372 BA 0650		
EA-3004	02 Nos Compressor to be top overhauled. Spares CG supply (E-05)	DO through PAC firm M/s Heinen & Hopman, Kolkata. Spares & Oil CG supply. Material yard supply
EA-3005	Condenser to be chemically cleaned and pressure tested up to 1.5 Kg/cm ² . Scope of job includes renewal of gaskets, sheets and fasteners. (E-05)	DO. Material yard supply.
EA-3006	Check the Operation of two way solenoid valve and expansion valve (E-05)	DO. Material yard supply. Spares CG supply.
EA-3007	Replace compressor oil and charge refrigerant. Oil CG Supply (E-05)	DO. Material yard supply. Refrigerant and oil CG supply.
EA-3008	Vacuum and pressure test to be carried out in the system for 24 hrs.(E-05)	DO. Material yard supply. All inway jobs included.
ROUTINE OF AHU (AC), MAKE-ZECO INDIA LTD, TYPE- DLH 08 C 0198, NO. OF FITTED -01		
EA-3009	Check for corrosion and leakage of cooling coils.(E-05)	DO. Material yard supply
EA-3010	AHU blower to be overhauled and defective parts and bearings to be renewed. (Bearings yard supply). (E-05)	DO. Spares & Material yard supply
EA-3011	Blow through the cooling coil with air stream from counter flow direction. (E-05).	DO. Material yard supply. All inway jobs included.
EA-3012	Carry out chemical cleaning of cooling coils.(E-05)	DO. Material yard supply.
EA-3013	Diffuser (Qty 12 Nos.) Air control mechanism to be overhauled and proved. (E-05)	DO. Spares and material yard supply.
FM 200 FIRE FIGHTING SYSTEM, MAKE- M/s TYCO FIRE FIGHTING, TYPE- FM 200, QTY -- 01		
EA-3014	Following jobs to be carried out. (E-06) (a) Remove any nozzle from piping to allow any foreign material to blow clear. (b) Remove all pressure operated control from FM 200 cylinders (c) Open distributing valve and keep long enough cleanliness of pipe.	DO for DL SIs EA-3014 to EA-3016 through authorized firm. Recharge of gas, if any under AWRP.



	<p>(d) Blow out all distribution piping with nitrogen to ensure cleanliness of pipes</p> <p>(e) Reconnect all control heads.</p> <p>(f) Overhaul the control system, monitoring system and fire detection system.</p> <p>(g) Clean the pipes, lines system and carryout pressure testing of the system.</p> <p>(h) Weigh the cylinder and re-charge, (if weight loss is more than 10%)</p> <p>(j) Clean 02 Nos discharge nozzles Replace if required.</p>	
EA-3015	Carry out pressure switch test.	
EA-3016	Carry out electric control head test.	
<p>FIVE YEARLY ROUTINE OF OIL WATER SEPARATOR, MAKE – VICTOR MARINE, TYPE- VICTOR MINISEP C50500, NO OF FITTED – 01 PAC FIRM: M/S AMT ENVIRO CLEAN, MUMBAI</p>		
EA-3017	<p>Following jobs to be carried out. (E-07)</p> <p>(a) Drain both separator stages & remove top covers and overhaul all valves. (Qty: 07 No, Size – 20 mm).</p> <p>(b) Wash through the separator vessels using hot water and clean all valves.</p> <p>(c) Change all gasket and joints.</p> <p>(d) Reset pressure relief / water valves.</p> <p>(e) Replace first stage coalesce pack</p> <p>(f) Inspect vessel interior coating for corrosion</p>	DO through PAC firm. Spares CG supply. Material yard supply
<p>SUBMERSIBLE PUMP (MAKE- MODY INDUSTRIES, TYPE 120 NM) QTY – 02 NOS (15 TPH AND 10 TPH)</p>		
EA-3018	Check shaft seals, if worn replace it. (E-08)	Deleted.
<p>FUEL OIL CENTRIFUGE, MAKE –M/S GEA WESTAFALIA SEPARATOR GROUP, GERMANY, TYPE-OSD 6-91-067-01 NO(PAC-M/S GEA WESTAFALIA SEPARATOR GROUP,GURGAON)</p>		
EA-3019	<p>Yearly routine of centrifuge to be carried out. Scope of job includes following. (E-09)</p> <p>(a) Inspect bowel</p> <p>(b) Replace gasket (Bowl & hood)</p> <p>(c) Clean the inside of the upper section of frame</p> <p>(d) Replace gasket and retaining ring</p> <p>(e) Replace drive belt</p> <p>(f) Replace spindle ball bearing</p> <p>(g) Replace vibration absorber</p> <p>(h) Check thickness of clutch shoes and replace if necessary</p> <p>(j) Check thickness of break lining</p> <p>(k) Change oil and check bowl height</p>	DO through OEM/ PAC firm. Spares and oil CG supply. Material yard supply.

At the end

BILGE GS PUMP, MAKE- AZCUE, TYPE- CA50-3A – 01 NO		
EA-3020	Following jobs to be undertaken post dismantling the pump.(E-10) (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearance. (d) Check the wear and tear on impeller, renew if required. (e) Replace wear ring and guide ring.	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
FUEL OIL SYSTEM MAKE- THORNY CROFT AUS – 02 NOS		
EA-3021	09 in no. quick closing valve to be overhauled and pressure tested for 01 bar. (40 NB-07 Nos, 25 NB – 02 Nos, Mat: SS) (E-11).	DO. Material yard supply.
EA-3022	02 in no. Fuel Priming Hand pump of both ME to be overhauled and Proved. Type: Diaphragm. (E-11).	DO. Material yard supply.
EA-3023	Overhaul and pressure test all under water valves up to 3.0 Kg/cm2. (Mat: SS) 25 % of system valves have been catered. (E-11). (a) 40 NB Ball valve - 02 No. (b) 40 NB Ball valve (3 Piece) - 04 No. (c) 20 NB Ball valve - 01 No. (d) NRV 40 NB - 02 No. (e) NRV 20 NB - 01 No.	DO. Material yard supply.
HYDRAULIC OIL SYSTEM MAKE- THORNY CROFT – 02 NOS		
EA-3024	06 in no. quick closing valve to be overhauled and pressure tested. (E-12)	DO. Material yard supply.
EA-3025	Chemically clean pressure test system pipes and fit with new gaskets. Dia 25 mm and total length-10 Mtr Mat : SS.(25% of system pipe is catered). (E-12)	DO. Material yard supply.
EA-3026	Renew 04 nos flange arresting valves, examine tank sounding and vent pipes for defect. (E-12)	DO. Spares and material yard supply.
EA-3027	Overhaul 06 no. Ball valve of system. (E-12)	DO. Material yard supply

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SEA WATER COOLING SYSTEM

EA-3028	Following valves of sea water system to be overhauled and pressure tested for 05 bar. (25% of system valves catered) (E-13)	DO. Spares and material yard supply.																
	<table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Butterfly Valve 40 NB</td> <td>02 No</td> </tr> <tr> <td>Butterfly Valve 80 NB</td> <td>01 No</td> </tr> <tr> <td>Butterfly Valve 100 NB</td> <td>02 No</td> </tr> <tr> <td>ME Exhaust O/B discharge valve</td> <td>02 No</td> </tr> <tr> <td>Ball Valve 20 NB</td> <td>01 No</td> </tr> <tr> <td>Ball Valve 15 NB</td> <td>01 No</td> </tr> <tr> <td>Butterfly Valve 40 NB (3 Piece)</td> <td>01 No</td> </tr> </tbody> </table>	Description	Qty	Butterfly Valve 40 NB	02 No	Butterfly Valve 80 NB	01 No	Butterfly Valve 100 NB	02 No	ME Exhaust O/B discharge valve	02 No	Ball Valve 20 NB	01 No	Ball Valve 15 NB	01 No	Butterfly Valve 40 NB (3 Piece)	01 No	
Description	Qty																	
Butterfly Valve 40 NB	02 No																	
Butterfly Valve 80 NB	01 No																	
Butterfly Valve 100 NB	02 No																	
ME Exhaust O/B discharge valve	02 No																	
Ball Valve 20 NB	01 No																	
Ball Valve 15 NB	01 No																	
Butterfly Valve 40 NB (3 Piece)	01 No																	

EA-3029	Following Sea water system pipe lines to be removed, chemically cleaned, pressure test up to 05 bar and fitted with new gaskets. (Mat: SS) (25% length is catered) (E-13)	DO. Material yard supply.										
	<table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Main engine sea water system line, 125 NB</td> <td>05 Mtrs</td> </tr> <tr> <td>Main engine sea water system line, 80 NB</td> <td>05 Mtrs</td> </tr> <tr> <td>DA sea water system line, 40 NB</td> <td>05 Mtrs</td> </tr> <tr> <td>A/C sea water system line, 40 NB</td> <td>08 Mtrs</td> </tr> </tbody> </table>	Description	Qty	Main engine sea water system line, 125 NB	05 Mtrs	Main engine sea water system line, 80 NB	05 Mtrs	DA sea water system line, 40 NB	05 Mtrs	A/C sea water system line, 40 NB	08 Mtrs	
Description	Qty											
Main engine sea water system line, 125 NB	05 Mtrs											
Main engine sea water system line, 80 NB	05 Mtrs											
DA sea water system line, 40 NB	05 Mtrs											
A/C sea water system line, 40 NB	08 Mtrs											

BILGE AND FIRE MAIN SYSTEM

EA-3030	Following valves of sea water system to be overhauled and pressure tested up to 05 bar. 25 % of system valves is catered. (E-14)	DO. Spares and material yard supply.														
	<table border="1"> <tbody> <tr> <td>Ball Valve 50 NB</td> <td>02 Nos</td> </tr> <tr> <td>NRV 50 NB</td> <td>01 No</td> </tr> <tr> <td>Butterfly Valve 50 NB</td> <td>01 No</td> </tr> <tr> <td>Ball Valve 25 NB</td> <td>01 No</td> </tr> <tr> <td>SDNR valve 32 NB</td> <td>02 Nos</td> </tr> <tr> <td>Ball Valve 32 NB</td> <td>01 No</td> </tr> <tr> <td>NRV 32 NB</td> <td>01 No</td> </tr> </tbody> </table>	Ball Valve 50 NB	02 Nos	NRV 50 NB	01 No	Butterfly Valve 50 NB	01 No	Ball Valve 25 NB	01 No	SDNR valve 32 NB	02 Nos	Ball Valve 32 NB	01 No	NRV 32 NB	01 No	
Ball Valve 50 NB	02 Nos															
NRV 50 NB	01 No															
Butterfly Valve 50 NB	01 No															
Ball Valve 25 NB	01 No															
SDNR valve 32 NB	02 Nos															
Ball Valve 32 NB	01 No															
NRV 32 NB	01 No															

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	Sea chest Inlet valve 50 NB	01 No	
	SDNR valve 50 NB	01 No	
	SDNR valve 25 NB	01 No	
	Ball valve 10 NB	01 No	
	NRV 20 NB	01 No	
	NRV 25 NB	01 No	
EA-3031	30 meters fireman and bilge system pipelines to be removed chemically cleaned and pressure tested upto 04 bar and fitted back with new gaskets. (E-14)		DO. Material yard supply.
LUB OIL / DIRTY OIL SYSTEM			
EA-3032	Approx 10 meters Lub Oil system pipe lines and 05 Mtr dirty oil pipe line to be removed, chemically cleaned, pressure tested and fitted with new gaskets. (E-18)		DO. Material yard supply.
EA-3033	Carry out pressure test of flexible hoses (E-18)		DO.
EA-3034	Overhaul semi rotary hand pump. (E-18)		DO.
EA-3035	Renew flame arresting gauges. (E-18)		S&D
EA-3036	Overhaul and pressure test following system valves. (25 % of system valves is catered) (E-18)		DO. Material yard supply.
	Description	Qty.	
	High pressure ball valve 1/2" BSP	03	
	Ball valve 50 NB	01	
	Ball valve 2" BSP	01	
	Ball valve 1/2" BSP	01	
	NRV SAE 1"	01	
	Ball valve 20 NB (03 pieces)	02	
	NRV 25 NB	01	
	Ball valve 25 NB	01	
	NRV 20 NB	01	
	Ball valve 40 NB	01	
BLACK AND GREY WATER SYSTEM			
EA-3037	Overhaul 02 no. system valves (40 NB Butterfly Valve) and Carry out chemical cleaning and pressure testing of 05 mtrs system pipes at 05 bar pressure. (25 % of system pipe line is catered) (E-15)		DO. Spares and material yard supply.

At 21/11/17

EA-3038	Examine bilge vent pipes for defects. (E-15)	Delete. SS
EA-3039	Check performance of pump. (E-15)	Delete. SS. Specific defect, if any to be projected during RFIC
EMERGENCY FIRE PUMP, MAKE -AZUE & LOMBARDINI, TYPE - M036/20, QTY-01		
EA-3040	Carry out overhauling of emergency fire pump & pump to be proved. (E-19)	DO. Spares & Material yard supply.
RO PLANT, MAKE- M/S ROCHEM TYPE- RO200DT 0125 PVC - 01 NO PAC FIRM: M/S ROCHEM, MUMBAI		
EA-3041	Five yearly routine of RO plant to be carried out. Scope of job is as follows. (E-21) (a) Replace Mechanical Seals Of PK 30 Pump. (b) Calibrate Torque Wrench. (c) Calibrate Hand Conductivity Meter. (d) Inspect PS 51, PS 71, PS 81 Pressure Switches. (e) Check and replace PT 60 & potentiometer as required. (f) Check conductivity meter probe & calibrate.	DO through PAC firm. Spares CG supply. Material yard supply. Calibration certificates to be provided.
AC CONDENSER PUMP MAKE- JP PUMP TYPE- FREE FLOW CENT PUMP - 01		
EA-3042	Yearly routine on AC condenser pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-22). (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearances. (d) Check wear and tear of impeller, renew if required. (e) Replace wear ring and guide ring.	DO overhauling. Spares CG supply. Material yard supply.
GREY WATER PUMP, MAKE- AZUE, TYPE- CA 32/0.5 NO-01		
EA-3043	Yearly routine on Grey water pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-23). (a) Dismantle the pump (b) Replace bearings. (c) Replace the mechanical seals. (d) Check the tip clearances. (e) Check wear and tear on impeller renew if required. (f) Replace wear and tear ring and guide ring.	DO overhauling. Spares CG supply. Material yard supply.

5/12/20

<p>FRESH WATER PUMP, MAKE- AZCUE, TYPE- MO36/20, QTY-01</p>	
<p>EA-3044</p>	<p>Yearly routine on Fresh water pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-24).</p> <ul style="list-style-type: none"> (a) Dismantle the pump (b) Replace bearings. (c) Replace the mechanical seals. (d) Check the tip clearances. (e) Check the wear and tear on impeller renew if required. (f) Replace wear ring and guide ring.
<p>WATER SCOOTER , MAKE- YAMAHA, TYPE- VX700, NO-01</p>	
<p>EA-3045</p>	<p>Yearly routine on water scooter to be carried out and roved for optimum performance. Scope of job as follows: (E-25)</p> <ul style="list-style-type: none"> (a) Check, clean & adjust spark plug. (b) Lubricate the lubricant points (c) Check fuel system (d) Replace fuel filter (e) Check and clean fuel tank (f) Check, clean oil injection system (g) Check adjust carburetor (h) Check adjust trolling speed (i) Check carburetor throttle shaft (k) Flush cooling water passages (l) Check, clean water inlet strainer (m) Clean bilge strainer (n) Check impeller (p) Check adjust jet trust nozzle angle (q) Check adjust throttle cable (r) Check adjust choke cable (s) Check, replace stern drain plugs (t) Check charge battery (u) Check rubber coupling (v) Check engine mount
	<p>Deleted. Defect if any to be discussed during RFIC.</p>

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FUEL OIL TRANSFER PUMP, MAKE-AZCUE, TYPE-CA 32/0.5, NO-02	
EA-3046	Yearly routine on Fuel oil transfer pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-26) (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearances. (d) Check the wear and tear on impeller renew if required. (e) Replace wear ring and guide ring. (f) Replace gauges.
	DO overhauling. Spares CG supply. Material yard supply.
SANITARY PUMP, MAKE-MOYNO, USA; MODEL - 42202 3914220200, QTY-01 NO	
EA-3047	Overhaul and examine mechanical seal on the macerator, two cutter rings, the impeller & pumping element. Replace all components when show sign of wear and damage. (E-27)
	DO. Spares and Material yard supply
EXHAUST SYSTEM, MAKE- THORNY CROFT, QTY -02	
EA-3048	Overhaul 02 in Nos butterfly valves. Inways job includes renewal of promatec / ceramic gasket in the exhaust system and DP test of bulkhead flange joint on port and starboard side.(Size- 250 NB) (E-29)
	DO. Spares and Material yard supply
25 HP 2-STROKE OBM(100 HRLY ROUTINE), MAKE- MERCURY MARINER, QTY-02	
EA-3049	Clean and adjust carburetor at idling (E-28)
EA-3050	Check for salt deposits and cable connection
EA-3051	Check corrosion and deformation of anode and trim tab.
	Delete. To be undertaken through SRMO.
DIVING AIR COMPRESSOR MAKE - GOENKA ENGG GA-3 (3.5) PAC: - M/S GOENKA ENGG. & INDL. PVT, NEW DELHI	
EA-3052	Annual routine of diving air compressor to be carried out. Scope of job as follows:] (E-30) (i) 03 Nos valve to be Change (Size-15 MM) (ii) Change intake filter element 1 st stage. (iii) Check blow-off pressure of final pressure safety valve (iv) Check functional and tightness of filling valve.
	DO. Spares CG supply. Material yard supply.
EB-3053	Stbd mechanical shaft seal bellow replacement by PAC. (Spares CG supply). CGRPT(Surat) fax 344/31 dated 19 Jan 18 is relevant.
	DO through PAC firm. Spares CG supply.

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ELECTRICAL DEFECT LIST FOR ANNUAL U/W AND TWO YEARLY JET ROUTINE OF C-143

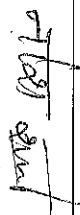
DL SL	DESCRIPTION	RHQ (NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: ICCP, MAKE: CUPROBAN, UK, QTY: 01 NOS		
LA-5001	Inspect Shield Paint and paste around the anodes and reference electrode. If peeled off, the area to be recoated.	Discuss during RFIC.
LA-5002	Inspect Anode and Reference Electrode for any mechanical damage and deterioration. Replace zinc anodes.	
LA-5003	Inspect water seepage in the junction box.	
LA-5004	Carry out functional test and calibrate all meters	
LA-5005	Carry out insulation checks w.r.t hull.	
EM LOG MAKE: M/S JHON LILLEY & GILLY, TYPE - WALEKR 4020(MK-II) QTY:01 NO, PAC FIRM - M/s ELCOME INTEGRATED		
LA-5006	Carry out calibration of EM log and compare the readings with GPS speed. Difference should be within permissible limits.	DO through PAC firm M/s Elcome Integrated.
GYRO COMPASS, MAKE- ANSCHUTZ, TYPE- STD 22, QTY -01, PAC FIRM - M/s ELCOME INTEGRATED		
LA-5007	Open Master compass and dismantle the Gyro sphere and inspect all other sub assembly. If any damage deterioration, change where ever necessary.	DO LA-5007 to LA-5008 through PAC firm M/s Elcome Integrated. Spares CG supply.
LA-5008	Change the supporting liquid and distilled water, replacing filter ring, Teflon washer, gasket and distilled water	
REPEATER COMPASS, MAKE- ANSCHUTZ, TYPE- STD-22 QTY- 05, PAC FIRM - M/s ELCOME INTEGRATED		
LA-5009	Open repeaters, clean it and apply thin coat of appropriate grease to gimbals, gear, and wheel or teeth belt if required.	DO through PAC firm M/s Elcome Integrated. Spares CG supply.
ECHO SOUNDER, MAKE- KODEN, TYPE- CVS 833, QTY -01, PAC FIRM - M/s ELCOME INTEGRATED		
LA-5010	Following jobs to be undertaken on Echo sounder (a) Check transducer for water tightness and check transducer cables for insulation. (b) Calibrate equipment & check accuracy.	DO through PAC firm M/s Elcome Integrated. Spares CG supply.

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MAIN ENGINE CONTROLS, MAKE- MTU DETROIT DIESEL, PAC FIRM – M/s MTU, PUNE/ M/S YEOMAN MARINE SERVICES PVT LTD, MUMBAI	
LA-5011	Carry out functional test and calibrate & prove all sensors and safeties of engines.
LA-5012	Check the condition to all electrical connection in LOP, Bridge & Fly Bridge for loose connection, deterioration of wiring / cables and replace if required.
FOG HORN, MAKE-ZOLLENER, TYPE- 230 V AC, QTY - 01	
LA-5013	Following jobs to be undertaken (a) Overhaul the equipment completely. (b) Check the components for sign of deterioration. Replace the deteriorated wiring, components and diaphragm.
WINDOW WIPING SYSTEM, MAKE- HEPPWARTH MARINE, TYPE-50 NM, QTY – 05	
LA-5014	The following jobs to be undertaken (a) Check the condition of rigid blades. Replace if necessary. (b) Check blade arm and spring for any damage, replace if necessary. (c) Check spray nozzle are free from blockages. (d) Carry out overhauling of motors.
FIRE & SMOKE DETECTION ALARM PANEL, MAKE- M/S TYCO MARINE SYSTEM, TYPE- T-1008, QTY- 01 No	
LA-5015	Capacity test of batteries and carry out performance check.
ELECTRIC COOK TOP (GALLEY HOT PLATES), MAKE- SHARADA ENGG, BARODA, QTY-02 NOS	
LA-5016	The following jobs to be undertaken (a) Check insulation of heating elements. Replace if required. (b) Check function of range switches and oven. Defective switches to be replaced and system to be proved. (c) Check control wiring if required to be replaced. (d) Check wire of hot plate and sleeve if required to be replaced. (e) Check end connection if defective to be replaced.
BATTERIES 200 AH / 180 AH/ 150AH, MAKE- EXIDE EXPRESS, TYPE- LEAD ACID, QTY - 16 NOS	
LA-5018	Carry out capacity test. If not satisfactory replace with new one.

Deleted.

Deleted.



SART, MAKE-M/s SAMYUNG, TYPE-SAR-09, QTY-02 NOS	
LA-5019	Carry out function test as specified in service manual. SART to be functionally tested using a radar signals as recommended in the COMSAR guidelines in manual. Deleted.
AIS, MAKE-M/s SAMYUNG, TYPE-SI-30, QTY-01 NO	
LA-5020	Carry out function test as specified in service manual using a radar signals as recommended guidelines. Deleted.
ECDIS, MAKE- FURUNO, TYPE- FEA-2107, QTY- 01	
LA-5021	Carry out service as per instructions laid down in maintenance manual. Deleted.
TELEPHONE EXCHANGE, MAKE- ALPHACOM, TYPE- STENTOFON, QTY- 01 NO	
LA-5022	Carry out functional test of all components as per maintenance manual. Deleted.
DISTRIBUTION BOARDS, MAKE- MARINE ELECTRICAL, QTY – 08 NOS	
LA-5023	Carry out functional test of all MCBs, replace defective MCB if any. Deleted. SS
STARTER PANELS, MAKE- MARINE ELECTRICAL, QTY – 08 NOS	
LA-5024	Carry out functional test of all overload relays and replace defective if any. DO. Spares supply as per RFIC minutes.
DIESEL ALTERNATOR , MAKE – CATER PILLAR, QTY- 02, PAC FIRM- M/S GMMCO	
LA-5025	Inspect, clean winding, re-varnish and improve insulation, if required
LA-5026	Overhaul full Generator assembly including AVR, battery starter and space heater.
LA-5027	Check capacity of generator with full load tank test 100%, 75% & 50%.
LA-5028	Following safety trips and alarm sensor to be checked and calibrated, if required
	(a) Low lub oil pressure
	(b) High water temperature
	(c) Over speed trip
	DO for LA-5025 to LA-5028 through PAC firm M/s GMMCO. Spares CG supply. Material yard supply as per RFIC minutes. Carry out load trials on ship's load.

5/12/21
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MOTORS

Following motor overhauled. Job includes checking of insulation, varnishing, renewal of bearing and painting.

LA-5029	SL	Description	QTY	DO. Spares yard supply as per RFIC minutes. Yard to quote for individual motor.
	(a)	Supply/ Exhaust blower motor (5.5/7.5 KW)	02 Nos	
	(b)	AHU motor (2.2 KW)	01 No	
	(c)	Galley & bath room Exhaust motor (215/319W)	02 Nos	
	(d)	Anchor windlass motor (04 KW)	01 No	
	(e)	Water scooter Davit & Gemini Winch motor (2.6 kw)	02 Nos	
	(f)	Fresh Water Pump motor (0.7 KW)	01 No	
	(g)	Grey Water Pump motor (0.55 KW)	01 No	
	(h)	Sprinkling Water Pump motor (1.1KW)	01 No	
	(j)	Fire main Pump motor (2 KW)	01 No	
	(k)	FO Transfer Pump motor (0.55 KW)	01 No	
	(l)	A/C condenser pump motor	01 No	
	(n)	Exhaust fan (Jet comp/silencer comp/AC comp) 215 W	02 Nos	

TANK MONITORING SYSTEM, MAKE-ARISTON, NORWAY, QTY-01 NO, PAC FIRM – M/S ELCCOME INTEGRATED

LA-5030	Tank level monitoring system to be overhauled and sensor (09 Nos) to be calibrated.	DO through PAC firm. Spares CG supply
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EPIRB : MAKE –SAILOR, TYPE- SE 406, QTY -01 NO

LA-5031	Carry our performance checks.	Deleted.
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SEARCH LIGHT, MAKE- FRANCIS, TYPE – FX-380 RC, QTY-01 NO

LA-5032	Performance checks to be carried out.	DO. Spares supply as per RFIC minutes
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RADAR : MAKE – FURUNO, TYPE – FAR 2117 FAR 28 x 7 Series, QTY-01 NO, PAC FIRM- M/S AS MOLOOBHOY

LA-5033	Carry out service by service engineer as per instruction laid down in Maintenance manual	DO through PAC firm M/s AS Molooobhoi. Spares CG supply.
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WIND MEASURING SYSTEM, MAKE-WAKER, TYPE-7070 DATA P248, QTRY-01 NO	
LA-5034	Following jobs to be undertaken (a) Check speed sensor bearing. (b) Renew the damping fluid if required for wind direction sensor. DO. Spares & Material yard supply
GPS NAVIGATOR, MAKE-M/S KODEN ELECTRIC, TYPE- KGP-920, QTY-01 NO	
LA-5035	Carry out functional checks of all switches, light and panel. Deleted.
MF/HF TX/RX 150/250W CONTROL UNIT CU 5100, MAKE- SAILOR, QTY-01 NO	
LA-5036	Performance checks to be carried out by service engineer as per service manual Deleted.
VHF TX/RX, MAKE-SAMYUNG, TYPE-STR 6000A, QTY-02	
LA-5037	Performance checks to be carried out by service engineer as per service manual Deleted.
HF POWER SUPPLY UNIT/BATTERY CHARGER, MAKE-SAILOR/ELCOME, TYPE-24V DC, QTY-01 NO	
LA-5038	Performance checks to be carried out by service engineer as per service manual Delete.
GMDSS ALARM UNIT, MAKE-SAILOR, TYPE-AP 5065, QTY-01 NO	
LA-5039	Performance checks to be carried out. Deleted.
DEEP FREEZER MAKE- TROPICALISEC, QTY-01 NO	
LA-5040	Replace defective parts if any as required. Delete.
ALL MODE COMMUNICATION RECEIVER 100KHZ TO 2600MHZ, MAKE- M/S YAESU, TYPE-VR 5000, QTY-01 NO	
LA-5041	Performance checks to be carried out as per service manual. Deleted.
NAVTEX RECEIVER, MAKE-SAMYUNG, TYPE-SAN300, QTY-01 NO	
LA-5042	Carry out optimum performance check. Deleted.
PA SYSTEM, MAKE-M/S KODEN ELECTRIC, VINGTOR STEENHAMS, TYPE-VPA 120, QTY-01 NO	
LA-5043	Performance checks to be carried out as per maintenance manual and replace defective components, if any. Deleted.
MAIN SWITCH BOARD, MAKE-MARINE ELECTRICAL, TYPE-1727-01RS, QTY-01 NO	
LA-5044	Check the switches and whole wiring of main switch board for sign of deterioration. Replace the deteriorated wiring/ components. Calibrate the all meters, if defective replace. DO calibration of meters only. Yard to provide calibration certificate to be provided. SS to indicate specification of meters during RFIC. <i>At 27 21/11</i>

BATTERY CHARGER, MAKE-MARINE ELECTRICAL, QTY-04 NO(240V, 1PH, 50HZ/24V, DC, 50A-02 NOS + 415V, 3PH, 50HZ/24V, DC-02 NOS)

LA-5045	Overhaul the entire battery charger. The entire system to be checked and proved. Replaced the deteriorated wiring/ components.		DO. Spares supply as per RFIC minutes.
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NAVIGATION LIGHT CONTROL PANEL, MAKE-NORSE LIGHT, QTY-01 NO

LA-5046	The following jobs to be undertaken (a) Navigation light control panel to be checked and proved. (b) Control panel PCB defective to be repaired. (c) Check all flood light and replace if defective.		DO. Spares CG supply.
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24V DISTRIBUTION BOARD, MAKE-MARINE ELECTRICAL QTY-02 NOS

LA-5047	Following meters to be calibrated (a) Voltmeter – 02 Nos (b) Ammeters – 02 Nos		DO. Yard to provide calibration certificate.
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of 20 21/11

HULL DEFECT LIST FOR ANNUAL U/W AND FIVE YEARLY JET ROUTINE OF C-153

DL SL.	DESCRIPTION	RHQ(NW) REMARKS														
UNDER WATER WORK PACKAGE : HULL AND APPENDAGES, MAKE: ABG SHIP YARD, LOCATION: GENERAL																
HA-1001	Carry out Docking and undocking of the ship as per Docking plan. Scrap and clean the marine growth immediately on completion of Docking and wash with fresh water. Clean the EM log and Echo sounder pick up head. Clean all sea growth and apply paint as per paint scheme. Both version of Docking to be carried out. (touch up scheme-Jotun) (H-18)	DO. Docking in both versions. Docking plan to be provided by ship. Painting covered in HA-1005														
HA-1002	Renew all sacrificial anodes (both hull and jets) which are consumed 50% or more. All other anodes to be cleaned with wire brush. Qty – 08 in nos (04 nos main engine sea chest and 04 nos shaft protection tube.(H-18)	DO. Anodes CG Supply														
HA-1003	Carry out UTG of critical or suspected area as per class surveyor's recommendation (Total UTG points: 350). Renew hull plates as necessary. Class surveyor certification to be arranged by yard.(H-18). 500 Kg of aluminum plate to be renewed.	DO UTG 350 points under surveyor presence Renewal of hull plate against AWRf as per surveyor recommendations. Material yard supply.														
HA-1004	Remove all 03 nos. under water gratings, clean and chip to bare metal and to be fitted after painting as per paint scheme with adequate surface preparation. Renew all fasteners (Material –SS) Paint Scheme -Jotun (H-18)	DO. Paint and material yard supply														
HA-1005	Underwater Painting. Touch up paint scheme of under water, boot Top and jet tunnel to be carried out as per CGBR 382 annexure 4(B). Total area 250 sq. mtr. Paint yard supply Paint Scheme -Jotun (H-18). Following paint scheme to be carried out.	DO. Touch up paint scheme of M/s Jotun, FRC scheme paint yard supply														
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1	Safe guard universal ES, grey															
1	Sealion tiecoat red															
1	Sealion repulse grey															
1	Sealion Repulse Black															
	Final coat after 04 coat on Boot Top only.															

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HA-1006	The main jet system compartment to be cleaned with paint remover, scrapers and repainted as per paint scheme. Inner circumference of 02 nos jet transom plates to be painted on completion of jet routines. Paint Scheme -Jotun(H18.)	DO. Paint to be removed using paint remover/scrapper without damage to surface. Painting covered under HA-1005.															
HA-1007	Paint draught markings, ship side blue bands and Indian Coast Guard name to be written as per annexure 5L to 5P of CGBR-382.	DO, Blue band, pennant number at transom and Indian Coast Guard in English (Port side) "भारतीय नौदल" in Hindi (Stbd side) to be painted as per CGBR 382. Paint CG supply															
SHIP SIDE SUPER STRUCTURE, UPPER DECK FITTINGS & MAST, MAKE: ABG SHIPYARD, LOCATION: GENERAL																	
HA-1008	Check for deterioration of hull plates and handles for physical damage.(H-01)	Do. Survey by class surveyor cater for 100 UTG points															
HA-1009	Ship side and super structure paint peeled off. Ship side and superstructure along with upper deck fittings to be painted as per Jotun paint scheme. (ship side area: 240 Sq. Mtrs and Super Structure area: 115 Sq. Mtrs) (H-01) Ship side	DO. Touch up paint scheme. Paint CG supply															
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Penguard HB, Grey	100	40															
Hardtop XP, White	50	20															
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WATER TIGHT DOORS AND HATCHES (DOORS-06 Nos, HATCHES- 04 Nos), LOCATION: GENERAL																	
HA-1010	Carry out watertight test by chalk/hose testing on the Door and hatches (H-02)	DO. Undertake 100% survey and chalk test on all WT doors and hatches with class Surveyor. Repairs if any under AWRf.															
HA-1011	100% survey of all water tight Doors and hatches to be carried out. Repair defect if any and replace defective rubber seating due to fair wear and tear and re test Doors and hatches for water tightness. (H-02)																

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HA-1012	Carry out cleaning of inside & outside area of both water jet buckets for Erosion/corrosion and peeling off paint film. Report is to be rendered with class surveyor's recommendations.	Delete. Covered in HA-1001						
GENERAL COMPARTMENTS. NO.1 DECK ABOVE AND BELOW, MAKE: ABG SHIP YARD, AREA: 230 SQ MTRS.								
HA-1013	100% area to be visually surveyed, carry out non-destructive test on suspected area and carry out repair as necessary.(H-04) Area: Engine room Bilge 90m ² , water jet and Silencer compartment-30m ² . Other areas 110 sqr mtr. Paint scheme Jotun : Penguard HB grey (03 Coat)	DO. Yard to cater for survey and touch up paint scheme only for bilges. Paint CG supply						
FRESH WATER TANK, CAPACITY-01 TON, LOCATION: STBD SIDE BELOW LADDER IN AC COMPARTMENT								
HA-1014	Clean and pressure test the fresh water tank to design pressure up to 3 bar/as per trials protocol). Renew manhole cover gaskets.(H-10)	DO only cleaning. Pressure test if any repairs undertaken on tank.						
HA-1015	Remove the fresh water from tanks, clean and scrap the paint and carry out 100% survey. Repaint the tanks as per full paint scheme. (Surface Area: 10 Sq Mtrs). Paint Scheme: Jotun with dry film thickness. <table border="1" data-bbox="858 1137 1093 1998"> <thead> <tr> <th>Paint name, DFT colour</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>Penguard HB, 100 (First and final coat) White</td> <td>20</td> </tr> <tr> <td>Penguard HB, 100 (Second coat) Grey</td> <td>20</td> </tr> </tbody> </table>	Paint name, DFT colour	QTY	Penguard HB, 100 (First and final coat) White	20	Penguard HB, 100 (Second coat) Grey	20	Do. Survey and Touch up paint scheme. Paint CG supply Material yard supply as per RFIC minutes
Paint name, DFT colour	QTY							
Penguard HB, 100 (First and final coat) White	20							
Penguard HB, 100 (Second coat) Grey	20							
FUEL, LUB, HYDRAULIC AND DIRTY OIL TANK LOCATION: MAIN ENGINE ROOM/SILENCER COMPARTMENT/ENGINE ROOM ALLEY WAY								
HA-1016	Following tanks to be internally cleaned /surveyed and pressure tested.(H-15) (a) Fuel Tank - 05 Nos. (3.6 Kl -02 Nos, 3.0 Kl -01, 1.9 Kl -02) (b) Lub oil tank: 01 (Cap-300 Ltrs) (c) Dirty Oil tank : 01 KL (01 no).	Do. Cleaning and survey by class surveyor						

OK

<p>HA-1017</p> <p>Clean, Scrap and re-paint outer surface of tanks as per paint scheme (Total Area for outer surface for tanks - 15 Sq Mtr). Scope of job includes removal and replacement of lagging on 02 Nos fuel tanks.(Area of lagging : 05 Sq Mtrs, Lagging Material: Glass wool and aluminum foil), Following paint scheme to be carried out.</p> <table border="1" data-bbox="1061 257 1220 1086"> <thead> <tr> <th>Coat (nos)</th> <th>Paint name/colour</th> <th>DFT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Penguard HB, Grey</td> <td>100</td> </tr> <tr> <td>1</td> <td>Penguard HB, Red</td> <td>100</td> </tr> <tr> <td>1</td> <td>Penguard HB, Grey</td> <td>100</td> </tr> </tbody> </table>	Coat (nos)	Paint name/colour	DFT	1	Penguard HB, Grey	100	1	Penguard HB, Red	100	1	Penguard HB, Grey	100	<p>Delete</p>
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1	Penguard HB, Grey	100											
1	Penguard HB, Red	100											
1	Penguard HB, Grey	100											
<p>GREY WATER TANK, AREA-06 SQ MTR, CAPACITY-01 TON, LOCATION: PORT SIDE BELOW IN AC CMPT AND EP'S WC</p>													
<p>HA-1018</p> <p>Remove gray water tank, Clean with liquid detergents and scrap the damaged paint. Carry out 100% survey by surveyor.</p> <p>Renew manhole cover gaskets. Re-paint the tank as per paint scheme, Cap-01 Ton, Paint yard supply. Scope of job for removal of tank includes:(H-16)</p> <p>(a) Removal and re-fittment of bath wash basin and floor and adjacent area of AC compartment including associated repairable area of adjacent compartments for clearance of tank.</p> <p>(b) Renewed fasteners on tank joints.</p> <p>(c) Removal and re-fittment of AC plant including accessories and pipe line.</p> <table border="1" data-bbox="263 257 582 1086"> <thead> <tr> <th>Coat (nos)</th> <th>Paint name/colour</th> <th>DFT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Penguard HB, Grey</td> <td>100</td> </tr> <tr> <td>1</td> <td>Penguard HB, Red</td> <td>100</td> </tr> <tr> <td>1</td> <td>Penguard HB, Grey</td> <td>100</td> </tr> </tbody> </table>	Coat (nos)	Paint name/colour	DFT	1	Penguard HB, Grey	100	1	Penguard HB, Red	100	1	Penguard HB, Grey	100	<p>DO. Touch up paint scheme. Paint CG supply.</p> <p>Tank to be dismantled/fitted from place for painting and survey of inaccessible area. Inway job included.</p>
Coat (nos)	Paint name/colour	DFT											
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1	Penguard HB, Red	100											
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BLACK WATER TANK, AREA – 06 SQ MTR, LOCATION: STBD SIDE BELOW LADDER IN AC CMPT																					
HA-1019	<p>Remove the black water tank. Clean with liquid detergents and scrap the damaged paint, carry out 100% survey by the Surveyor. Renew manhole covers gaskets. Repaint the tanks as per the paint scheme. Paint yard supply. Scope of job for removal of tank includes:</p> <p>(a) Removal and re-fitting of floor from main alleyway ladder to entire magazine compartment including associated repairable area of adjacent compartment</p> <p>(b) Cutting of two side aluminum bulkhead plate between magazine compartment and ladder area and CO bath room and including associated repairable area of adjacent compartment</p> <p>(c) Removal of main alleyway ladder</p>																				
SCUPPER AND DRAINS ; MAKE: ABG SHIP YARD, LOCATION: SHIP SIDE																					
HA-1020	02 Nos, 40MM, scupper valves are to be removed, overhauled and refitted with new scupper lips.(H-08)																				
HA-1021	Following drain pipe lines to be chemically cleaned pressure tested and refit with new gaskets.(H-08)																				
	<table border="1"> <thead> <tr> <th>Sl</th> <th>Description</th> <th>Size</th> <th>50 % of drain line</th> <th>Testing Pressure</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Wash basin drain</td> <td>40 mm dia x 5 Mtrs length</td> <td>3 mtrs</td> <td>01 Bar</td> </tr> <tr> <td>(b)</td> <td>Galley drain</td> <td>40 mm dia x 3 Mtrs length</td> <td>2 mtrs</td> <td>01 Bar</td> </tr> <tr> <td>(c)</td> <td>Dining hall drain</td> <td>40 mm dia x 2 Mtrs length</td> <td>1 mtr</td> <td>01 Bar</td> </tr> </tbody> </table>	Sl	Description	Size	50 % of drain line	Testing Pressure	(a)	Wash basin drain	40 mm dia x 5 Mtrs length	3 mtrs	01 Bar	(b)	Galley drain	40 mm dia x 3 Mtrs length	2 mtrs	01 Bar	(c)	Dining hall drain	40 mm dia x 2 Mtrs length	1 mtr	01 Bar
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BOAT DAVIT, GEMINI WINCH AND SLINGS MAKE: ZODIAC, LOCATION: Q/DECK																					
HA-1022	<p>Check all high speed bearings and renew. Overhaul the gearbox. Renew the seals, oil and damaged bearings. Carry out survey and load test of davits together with all associated wire ropes, blocks and fittings for SWL (running and Static load test). Rope length - 40 mtrs, Dia: 08 mm; 06 strand. Load test certificate to be provided. Safe working load – 360 kgs (H-07)</p>																				
	<p>DO. Touch up paint scheme Paint CG supply.</p> <p>Tank to be dismantled/fitted from place for painting and survey of inaccessible area. Inway job included.</p> <p>DO. Material yard supply.</p> <p>Delete. DFP.</p> <p>DO Overhauling load test certificate to be provided.</p> <p>Spare CG supply. Material yard supply</p>																				

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ANCHOR AND CHAIN CABLE ARRANGEMENT MAKE: SHIP EQUIPMENTS, NETHERLAND, QTY: 01 NO., LOCATION: FORE CASTLE

<p>HA-1023 Anchor (HHP stockless, 117 kg, Qty-01 No.) and Cable (U2 grade DIN 766, 13 mm, 110 m). (H-11)</p> <p>Arranging, scraping, repainting of cable with paint scheme - Jotun (Ballistic black, Black (02 coat, DFT -75) to be carried Out. Job includes dismantle the chain cable from cable locker and lay Down on Dock floor, Total paint to be removed for inspection and re paint. Marking of cable to be carried out.</p>	<p>DO Painting, visual inspection and gauging and record readings. Additional job if any under AWRP. Paint yard supply</p>
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DIVING SET, FACE MASK, MAKE: DIVATOR MK II, QTY: 02 NOS (EACH) & BASCCA SET, MAKE: SCOTT SIGMA, MODEL: 9.72 KG, QTY:03, LOCATION: QUARTERDECK

<p>HA-1024 Carry out pressure test. Pressure test certificate to be provided. (H-21)</p>	<p>Delete. DFP.</p>
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ANCHOR WINDLASS, MAKE: MUIR ENGG. AUS, TYPE: VRC 4500, LOCATION: FORE CASTLE

<p>HA-1025 Following jobs to be carried out: (H-12)</p> <ul style="list-style-type: none"> (a) Strip and inspect windlass break mechanism (b) Examine brake linings, pin and bush for wear and tear renew as necessary (c) Drain oil from gear box and refill fresh oil (d) Cable holder gypsy and drums to be removed. Examine for gear and deteriorations. Defect to be made good (e) Windlass to be overhauled (f) Non destructive test of anchor windlass, bollards, fear less and stag horn be carried out. 	<p>Do. Overhauling undertake load test and certificate to be provided. Spares CG Supply. Material yard supply.</p>
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CABLE LOCKER MAKE: ABG SHIP YARD, LOCATION: PORT/FORE CASTLE

<p>HA-1026 Following jobs to be carried (H-13)</p> <ul style="list-style-type: none"> (a) Clean out locker and removed all ducts. Examine the structure paying particular attention to that in vicinity of cable clench and ship side plating. (b) Replace hard wood linings for insulation inside cable locker <p>Examine and clean drain pipe from chain locker to another pocket.</p>	<p>Do for sl (a) only survey by class surveyor. Paint yard supply</p>
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OFFICERS & SAILORS BATHROOM MAKE: BROWN BROARYLITE CO. AUS, LOCATION: OFFICERS/SAILOR/WR

<p>HA-1027 Remove drain pipe of Officers and sailor's bathroom & toilet and clean with soap and fit with new gaskets. Length-05 mtrs, 125 NB, Material - SS & Length 15 mtrs, Dia 40 NB,,Mat PVC (H-14)</p>	<p>DO chemical cleaning for 50% only</p>
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DECKS (MAIN DECK AND FLAG DECK INCLUDING BRIDGE TOP)

HA-1028	Paint is to be removed using paint remover or as suitable without any damage to metallic surface. Painting of decks as per paint scheme after repair if any. Total area 125 m ² . Final DFT 300 micron. Following paint scheme to be carried out.	Do. Touch up paint scheme. Paint CG supply																								
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HA-1029	Survey of bollards (08 nos) and towing bollards (02 Nos.) to be undertaken with class surveyor for soundness of structure and load test to be carried out. Certificate to be issued.	DO Survey and NDT by class surveyor
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GENERAL / YARD SERVICES

HA-1030	<p>The following yard services to be provided during Docking period.</p> <p>(a) Suitable, hygienic and comfortable accommodation for two Officer, 03 sub-ordinate officer and 10 other ranks with controlled environment within vicinity of 10 km from yard.</p> <p>(b) Fresh water 01 ton/day and portable drinking water 100 liters/day.</p> <p>(c) Fire main pressure 3-5 bar for 24 hours.</p> <p>(d) 415 V, 03 phase, 50 Hz, 25 Amp shore supply with neutral.</p> <p>(e) Separate bathroom and toilet facility for Officers, SOs and other crew members.</p> <p>(f) Telephone connections with fax and broadband facility</p> <p>Separately for entire period of refit/02 nos mobile phone & 01 data card for internet.</p> <p>(g) One Staff car and one transport for ship's company respectively ((12 hrs./120 Kms. per day). Transport utility commences and terminates at gangway.</p> <p>(h) Office space for Commanding Officer and crew separately with air conditioner.</p>	Do as per RFIC minutes
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<p>(j) Empty container in good condition for stocking the reserve LSHFHSO before Docking. (k) Galley with Gas stove and Gas cylinder. (l) Yard to provide emergency light and compressed air as when required basis. (m) Crane facility to be provided as and when required.</p>	
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J. B. Smith

ENGINEERING DEFECT LIST FOR ANNUAL U/W AND 5 YEARLY JET ROUTINE OF C-153

DL SL.	DESCRIPTION	RHQ(NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: SEA WATER SYSTEM , LOCATION: MER		
EA-3001	Overhaul and pressure test all under water valves up to 3.0 Kg/cm2. (Mat: SS) (E-13) (a) 250 NB butterfly valve - 02 No. (b) 150 NB butterfly valve - 02 No. (c) 80 NB butterfly valve - 01 No.	DO. Material yard supply.
EA-3002	Overhaul and pressure test all overboard valves up to 5.0 kg/cm2. (Mat: SS). (E-13) (a) 100 NB butterfly valve - 02 Nos. (b) 80 NB butterfly valve - 04 Nos. (c) 32 NB butterfly valve - 04 Nos. (d) 40 NB butterfly valve - 03 Nos. (e) NRV 50 NB - 03 Nos.	DO including 50 NB Butterfly valve-03. Material yard supply.
FIVE YEARLY UNDER WATER PACKAGE EQUIPMENT: WATER JET SYSTEM, MAKE KAMEWA MODEL 71 S II (PUMP UNIT, IMPELLER SHAFTING, GUIDE VANE AND CHAMBER), QTY : 02 NOS (PORT & STBD) PAC FIRM M/S ROLLS ROOYCE MARINE, MUMBAI. LOCATION: WATER JET COMPARTMENT		
EA-3003	Following five yearly routines to be undertaken. (E-3) (a) Carry out in-situ inspection of impeller, guide vane chamber and transom flange assembly. } Pump Unit (b) Replace the hub bearing and seal (c) Replace O ring in pump unit (d) Replace bolt of impellers /stub shaft in pump unit (e) Carry out visual inspection of shaft, shaft seal and shaft coupling (f) Carry out in-situ inspection of bulkhead seal (g) Carry out grease renewal of support bearing (h) Carry out inspection of shaft and flange bolt } Impeller Shafting (j) Carry out Refurbish and readjustment of shaft seal (k) Replace the split cone ring (l) Inspect mechanical interface between impeller shaft and impeller shaft journal	DO through PAC firm M/s Rolls Royce, Mumbai. Spares CG supply. Material yard supply.

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	<p>(m) Replace the cylinder seals (n) Replace the hydraulic hoses (p) Replace the feedback cables (q) Replace the bushings system (r) Replace the locking plates (s) Carry out through inspection of complete plate areas (t) Check the condition of hanging Anodes, replace, if required. (u) Replace the anodes below shaft protection tube, on ship transom and shaft seal anode. (v) Carry out the function test of the control system, readjust if required. (w) Carry out functional test of alarms and switches and pressure gauge (x) Carry out calibration of levers, feedback units and readjust indicators (y) Carry out functional test of counter balance valve of steering and reversing system (z) Carry out functional test on PTO pump re-adjusts, if required. (aa) Carry out functional test on Electric motor driven lub oil pump. Re-adjust pressure, if required. (ab) Carry out functional test on hydraulic oil tank with valve manifold. Re-adjust pressure, if required. (ac) Renew the complete hydraulic oil of the system. (ad) replace the counter balance valve (V41, V42 & V18)</p> <p style="text-align: right;">} Steering and reversing gear</p> <p style="text-align: center;">} Cathodic Protection</p> <p style="text-align: center;">} Control system</p> <p style="text-align: center;">} hydraulic and Oil system</p>	
<p>EB-3004</p>	<p>02 Nos Transom Flanges to be renewed as per recommendation of IRS during last refit. Transom flanges being procured centrally by CGHQ.</p>	<p>DO through PAC firm. Spares CG supply. All inway jobs included.</p>
<p>EB-3005</p>	<p>Removal and fitment of 04 in no. Interceptors of Humphree system and jet guard to be undertaken as part of renewal of transom flanges.</p>	<p>DO through PAC firm M/s Elcome Integrated Systems, Mumbai. Spares CG supply.</p>

HUMPHREE SYSTEM MAKE: HUMPHREE, SWEDEN, MODEL : 4XH1250, PAC: M/S ELCOME INTEGRATED SYSTEMS, MUMBAI

at last

AC PLANT, MAKE-HEINEN & HOPMAN, TYPE- 6DA 5372 BA 0650,PAC FIRM : HEINEN & HOPMAN ENGINEERING INDIA PVT LTD, KOLKATA, LOCATION: AC COMPARTMENT		
EA-3006	02 Nos Compressor to be top overhauled. spares CG supply (E-05)	DO through PAC firm M/s Heinen & Hopman, Kolkata. Spares and oil CG supply. Material yard supply.
EA-3007	Condenser to be chemically cleaned and pressure tested up to 1.5 Kg/cm ² . Scope of job includes renewal of gaskets, sheets and fasteners. (E-05)	DO. Material yard supply.
EA-3008	Check the Operation of two way solenoid valve and expansion valve (E-05)	DO. Material yard supply. Spares CG supply.
EA-3009	Replace compressor oil and charge refrigerant. Oil CG Supply (E-05)	DO. Material yard supply. Refrigerant and oil CG supply.
EA-3010	Vacuum and pressure test to be carried out in the system for 24 hrs.(E-05)	DO. Material yard supply. All inway jobs included.
ROUTINE OF AHU (AC), MAKE-ZECO INDIA LTD, TYPE- DLH 08 C 0198, NO. OF FITTED -01, LOCATION: BELOW W/H		
EA-3011	Check for corrosion and leakage of cooling coils.(E-05)	DO. Material yard supply
EA-3012	AHU blower to be overhauled and defective parts and bearings to be renewed. (E-05)	DO. Spares and material yard supply.
EA-3013	Blow through the cooling coil with air stream from counter flow direction. (E-05).	DO. Material yard supply. All inway jobs included.
EA-3014	Carry out chemical cleaning of cooling coils.(E-05)	DO. Material yard supply
EA-3015	Diffuser (Qty 12 Nos.) Air control mechanism to be overhauled and proved. (E-05)	DO. Spares and material yard supply.
FM 200 FIRE FIGHTING SYSTEM, MAKE – M/S TYCO FIRE FIGHTING, TYPE-FM 200, QTY – 01, LOCATION: QUARTER DECK		
EA-3016	Following jobs to be carried out. (E-06) (a) Remove any nozzle from piping to allow any foreign material to blow clear. (b) Remove all pressure operated control from FM 200 cylinders (c) Open distributing valve and keep long enough cleanliness of pipe. (d) Blow out all distribution piping with nitrogen to ensure to ensure cleanliness of pipes (e) Reconnect all control heads. (f) Overhaul the control system, monitoring system and fire detection system.	DO for DL Sls EA-3016 to EA-3018 through authorised firm. Recharge of gas if any under AWRP.

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	(g) Clean the pipes, lines system and carryout pressure testing of the system. (h) Weigh the cylinder and re-charge, (if weight loss is more than 10%) (i) Clean 02 NOS discharge nozzles Replace if required.	
EA-3017	Carry out pressure switch test.	
EA-3018	Carry out electric control head test.	
FIVE YEARLY ROUTINE OF OIL WATER SEPARATOR, MAKE – VICTOR MARINE, TYPE- VICTOR MINISEP C50500, NO OF FITTED – 01 PAC FIRM: M/S AMT ENVIRO CLEAN, MUMBAI, LOCATION:MER		
EA-3019	Following jobs to be carried out. (E-07) (a) Drain both separator stages & remove top covers and overhaul all valves. (Qty: 07 No, Size – 20 mm). (b) Wash through the separator vessels using hot water and clean all valves. (c) Change all gasket and joints. (d) Reset pressure relief / water valves. (e) Replace first stage coalesce pack (f) Inspect vessel interior coating for corrosion	DO through PAC firm. Spares CG supply. Material yard supply.
SUBMERSIBLE PUMP (MAKE- MODY INDUSTRIES, TYPE 120 NM) QTY – 02 NOS (15 TPH AND 10 TPH), LOCATION: MER		
EA-3020	Check shaft seals, if worn replace it. (E-08)	Delete.
FUEL OIL CENTRIFUGE, MAKE –M/S GEA WESTAFALIA SEPARATOR GROUP, GERMANY, TYPE-OSD 6-91-067-01 NO, PAC- M/S GEA WESTAFALIA SEPARATOR GROUP,GURGAON, LOCATION: MER		
EA-3021	Yearly routine of centrifuge to be carried out. Scope of job includes following. (E-09) (a) Inspect bowl (b) Replace gasket (Bowl & hood) (c) Clean the inside of the upper section of frame (d) Replace gasket and retaining ring (e) Replace drive belt (f) Replace spindle ball bearing (g) Replace vibration absorber (h) Check thickness of clutch shoes and replace if necessary (i) Check thickness of break lining (k) Change oil and check bowl height	DO through OEM/PAC firm. Spares and oil CG supply. Material yard supply.

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BILGE GS PUMP, MAKE- AZCUE, TYPE- CA50-3A – 01 NO, LOCATION: MER	
EA-3022	<p>Following jobs to be undertaken post dismantling the pump.(E-10)</p> <p>(a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearance. (d) Check the wear and tear on impeller, renew if required. (e) Replace wear ring and guide ring.</p>
	DO overhauling. Spares CG supply. Material yard supply.
FUEL OIL SYSTEM MAKE- THORNY CROFT AUS – 02 NOS, LOCATION: MER	
EA-3023	09 in no. quick closing valve to be overhauled and pressure tested for 01 bar. (40 NB -07 Nos, 25 NB – 02 Nos, Mat: SS) (E-11).
EA-3024	02 in no. Fuel Priming Hand pump of both ME to be overhauled and Proved. Type: Diaphragm. (E-11).
EA-3025	Overhaul and pressure test all under water valves up to 3.0 Kg/cm2. (Mat: SS) 25 % of system valves have been catered. (E-11). (a) 40 NB Ball valve - 02 No. (b) 40 NB Ball valve (3 Piece) - 04 No. (c) 20 NB Ball valve - 01 No. (d) NRV 40 NB - 02 No. (e) NRV 20 NB - 01 No.
	DO. Material yard supply. DO. Material yard supply. DO. Material yard supply.
HYDRAULIC OIL SYSTEM MAKE- THORNY CROFT – 02 NOS, LOCATION: JET ROOM	
EA-3026	09 in no. quick closing valve to be overhauled and pressure tested. (E-12) Size-1/2"BSP, Mat-SS, Test Pressure – 320 Kg/cm ² .
EA-3027	Chemically clean pressure test system pipes and fit with new gaskets. Dia 25 mm and total length-10 Mtr Mat : SS. (E-12)
EA-3028	Renew 04 nos flange arresting valves, Examine tank sounding and vent pipes for defect. (E-12)
EA-3029	Overhaul 06 nos Ball valve of system (Size – 25 mm). (E-12)
	DO. Material yard supply. DO. Material yard supply. DO. Material yard supply. DO. Material yard supply. DO. Material yard supply.

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SEA WATER COOLING SYSTEM, LOCATION: MER

EA-3030 Following valves of sea water system to be overhauled and pressure tested for 05 bar. (25% of system valves catered) (E-13)

Description	Qty
Butterfly Valve 40 NB	02 No
Butterfly Valve 80 NB	01 No
Butterfly Valve 100 NB	02 No
ME Exhaust O/B discharge valve	02 No
Ball Valve 20 NB	01 No
Ball Valve 15 NB	01 No
Butterfly Valve 40 NB (3 Piece)	01 No

DO. Spares and material yard supply.

EA-3031 Following Sea water system pipe lines to be removed, chemically cleaned, pressure test up to 05 bar and fitted with new gaskets. (Mat: SS) (25% length is catered) (E-13)

Description	Qty
Main engine sea water system line, 125 NB	05 Mtrs
Main engine sea water system line, 80 NB	05 Mtrs
DA sea water system line, 40 NB	05 Mtrs
A/C sea water system line, 40 NB	08 Mtrs

DO. Material yard supply.

BILGE AND FIRE MAIN SYSTEM, LOCATION: MER

EA-3032 Following valves of sea water system to be overhauled and pressure tested up to 05 bar. 25 % of system valves catered. (E-14)

Ball Valve 50 NB	02 Nos
NRV 50 NB	01 No
Butterfly Valve 50 NB	01 No
Ball Valve 25 NB	01 No
SDNR valve 32 NB	02 Nos
Ball Valve 32 NB	01 No
NRV 32 NB	01 No
Sea chest inlet valve 50 NB	01 No
SDNR valve 50 NB	01 No
SDNR valve 25 NB	01 No

DO. Spares and material yard supply.

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	Ball valve 10 NB NRV 20 NB NRV 25 NB	01 No 01 No 01 No	
EA-3033	30 meters fireman and bilge system pipelines to be removed chemically cleaned and pressure tested upto 04 bar and fitted back with new gaskets. (E-14)		DO. Material yard supply.
LUB OIL / DIRTY OIL SYSTEM, LOCATION: MER			
EA-3034	Approx 10 meters Lub Oil system pipe lines and 05 Mtr dirty oil pipe line to be removed, chemically cleaned, pressure tested and fitted with new gaskets. (E-18)		DO. Material yard supply.
EA-3035	Carry out pressure test of flexible hoses (E-18)		DO.
EA-3036	Overhaul semi rotary hand pump. (E-18)		DO.
EA-3037	Renew flame arresting gauges. (E-18)		S&D
EA-3038	Overhaul and pressure test following system valves. (25 % of system valves is catered) (E-18)		DO. Material yard supply.
	Description	Qty.	
	High pressure ball valve 1/2" BSP	03	
	Ball valve 50 NB	01	
	Ball valve 2" BSP	01	
	Ball valve 1/2" BSP	01	
	NRV SAE 1"	01	
	Ball valve 20 NB (03 pieces)	02	
	NRV 25 NB	01	
	Ball valve 25 NB	01	
	NRV 20 NB	01	
BLACK AND GREY WATER SYSTEM, LOCATION: AC COMPARTMENT			
EA-3039	Overhaul 02 no. system valves (40 NB Butterfly Valve) and Carry out chemical cleaning and pressure testing of 05 mtrs system pipes at 05 bar pressure. (25 % of system pipe line is catered) (E-15)		DO. Spares and material yard supply.
EA-3040	Examine filling and vent pipes for defects. (E-15)		Deleted. SS
EA-3041	Check function of relief valve 01 No. (E-15)		DO. Material yard supply.

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EMERGENCY FIRE PUMP, MAKE –AZUE & LOMBARDINI, TYPE – M036/20, QTY-01, LOCATION: MER	
EA-3042	Carry out overhauling of emergency fire pump & pump to be proved. (E-19)
RO PLANT, MAKE- M/S ROCHEM TYPE- RO200DT 0125 PVC - 01 NO PAC FIRM: M/S ROCHEM, MUMBAI, LOCATION: MER	
EA-3043	Five yearly routine of RO plant to be carried out. Scope of job is as follows. (E-21) (a) Replace Mechanical Seals Of PK 30 Pump. (B) Calibrate Torque Wrench. (C) Calibrate Hand Conductivity Meter. (D) Inspect PS 51, PS 71, PS 81 Pressure Switches. (E) Replace HP Pump manifold heads. (F) Replace DT module with service exchange module. (G) Replace circuit breakers and contactors as required
AC CONDENSER PUMP MAKE- JP PUMP TYPE- FREE FLOW CENT PUMP – 01, LOCATION: AC COMPARTMENT	
EA-3044	Yearly routine on AC condenser pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-22). (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearances. (d) Check wear and tear of impeller, renew if required. (e) Replace wear ring and guide ring.
GREY WATER PUMP,MAKE- AZUE, TYPE- CA 32/0.5 NO-01 , LOCATION: MER	
EA-3045	Yearly routine on Grey water pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-23). (a) Dismantle the pump (b) Replace bearings. (c) Replace the mechanical seals. (d) Check the tip clearances. (e) Check wear and tear on impeller renew if required. (f) Replace wear and tear ring and guide ring.

DO overhauling. Spares CG supply. Material yard supply.

DO through PAC firm. Spares CG supply. Material yard supply.
Calibration certificate to be provided.

of the unit

<p>FRESH WATER PUMP, MAKE- AZUE, TYPE- M036/20, 01, LOCATION: AC COMPARTMENT</p> <p>EA-3046</p> <p>Yearly routine on Fresh water pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-24).</p> <ul style="list-style-type: none"> (a) Dismantle the pump (b) Replace bearings. (c) Replace the mechanical seals. (d) Check the tip clearances. (e) Check the wear and tear on impeller renew if required. (f) Replace wear ring and guide ring. 	<p>DO overhauling. Spares CG supply. Material yard supply.</p>
<p>WATER SCOOTER , MAKE- YAMAHA, TYPE- VX700, NO-01, LOCATION: QUARTER DECK</p> <p>EA-3047</p> <p>Yearly routine on water scooter to be carried out and proved for optimum performance. Scope of job as follows: (E-25)</p> <ul style="list-style-type: none"> (a) Check, clean & adjust spark plug. (b) Lubricate the lubricant points (c) Check fuel system (d) Replace fuel filter (e) Check and clean fuel tank (f) Check, clean oil injection system (g) Check adjust carburetor (h) Check adjust trolling speed (j) Check carburetor throttle shaft (k) Flush cooling water passages (l) Check, clean water inlet strainer (m) Clean bilge strainer (n) Check impeller (p) Check adjust jet trust nozzle angle (q) Check adjust throttle cable (r) Check adjust choke cable (s) Check, replace stern drain plugs (t) Check charge battery (u) Check rubber coupling (v) Check engine mount 	<p>Delete. Defect if any to be discuss during RFIC.</p>

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FUEL OIL TRANSFER PUMP, MAKE-AZCUE, TYPE-CA 32/0.5, NO-02, LOCATION: MER	
EA-3048	Yearly routine on Fuel oil transfer pump to be carried out and pump to be proved for optimum performance. Scope of job as follows: (E-26) (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearances. (d) Check the wear and tear on impeller renew if required. (e) Replace wear ring and guide ring. (f) Replace gauges.
	DO overhauling. Spares CG supply. Material yard supply.
SANITARY PUMP, MAKE-MOYNO, USA; MODEL - 42202 3914220200, QTY-01 NO, LOCATION: AC COMPARTMENT	
EA-3049	Overhaul and examine mechanical seal on the macerator, two cutter rings, the impeller & pumping element. Replace all components when show sign of wear and damage. (E-27)
	DO overhauling. Spares & Material yard supply.
EXHAUST SYSTEM, MAKE- THORNY CROFT, QTY -02, LOCATION: MER	
EA-3050	Overhaul 02 in Nos butterfly valves. Inway job includes renewal of pro-matec / ceramic gasket in the exhaust system and DP test of bulkhead flange joint on port and starboard side.(Size- 250 NB) (E-29)
	DO. Spares & Material yard supply.
25 HP 2-STROKE OBM (100 HRLY ROUTINE), MAKE- MERCURY MARINER, QTY-02 (R/HRS AS ON 30 JUL 18- 30.15 Hrs), PAC FRIM : M/S ESMARIO EXPORTS PVT LTD, SECUNDERABAD LOCATION: QUARTER DECK	
EA-3051	Clean and adjust carburetor at idling (E-28)
	Delete. To be undertaken through SRMO
EA-3052	Check for salt deposits and cable connection
EA-3053	Check corrosion and deformation of anode and trim tab.

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DIVING AIR COMPRESSOR MAKE – GOENKA ENGG GA-3 (3.5) PAC: - M/S GOENKA ENGG. & INDL. PVT, NEW DELHI, LOCATION: PORTABLE	
EA-3054	Annual routine of diving air compressor to be carried out. Scope of job as follows: (E-30) (i) 03 Nos valve to be changed (Size-15 MM) (Filling, Discharge & purging) (ii) Change intake filter element 1 st stage. (iii) Check blow-off pressure of final pressure safety valve.
	DO. Spares CG supply. Material yard supply.
MAGAZINE SPRINKLING SYSTEM LOCATION: MAGAZINE COMPARTMENT	
EB-3055	03 Nos sprinkling valves not holding. To be overhauled. (Dia : 25 MM)
	DO. Spares and material yard supply.

07/2/20 21/11/21

ELECTRICAL DEFECT LIST FOR ANNUAL U/W AND FIVE YEARLY JET ROUTINE OF C-153

DL SL.	DESCRIPTION	RHQ(NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: ICCP, MAKE: CUPROBAN , UK, QTY: 01 NOS, PAC FIRM/AIAMC M/S SARGAM METALS, CHENNAI, LOCATION: MAIN ENGINE ROOM		
LA-5001	Inspect Shield Paint and paste around the anodes and reference electrode. If peeled off, the area to be recoated. (L-24)	Discuss during RFIC.
LA-5002	Inspect Anode and Reference Electrode for any mechanical damage and deterioration. Replace zinc anodes reference electrode. (L-24)	
LA-5003	Inspect water seepage in the junction box. (L-24)	
LA-5004	Carryout functional test and calibrate all meters and Backup battery (L-24)	
LA-5005	Carryout insulation checks w.r.t hull.(L-24)	
EM LOG MAKE: M/S JOHN LILLEY & GILLEY, TYPE: WALKER 4040, QTY:01 NO, PAC firm M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H		
LA-5006	Carry out calibration of EM Log and compare the readings with GPS speed. Difference should be within permissible limits. (L-08)	DO through PAC firm.
GYRO COMPASS , MAKE- ANSCHUTZ , TYPE- STD 22, QTY -01, M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H		
LA-5007	Open Master compass and dismantle the gyro sphere and inspect all other assembly for any damage deterioration.(L-04)	DO LA-5007 & LA-5008 through PAC firm. Spares CG supply.
LA-5008	Change the supporting liquid and distilled water, replacing filter ring, Teflon washer and gasket . (L-04)	
REPEATER COMPASS, MAKE- ANSCHUTZ, TYPE- STD-22 QTY- 05, M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H, FLY BRIDGE, JET COMPARTMENT,		
LA-5009	Open repeaters, clean it and apply thin coat of appropriate grease to gimbals, gear, and teeth belt. (L-04)	DO through PAC firm. Spares CG supply.
ECHO SOUNDER, MAKE- KODEN, TYPE- CVS 833, QTY -01, M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H		
LA-5010	Following jobs to be undertaken on Echo sounder. (L-06) (a) Check transducer for water tightness and check transducer cables for insulation. (b) Calibrate equipment & check accuracy.	DO through PAC firm. Spares CG supply.

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MAIN ENGINE CONTROLS, MAKE- MTU DETROIT DIESEL , PAC FIRM- M/S MTU, PUNE/ M/S YMPL, MUMBAI LOCATION: MAIN ENGINE ROOM, W/H AND BRIDGE TOP		
LA-5011	Carry out functional test and calibrate & prove all sensors and safeties of engines as per service manual. (L-01)	DO LA-5011 & LA-5012 through PAC firm. Spares CG supply.
LA-5012	Check the condition of all electrical connection in LOPS, Bridge & Fly Bridge for loose connection, deterioration of wiring/cables. (L-01)	
RADAR, MAKE-FURUNO, TYPE-FAR2117,FAR 28X7 SERIES PAC FIRM M/S AS MOLOOBHOY PVT LTD, MUMBAI LOCATION: W/H		
LA-5013	Carry out optimum performance checks (L-05) (AIAMC expired on 19 Nov 2017)	DO through PAC firm. Spares CG supply.
WIND MEASURING SYSTEM, MAKE- WALKER, TYPE-7070 DATA P249, LOCATION: W/H & BRIDGE		
LA-5014	Following job to be undertaken (L-07) (a) Check the speed sensor bearing (b) Renew the damping fluid for the wind direction sensor	DO through PAC firm. Spares CG supply.
MF/HF TX/RX 150/250W CONTROL UNIT CU 5100, MAKE-SAILOR, QTY-01 NO, LOCATION: BRIDGE		
LA-5015	Performance checks to be carried out. (L-10)	Delete.
VHF TX/RX, MAKE-SAMYUNG, TYPE- STR 6000A, QTY-02 NOS, PAC: M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI, LOCATION: BRIDGE		
LA-5016	Performance checks to be carried out. (L-11)	Delete.
ALL MODE COMMUNICATION RECEIVER 100 KHZ TO 2600 MHZ, MAKE-YAESU, TYPE-VR 5000 ; LOCATION: BRIDGE		
LA-5017	Performance checks to be carried out. (L-12)	Delete.
GMDSS POWER SUPPLY UNIT/BATTERY CHARGER, MAKE- SAILOR/ALCOME,TYPE 24V DC, QTY-02; LOCATTION: BRIDGE		
LA-5018	Performance checks to be carried out. (L-18)	Delete.
GMDSS ALARM UNIT, MAKE-SAILOR, TYPE-AP 5065, QTY-01; LOCATION: BRIDGE		
LA-5019	Performance checks to be carried out. (L-18)	Delete.
EPIRB : MAKE ACR, QTY -01 LOCATTION: FLY DECK		
LA-5020	Performance checks to be carried out.(L-17)	Delete.

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GPS NAVIGATOR, MAKE-KODEN ELECTRIC, TYPE-KGP 920, QTY-01, M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI ; LOCATION: FLYDECK	
LA-5021	Carry out functional checks of interface unit, all switches, lights and panel. (L-09) Delete.
NAVAX RECEIVER, MAKE-SAMYUNG TYPE- SAN300, QTY-01 M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI ; LOCATION: BRIDGE	
LA-5022	Carry out optimum performance check (L-16) Delete.
SART -02 (MAKE-M/s SAMYUNG, SAR-09, QTY-01 ; MAKE- M/S ACR, QTY-01), PAC: M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI FOR M/S SAMYUNG AND M/S AS MOLOBHOY PVT LTD, MUMBAI FOR ACR, LOCATION: BRIDGE	
LA-5023	Carry out functional test as specified in service manual. SART to be functionally tested using a radar signals as recommended in the COM-SAR guidelines in manual. (L-29) Delete.
AIS, MAKE-M/S SAMYUNG, TYPE- SI-30, QTY-01 NO; M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI; LOCATION: BRIDGE	
LA-5024	Carry out optimum performance check. (L-30) Delete.
ECDIS, MAKE- FURUNO, TYPE- FEA-2107, QTY- 01 PAC FIRM M/S AS MOLOBHOY PVT. LTD MUMBAI.; LOCATION: BRIDGE	
LA-5025	Carry out optimum performance checks. (L-31) (AMC expired on 19 Nov 2017) Discuss during RFIC.
PA SYSTEM, MAKE- M/S VINGTOR STEENHAMS TYPE- VPA 120, LOCATION: BRIDGE	
LA-5026	Carry out functional checks of all switches and Impedance of all speakers and microphone, thorough output check and prove the system. (L-33) Discuss during RFIC
FOG HORN, MAKE-ZOLLENER, TYTPE- 230 V AC, QTY- 01; LOCATION: BRIDGE TOP	
LA-5027	Following job to be carried out (L-20) (a) Overhaul the equipment completely. (b) Check the components for sign of deterioration. Replace deteriorated wiring. DO. Spares supply as per RFIC.

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WINDOW WIPING SYSTEM, MAKE- HEPWARTH MARINE, TYPE-50 NM, QTY – 05; LOCATION: BRIDGE TOP	
LA-5028	The following jobs to be undertaken (L-22) (a) Check the condition of rigid blades. (b) Check blade arm and spring for any damage (c) Check spray nozzle are free from blockages (d) Carry out overhauling of 24V DC motors (e) Check the 24V DC solenoid.
DO for serials (a),(b) , (c) & (e). Delete serial (d). Spares supply as per RFIC.	
FIRE & SMOKE DETECTION ALARM PANEL, MAKE- M/S TYCO MARINE SYSTEM, TYPE- T-1008, QTY- 01; LOCATION: BRIDGE	
LA-5029	Carry out Capacity test of batteries and carry out performance check. Job includes checking of circuit panel (L-23)
Delete. SS to indicate defect if any during RFIC.	
DIESEL ALTERNATOR, RATING: 65 KW, MAKE – CATER PILLAR, QTY- 02, PAC FIRM- M/S GMMCO LTD, RAJKOT ; LOCATION :M/E ROOM	
LA-5030	Clean winding, re-varnish and change bearing of Alternator (Bearing Make: SKF 6309-2Z/C3,Part No- 04181740, Qty -02 Nos). (L-02)
DO for LA-5030 to LA-5034. Spares and material supply as per RFIC. Carry out load trials on ship's load.	
LA-5031	Inspect and clean winding and improve insulation.(L-02)
LA-5032	Overhaul full Generator assembly including AVR, battery starter and space heater. (L-02)
LA-5033	Check capacity of generator with full load tank test 100%, 75% & 50%. (L-02)
LA-5034	Following safety trips and alarm sensor to be checked and calibrated. (L-02) (i) Low Lub oil pressure (ii) High water temperature (iii) Over speed trip
DISTRIBUTION BOARDS, MAKE- MARINE ELECTRICAL, QTY – 08 NOS ; LOCATION : MAIN ALLEWAYS	
LA-5035	Carry out functional test and calibration of all MCBs. (L-35)
Delete.	
STARTER PANELS, MAKE- MARINE ELECTRICAL, QTY – 08 NOS; LOCATION : ENGINE ROOM - 05, AC COMPARTMENT-03	
LA-5036	Carry out functional test and calibration of all overload relays.(L-36)
Do. Spares supply as per RFIC.	

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ELECTRIC COOK TOP (GALLEY HOT PLATES), MAKE- SHARADA ENGG, BARODA, QTY-02NOS ; LOCATION : GALLEY																						
LA-5037	Check insulation of heating elements. Replace if required (L-25)																					
LA-5038	Check function of range switches. Replace if required. (L-25)																					
LA-5039	The following jobs to be undertaken. (L-25) (a) Check control wiring if found cracked, to be replaced. (b) Check wiring of hot plate and their sleeve, if found hard, to be re-placed. (c) Check end connection if defective to be replaced.																					
MAIN SWITCH BOARD, MAKE- MARINE ELECTRICALS, TYPE-1727-01R5, QTY-01 ; LOCATION: ENGINE ROOM.																						
LB-5040	(a) Calibration of following MSB meters to be carried out, if defective to be replace and calibration certificate to be provided: (i) Voltmeter (0-500V), Qty-03 Nos (ii) Ammeter (0-200A), Qty-03 Nos (iii) Kilowatt Meter (0-100KW), Qty -02 Nos (iv) Frequency meter (0-50Hz), Qty -02 Nos (v) Synchro scope CSQ-3, Qty 01 No (vi) Double frequency meter, Qty -01 No (vii) Double volt meter, Qty - 01 (b) Following circuit breakers to be overhauled and all safeties to be checked: (i) Shore supply breaker 100 Amps, Qty-01 No (ii) DA breakers 500 VA, Qty-02 Nos																					
MOTORS ; TOTAL QTY : 20 NOS. ;																						
LA-5041	Following motor to be overhauled. Job includes checking of insulation, varnishing, renewal of bearing and painting. <table border="1" data-bbox="1177 1048 1536 1989"> <thead> <tr> <th>SL</th> <th>DESCRIPTION</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>Supply/Exhaust blower motor (5.5/7.5 KW)</td> <td>02 Nos</td> </tr> <tr> <td>02</td> <td>ATU Blower motor (251 W)</td> <td>01 No</td> </tr> <tr> <td>04</td> <td>Galley & bath room Exhaust blower motor (215/319 KW)</td> <td>02 nos.</td> </tr> <tr> <td>05</td> <td>Anchor windlass motor (04 KW)</td> <td>01 No.</td> </tr> <tr> <td>06</td> <td>Water scooter Davit & Gemini Winch motor (2.6 kw)</td> <td>02 nos.</td> </tr> <tr> <td>07</td> <td>Fresh Water pump motor (0.7 KW)</td> <td>01 no.</td> </tr> </tbody> </table>	SL	DESCRIPTION	QTY	01	Supply/Exhaust blower motor (5.5/7.5 KW)	02 Nos	02	ATU Blower motor (251 W)	01 No	04	Galley & bath room Exhaust blower motor (215/319 KW)	02 nos.	05	Anchor windlass motor (04 KW)	01 No.	06	Water scooter Davit & Gemini Winch motor (2.6 kw)	02 nos.	07	Fresh Water pump motor (0.7 KW)	01 no.
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07	Fresh Water pump motor (0.7 KW)	01 no.																				
DO. Spares yard supply as per RFIC minutes. Yard to quote for individual motor.																						

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	08	Grey Water pump motor (0.55 KW)	01 no.		
	09	Sprinkling Water pump motor (1.1 KW)	01 no.		
	10	Fire main pump motor (2 KW)	01 no.		
	11	FO Transfer pump motor (0.55 KW)	02 nos.		
	12	A/C condenser pump motor	01 no.		
	13	AC compartment, Silencer and water jet supply fan (215/319W)	03 no.		
	14	Black water pump motor (1.1 Kw)	01 no		
	15	Salt water pump motor (0.7 Kw)	01 no.		
TANK LEVEL MONITORING SYSTEM, MAKE – ARISTON, NORWAY; LOCATIN : ENGINE ROOM					
LB-5042	Tank level monitoring system to be overhauled and sensors (09 Nos) to be calibrated.			DO. Spares CG supply.	
SEARCH LIGHT, MAKE- FRANCIS, TYPE – FX-380 RC ; PAC FIRM : M/S EMANDI CORPORATION, VISAKHAPATNAM ; LOCATION: BRIDGE TOP.					
LA-5043	Carry out optimum performance check (L-19)			DO. Spares supply as per RFIC minutes.	
NAVIGATIONAL LIGHT CONTROL PANEL, MAKE-NORSE LIGHT, QTY-01 NO.; LOCATION : W/H					
LB-5044	Optimum performance checks to be carried out.			DO. Spares CG supply.	
BATTERY CHARGER MAKE: MARINE ELECTRICALS QTY:04 (240V,1PH,60 HZ/24V,DC 50A-QTY-02 NOS+ 240V,3PH,50HZ/24V,DC 75A,QTY-02 NOS); LOCATION: E/R AND SILENCER COMPARTMENT.					
LB-5045	Overhaul 04 in Nos battery chargers. job includes calibration of associated voltmeters and ammeters. (i) Voltmeter (0-50V DC), Qty-04 Nos (ii) Ammeter (0-50A), Qty-02 Nos (iii) Ammeter (0-150), Qty-02 Nos (iv) Battery Ammeter (150-0-150A), Qty-02 Nos			DO. Spares supply as per RFIC minutes.	
TELEPHONE EXCHANGE, MAKE- ALPHACOM, TYPE- STENTOFON, QTY- 01 NO; LOCATION : BRIDGE					
LA-5046	Functional test of all components to be carried out. (L-34)			Delete.	
24 V DISTRIBUTION BOARDS, MAKE: MARINE ELECTRICAL, QTY-02 ; LOCATION : WORK STATION					
LB-5047	Following meters to be calibrated (a) Voltmeter, 0-50V DC, Qty-02 Nos (b) Ammeters, 0-150A, Qty-02 Nos			DO. Yard to provide calibration certificate.	

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BATTERIES (200 AH / 150 AH/100AH); MAKE- EXIDE EXPRESS POWER, TYPE- LEAD ACID, QTY - 16 NOS LOCATION: MER,SILENCER COMPT, FLY BRIDGE	
LA-5048	Carry out capacity test of 16 nos batteries. (L-26) (i) Battery(200 AH), Qty-12 Nos (ii) Battery(150 AH), Qty-02 Nos (iii) Battery(100 AH), Qty-02 Nos
	Delete.
FLEET BROADBAND (FBB), MAKE: SAILOR (THRANE AND THRANE), QTY-01; PAC FIRM M/S AS MOLOOBHOY PVT LTD, MUMBAI, LOCATION: BRIDGE	
LB-5049	(a) Performance check to be carried out (b) Check proper interfacing and communication between interface units and CPU (c) Check the condition to all electrical connection for loose connection.
	Delete.
DEEP FREEZER, MAKE-TROPICALISEC, QTY-01, LOCATION: GALLEY	
LA-5050	Performance check of deep freezer to be carried out. (L-28)
	Delete.

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HULL DEFECT LIST FOR ANNUAL U/W AND FIVE YEARLY JET ROUTINE OF C-152

DL SL.	DESCRIPTION	RHQ(NW) REMARKS														
UNDER WATER WORK PACKAGE : HULL AND APPENDAGES, MAKE: ABG SHIP YARD																
HA-1001	Carry out docking and undocking of the ship as per docking plan. Scrap and clean the marine growth immediately on completion of docking and wash with fresh water. Clean the EM log and Echo sounder pick up head. Clean all sea growth and apply paint as per paint scheme. Both version docking to be carried out.(Full paint scheme on five yearly bases and touch up scheme annually).	DO. Docking in both versions. Docking plan to be provided by ship. Painting covered in HA-1005														
HA-1002	Renew all sacrificial anodes (both hull and jets) which are consumable 50% or more. All other anodes to be cleaned with wire brush. Qty - 08 in nos (04 nos- main engine sea chest & 04 nos shaft protection tube).	DO. Anodes CG Supply														
HA-1003	Carry out UTG of critical or suspected area as per class surveyor's recommendation. (Total UTG points: 350) Renew hull plates as necessary. Class surveyor and certification to be arranged by yard.	DO UTG 350 points under surveyor presence Renewal of hull plate against AWRP as per surveyor recommendations. Material yard supply.														
HA-1004	Remove all 03 nos. under water gratings, clean and chip to bare metal and to be fitted after painting as per paint scheme with adequate surface preparation. Renew all fasteners (Material -SS).	DO, paint and material yard supply														
HA-1005	<p>Underwater Painting. Paint is to be removed using paint remover or as suitable without any damage to metallic surface. Painting of underwater hull including boot top area as per paint scheme after completion of underwater repairs. Under water - Area 250 Sq. mtr (U/W, boot top & jet tunnel)</p> <table border="1" data-bbox="1062 1357 1302 1895"> <thead> <tr> <th>Paint description</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>Penguard HB Red</td> <td>80</td> </tr> <tr> <td>Safeguard Universal ES, Grey</td> <td>60</td> </tr> <tr> <td>Sealion Tiecoat Red</td> <td>60</td> </tr> <tr> <td>Sealion Repulse Grey</td> <td>80</td> </tr> </tbody> </table> <p>Boot top - Area 20 Sq. mtr(Boot top area (final coat)</p> <table border="1" data-bbox="1342 1357 1422 1895"> <thead> <tr> <th>Paint description</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>Sealion Repulse Black</td> <td>20</td> </tr> </tbody> </table> <p>(a) If we go for touch up scheme, Paint manufacturer doesn't provide any PPG. (b)Is water jet area included in the given area?</p>	Paint description	QTY	Penguard HB Red	80	Safeguard Universal ES, Grey	60	Sealion Tiecoat Red	60	Sealion Repulse Grey	80	Paint description	QTY	Sealion Repulse Black	20	Do. Touch up paint scheme of M/s Jotun FRC scheme. Paint yard supply
Paint description	QTY															
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Safeguard Universal ES, Grey	60															
Sealion Tiecoat Red	60															
Sealion Repulse Grey	80															
Paint description	QTY															
Sealion Repulse Black	20															

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HA-1006	The following main jet system compartment (water jet sea inlet tube and water jet duct) to be degreased, fresh water washed and power tooled to ST2 STD and painted after completion of repairs as per paint scheme as mentioned below. Paints Yard supply.	DO. Paint to be removed using paint remover/scrapper without damage to surface. Painting covered under HA-1005.															
HA-1007	Paint draught markings, ship side blue bands and Indian Coast Guard name to be written as per CGHQ policy letter PL/0454 dated 22 Jan 15 (English & Hindi).	DO, Blue band, pennant number at transom and Indian Coast Guard in English (Port side) "भारतीय तटरक्षक" in Hindi (Stbd side) to be painted as per CGBR 382. Paint CG supply															
SHIP SIDE, SUPER STRUCTURE, UPPER DECK FITTINGS& MAST. MAKE : ABG SHIPPYARD																	
HA-1008	Check for deterioration of hull plates and handles for or physical damage. Repair the defective parts if required.	DO, Survey by class surveyor. Cater for 100 UTG points.															
HA-1009	Ship side and super structure paint peeled off. Ship side and superstructure along with upper deck fittings to be painted as per Jotun paint scheme.(As per CGBR 382Ship side area: 240 Sq. Mtrs and Super Structure area: 115 Sq. Mtrs) Ship side	Do Touch up paint scheme. Paint CG supply															
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Paint name/colour	DFT	QTY															
Penguard HB, Red	100	40															
Penguard HB, Grey	100	40															
Hardtop XP, White	50	20															
Hardtop XP, White	50	20															
WATER TIGHT DOORS AND HATCHES (DOORS - 06 Nos, HATCHES - 04 Nos.)																	
HA-1010	100% survey of all WT doors and hatches to be carried out.	DO, undertake 100 % survey and chalk test on all WT doors and hatches with class surveyor. Repairs/renewal if any under AWRF.															
HA-1011	Repair defect if any and replace all rubber seating due to fair wear & tear and re-test doors and hatches for water tightness. (Approx rubber coaming Length- 70mtr, plastic locking grip-08 Nos, pulling handle – 04 Nos, Hydraulic arms – 03 nos).																

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HA-1012	Carry out watertight test by chalk/hose testing on the door and hatches													
HA-1013	Carry out cleaning of inside & outside area of both water jet buckets for Erosion/corrosion and peeling off paint film. Report is to be rendered with class surveyor's recommendations.	Delete covered under HA-1001												
UNDERWATER PACKAGE FRESH WATER TANK, CAPACITY-01 TON														
HA-1014	Clean and pressure test the fresh water tank to design pressure. (Pressure test upto 3 bar/as per trial protocol). Renew manhole cover gaskets.	DO only cleaning. Pressure test if any repairs undertaken on tank.												
HA-1015	Remove the fresh water from tanks, clean and scrap the paint and carry out 100% survey. Repaint the tanks as per paint scheme. (Area: 10 Sq Mtrs). Paint Scheme: Jotun with dry film thickness.	DO. Touch up paint scheme. Paint CG supply												
	<table border="1"> <thead> <tr> <th>Paint name, colour</th> <th>DFT</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>Penguard HB , White</td> <td>100</td> <td>20</td> </tr> <tr> <td>Penguard HB,Grey</td> <td>100</td> <td>20</td> </tr> <tr> <td>Penguard HB, White</td> <td>100</td> <td>--</td> </tr> </tbody> </table>	Paint name, colour	DFT	QTY	Penguard HB , White	100	20	Penguard HB,Grey	100	20	Penguard HB, White	100	--	
Paint name, colour	DFT	QTY												
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Penguard HB,Grey	100	20												
Penguard HB, White	100	--												
UNDERWATER PACKAGE FUEL, LUB, HYDRAULIC AND DIRTY OIL TANK														
HA-1016	Fuel, lub, hydraulic and dirty oil tanks to be cleaned/ surveyed and pressure tested. Including clean, scrap and re-paint outer surface of tanks as per paint scheme. {fuel tanks : 3.6 KL (02 nos), 3.0 KL (01 no), 1.9 KL (02 nos), Lub oil dirty tank : 01(Cap-300 Ltrs), Dirty Oil tank : 01 KL (01 no).	DO, SS to empty and dockyard to clean, survey & tested, Mat-yard supply.(FO- cap 3.6 KL-02 nos, 3.0 KL-01 no, 1.9 KL-02 nos, LO dirty-300 Ltrs-01 no, Dirty oil-01 KI-01 no)												
GREY WATER TANK, AREA- 06 SQ MTR, CAPACITY – 01 TON														
HA-1017	Remove grey water from the tank. Clean with liquid detergents and scrap the damaged paint. Carry out 100% survey by surveyor. Pressure tests the tank at designed pressure. Renew manhole cover gaskets. Repaint the tank as per paint scheme. Cap - 01 ton. Paint yard supply.	Do. Touch up paint scheme. Paint CG supply. Tank to be dismantled/fitted from place for painting and survey of inaccessible area. All inway jobs included.												
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1	Penguard HB , Gray	100												
1	Penguard HB, Red	100												
1	Penguard HB, Gray	100												

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BLACK WATER TANK, AREA- 06 SQ MTR

HA-1018 Remove the black water from the tank. Clean with liquid detergents and scrap the damaged paint, carry out 100% survey by the surveyor. Pressure test the tank at designed pressure. Renew manhole cover gaskets. Repaint the tanks as per the paint scheme. Paint yard supply.

DO. Touch up paint scheme. Paint CG supply. Tank to be dismantled/fitted from place for painting and survey of inaccessible area. Inway job included.

EQUIPMENT: GENERAL COMPARTMENTS.NO.1 DECK ABOVE AND BELOW, MAKE: ABG SHIP YARD, AREA:230 SQ.M

HA-1019 100 % area to be visually surveyed, carry out non-destructive test on suspected area and carry out repair as necessary.
(Peak tank below EP's mess, below captain cabin, SO's cabin, wash room area, A/C compartment, Engine Room, Silencer compartment, Jet compartment).

DO. Yard to cater for survey and touch up paint scheme only for bilges. Paint CG supply

EQUIPMENT: SCUPPER AND DRAINS MAKE: ABG SHIP YARD

HA-1020 All scupper valves are to be removed, overhauled and refitted with new scupper lips.
Size: 40mm, Qty- 02 Nos.

DO, Material yard supply.

HA-1021 Following drain pipe lines to be chemically cleaned, pressure tested and refit with new gaskets.

DFP

Sr	Description	Size	Testing Pressure
(a)	Wash basin drain	40 mm dia x 5 Mtrs:length	01 Bar
(b)	Galley drain	40 mm dia x 3 Mtrs length	01 Bar
(c)	Dining hall drain	40mm dia x 2 Mtes length	01 Bar

EQUIPMENT: BOAT DAVIT, GEMINI WINCH AND SLINGS MAKE: ZODIAC

HA-1022 Check all high speed bearings and renew if necessary. Overhaul the gearbox. Renew the seals, oil and damaged bearings. Carry out survey and load test of davits together with all associated wire ropes, blocks and fittings for SWL (running and Static load test). Rope length- 40 m, Dia : 08 mm; 06 strand. Load test certificate to be provided.
Safe working load --- 360 kgs

DO, Overhauling. Yard to rendered load test certificate.

EQUIPMENT: ANCHOR AND CHAIN CABLE ARRANGEMENT MAKE: SHIP EQUIPMENTS, NETHERLAND, QTY:01 NO

HA-1024 Anchor chain cable to be tested and certificate to be rendered.

Do. Painting and NDT of Anchor and chain cable be carried out and gauging report rendered. Paint yard supply

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EQUIPMENT: DIVING SET, FACE MASK, MAKE: DIVATOR MK II, QTY:02 NOS (EACH) & BASCCA SET, MAKE : SCOTT SIGMA, MODEL: 9.72 KG, QTY: 03 NOS																
HA-1025	Carry out complete functional test with test equipment. Carry out complete maintenance routine as per maintenance manual. Carry out pressure test as per regulations and manual. Material and spares yard supply Delete. DFP.															
EQUIPMENT: ANCHOR WINDLASS, MAKE: MUIR ENGG. AUS , TYPE: VRC 4500																
HA-1026	Dismantle the deck gear, clean all running parts. Strip and inspect windlass brake mechanism. Examine brake linings, pins, and bushes for wear and tear and renew as necessary. Drain oil from gearbox and refill. Cable holder gypsy and drums to be removed. Examine for wear and deterioration. Defects to be rectified. Windlass to be overhauled and operation to be proved. All gaskets and fasteners yard supply. Non destructive test of anchor windlass, fair leads and stag horn to be carried out. Do. Overhauling Material yard supply. Spares CG supply															
EQUIPMENT: CABLE LOCKER MAKE: ABG SHIP YARD																
HA-1027	Clean out locker and remove all ducts. Examine the structure paying particular attention to that in vicinity of cable clench and ship side plating. Replace hardwood lining for insulation inside cable locker. Examine and clean the drain pipe from cable locker to anchor pocket. Paint Scheme (Cable Locker) Do. Cleaning, Painting and Survey by class surveyor. Paint yard supply															
	<table border="1"> <thead> <tr> <th>coat</th> <th>paint name/colour</th> <th>dft</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>penguard hb grey (jotun)</td> <td>125</td> </tr> <tr> <td>2</td> <td>penguard hb white (jotun)</td> <td>125</td> </tr> <tr> <td>3</td> <td>penguard hb grey (jotun)</td> <td></td> </tr> <tr> <td></td> <td>total</td> <td>250</td> </tr> </tbody> </table>	coat	paint name/colour	dft	1	penguard hb grey (jotun)	125	2	penguard hb white (jotun)	125	3	penguard hb grey (jotun)			total	250
coat	paint name/colour	dft														
1	penguard hb grey (jotun)	125														
2	penguard hb white (jotun)	125														
3	penguard hb grey (jotun)															
	total	250														
EQUIPMENT: OFFICERS & SAILORS BATH ROOM MAKE: BROWN BROARYLITE CO. AUS																
HA-1028	Remove drain pipe of Officers and sailor's bathroom & toilet and clean with soap and fit with new gaskets. Length – 05 Mtrs, 125 NB, Material- SS & Length 15 mtrs ,dia 40 NB, Mat PVC DO, chemically cleaning for 50% only.															
DECKS (MAIN DECK AND FLAG DECK INCLUDING BRIDGE TOP)																
HA-1029	Paint is to be removed using paint remover or as suitable without any damage to metallic surface. Painting of decks as per paint scheme after repair if any. Total area 115 M ² . Final DFT 650.Paint yard supply. Do. Touch up paint scheme. Paint CG supply															
HA-1030	General Services. The following yard services to be provided during docking period. (a) Suitable and hygiene comfortable accommodation for one Officer, 04 sub-officers Do as per RFIC minutes															

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	<p>ordinate officer and 10 other ranks with controlled environment Within vicinity of 10 km from yard.</p> <p>(b) Fresh water 01 ton/day and portable drinking water 100 liters/ day.</p> <p>(c) Fire main pressure 3-5 bar for 24 hours</p> <p>(d) 415V, 03 phase, 50 Hz, 25 Amp shore supply with neutral.</p> <p>(e) Separate bathroom and toilet facility for Officers, SOs and other crew members separately.</p> <p>(f) Telephone connections with fax and broad band facility separately for entire period of refit/ 02 nos mobile phone & 01 data card for internet.</p> <p>(g) One Staff car and one transport for Captain and ship's company respectively (12 hrs./120 Kms per day). Transport utility commences and terminate at gangway</p> <p>(h) Office space for Commanding Officer and crew separately.</p> <p>(i) Empty container in good condition for stocking the reserve LSHFHSO before docking.</p> <p>(k) Galley with Gas Stove and Gas cylinder.</p>	
HA-1031	Survey of bollards (08 nos) and towing bollards (02 Nos.) to be undertaken with class for soundness of structure and load test to be carried out. Certificate to be issued.	Do NDT survey. As per CGHQ Policy letter FM/1100/Policy dated 02 Jun 11
HB- 1032	<p>Thoroughly inspection to be carried out from frame no 19 to 23 and paint to be applied as per paint scheme (full). All in way Job includes removal and fitting back of grey water tank/black water tank and centre fuel oil tank post application of paint.</p> <p>Paint Scheme-Jotun paint. Area – 50 Mtrs</p> <p>(i) Penguard HB Grey</p> <p>(ii) Penguard HB Grey</p> <p>(iii) Penguard HB Grey</p>	Discuss during RFIC
HB-1033	01 ton of aluminium plate to be renewed or replaced as per standard size of plate as appropriate place.	Delete

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ENGINEERING DEFECT LIST FOR ANNUAL U/W AND FIVE YEARLY JET ROUTINE OF C-152

DL SL.	DESCRIPTION	RHQ(NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: SEA WATER SYSTEM		
EA-3001	Overhaul and pressure test all under water valves up to 3.0 Kg/cm2. (Mat: SS) (a) 250 NB butterfly valve - 02 No. (b) 125 NB butterfly valve - 02 No. (c) 50 NB butterfly valve - 01 No.	DO. Material yard supply.
EA-3002	Overhaul and pressure test all overboard valves up to 5.0 kg/cm2. (Mat : SS) (a) 100 NB butterfly valve - 02 Nos. (b) 80 NB butterfly valve - 04 Nos. (c) 32 NB butterfly valve - 04 Nos. (d) 40 NB butterfly valve - 03 Nos. (e) 50 NB butterfly valve - 03 Nos. (f) NRV 50 NB - 03 Nos.	DO. Material yard supply.
EA-3003	02 in nos. main sea chest strainers bodies to be removed /cleaned and fitted back. Renew strainer and guide. Material Yard Supply. Mat: SS Size: 800mm X 300mm Thickness: 02mm	DO. Material yard supply.
EA-3004	01 in no. sea chest strainer body for engine driven bilge pump to be removed /cleaned and fitted back. Renew strainer and guide. Mat: SS Size: 200mmx 80 mm Thickness: 02mm	DO. Material yard supply.
UNDER WATER PACKAGE EQUIPMENT: PUMP UNIT, IMPELLER SHAFTING, GUIDE VANE AND CHAMBER MAKE: KAMEWA, CENTA ,SKF,QTY : 02 NOS (PORT & STBD)		
EA-3005	Check Mechanical damage to impeller and guide van chamber and transom flange assembly.	DO for DL Sls EA-3005 to EA-3031 through PAC firm M/s Rolls Royce, Mumbai.
EA-3006	Carry out in-situ visual inspection of shaft, flange bolt, shaft seal and shaft coupling.	Spares, anodes and oil CG supply. Material yard supply.
EA-3007	Carry out in-situ inspection of bulkhead seal.	
EA-3008	Carry out in- situ inspection of split cone ring.	
EA-3009	Carry out readjstment of shaft seal.	
EA-3010	Carry out functional test of counterbalance valve of steering and reversing system	

Atul Singh

EA-3011	Carry out functional test on PTO pump readjust, if required.				
EA-3012	Carry out functional test on Electric motor driven lub oil pump. Readjust pressure, if required.				
EA-3013	Carry out functional test on Hydraulic oil tank with valve manifold. Readjust Pressure, if required.				
EA-3014	Check the condition of hanging anodes, Replace, if required.				
EA-3015	Carry out functional test on control system. Readjust, if required.				
EA-3016	Carry out in -situ pressure tests of cylinder seals & replace the cylinder seals				
EA-3017	Carry out pressure test and crack test of hydraulic hoses.				
EA-3018	Replace the feedback cables				
EA-3019	Replace the anodes below shaft protection tube, on ship transom and shaft seal anode.				
EA-3020	Carry out functional test of control system alarms calibration of Levers, Feedback units and readjust indicators.				
EA-3021	Replace the hub bearing, hub seal.				
EA-3022	Replace O rings, bolts of impeller. Stub shaft in pump unit.				
EA-3023	Refurbish the shaft seal.				
EA-3024	Replace the split cone ring.				
EA-3025	Inspect mechanical interface between				
EA-3026	Impeller shaft and impeller shaft journal.				
EA-3027	Replace the bushings.				
EA-3028	Replace the locking plates.				
EA-3029	Carryout through inspection of complete plate areas.				
EA-3030	Renew the complete hydraulic oil of the system.				
EA-3031	Replace the counter balance valve (V41, V42 & V18).				
EA-3032	Change all hoses (Mat. Yard Supply). Hoses to withstand pressure of 210 bar. Size as follows				
		SL	SIZE	QTY	REMARKS
		(a)	Internal Dia-12.5mm length- 80 cm	12 Nos	All hose to be supplied along with union adaptor on both ends. SS wore
		(b)	Internal Dia-19.5mm length- 80 cm	02 Nos	
		DO through PAC firm M/s Rolls Royce, Mumbai. Material yard supply.			

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EA-3033	(c)	Internal Dia-12.5mm length- 1.2	02 Nos	braided hose with rubber coating through OEM/ PAC firm	DO. Spares and material yard supply.
	(d)	Internal Dia-12.5mm length- 1.8	02 Nos		
EA-3034	Following hydraulic system valves to be overhauled and pressure tested for 05 bar.				
	Description	Qty.			
	Ball valve	05 nos			
	Quick closing valve	02 nos			
EA-3034	Renewal 04 nos. flange arresting valves and examines tank sounding and vent pipes for defects.				
AC PLANT, MAKE-HEINEN & HOPMAN,TYPE-6DA5372 BA0650					
EA-3035	Compressor to be top overhauled and proved for satisfactory operation. spares CG supply (PAC firm M/S H & H).				
EA-3036	AC condenser to be chemically cleaned and pressure tested.				
EA-3037	Vacuum and pressure test to be carried out in the system for 24 hours				
EA-3038	Check the operation of two way solenoid valve and expansion valve				
EA-3039	Charge with refrigerant and oil & plant to be proved				
YEARLY ROUTINE OF AHU (AC), MAKE-ZECO INDIA LTD, TYPE- DLH 08 C 0198, NO. OF FITTED -01					
EA-3040	AHU blower to be overhauled and defective parts and bearings to be renewed. (Bearings yard supply)				
EA-3041	Diffuser (Qty 12 Nos.) Air control mechanism to be overhauled and proved.				
EA-3042	Blow through the cooling coil with air stream from counter flow direction.				
FM 200 FIRE FIGHTING SYSTEM, MAKE – M/s TYCO FIRE FIGHTING, TYPE-FM 200, QTY – 01					
EA-3043	Remove any nozzle from piping to allow any foreign material to blow clear.				
EA-3044	Remove all pressure operated control from FM 200 cylinders.				
EA-3045	Open distributing valve and keep long enough cleanliness of pipe.				
EA-3046	Reconnect all control heads.				

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EA-3047	Overhaul the control system, monitoring system and fire detection system	
EA-3048	Weigh the cylinder and re-charge, (if weight loss is more than 10%)	
EA-3049	Carry out pressure switch test as per article 6.3.4.10 of FM 200 manual.	
EA-3050	Carry out electric control head test as per article 6.3.4.2 of FM 200 maintenance manual	
EA-3051	Clean discharge nozzles	
OIL WATER SEPARATOR, MAKE – VICTOR MARINE, TYPE- VICTOR MINISEP C50500, NO OF FITTED – 01		
EA-3052	Following jobs to be carried out. (a) Drain both separator stages & remove top covers and overhaul all valves. (Qty: 07 No, Size – 20 mm). (b) Wash through the separator vessels using hot water and clean all valves. (c) Change all gasket and joints. (d) Reset pressure relief / water valves. (e) Replace first stage coalesce pack (f) Inspect vessel interior coating for corrosion	DO through PAC firm. Spares CG supply. Material yard supply
SUBMERSIBLE PUMP (MAKE- MODY INDUSTRIES, TYPE 120 NM) QTY 02, 15 TPH AND 10 TPH; REFIT/2500 HRLY ROUTINE		
EA-3053	Overall both the submersible pumps and prove for satisfactory operation	Delete.
YEARLY ROUTINE OF CENTRIFUGE, MAKE – WESTAFALIA, TYPE-OSD 6-91-067-01 NO		
EA-3054	Inspect thickness of clutch shoes, brake lining, bowl, bowl height and clean inside of the upper section of frame.	DO for DL Sis EA-3054 and EA-3055 through OEM / PAC firm. Spares and oil CG supply.
EA-3055	Replace all gaskets, retaining ring, drive belts, spindle ball bearing, vibration absorber and oil.	Material yard supply
YEARLY ROUTINE OF BILGE GS PUMP, MAKE- AZCUE, TYPE- CA50-3A – 01 NO		
EA-3056	Replace bearings.	DO overhauling of Bilge & GS pump against DL Sis
EA-3057	Replace the mechanical seals.	EA-3056 to EA-3060. Spares CG supply. Material
EA-3058	Check the trip clearance.	yard supply.
EA-3059	Check the wear and tear on impeller	
EA-3060	Replace wear ring and guide ring.	

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YEARLY ROUTINE OF FUEL OIL SYSTEM MAKE- THORNY CROFT AUS – 02 NOS

EA-3061	09 in no. quick closing valve to be overhauled and pressure tested for 01 bar. (40 NB -07 Nos, 25 NB – 02 Nos, Mat: SS)	DO. Material yard supply.																
EA-3062	02 in no. Fuel Priming Hand pump of both main engine to be overhauled and Proved. Type: Diaphragm.	DO. Material yard supply.																
EA-3063	Approx 20 mtr fuel system pipelines to be removed, chemically cleaned, pressure tested and fitted with new gaskets.	Delete.																
EA-3064	Following valves of fuel system to be overhauled and pressure tested upto 05 bar	DO. Material yard supply.																
	<table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Ball valve 40 NB</td> <td>02 Nos.</td> </tr> <tr> <td>Ball valve 40 NB</td> <td>04 Nos.</td> </tr> <tr> <td>Ball valve 20 NB</td> <td>01 Nos.</td> </tr> <tr> <td>NRV 40 NB</td> <td>01 No.</td> </tr> <tr> <td>40 NB emergency shut off valves</td> <td>02 Nos.</td> </tr> <tr> <td>25 NB emergency shut off valves</td> <td>01 No.</td> </tr> <tr> <td>NRV 25 NB</td> <td>01 No.</td> </tr> </tbody> </table>	Description	Qty	Ball valve 40 NB	02 Nos.	Ball valve 40 NB	04 Nos.	Ball valve 20 NB	01 Nos.	NRV 40 NB	01 No.	40 NB emergency shut off valves	02 Nos.	25 NB emergency shut off valves	01 No.	NRV 25 NB	01 No.	
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NRV 25 NB	01 No.																	

YEARLY ROUTINE OF HYDRAULIC OIL SYSTEM MAKE- THORNY CROFT – 02 NOS

EA-3065	06 in no. quick closing valve to be overhauled and pressure tested.	Do. Material yard supply.
EA-3066	Chemically cleaned, pressure testing of system pipes and fitted with new gaskets. Dia-25mm and total length – 10 Mtr, Mat- SS (Hydraulic oil system)	Do. Material yard supply.
EA-3067	Renew 04 nos flange arresting valves(Mat- SS, 40 NB), Examine tank sounding and vent pipes for defect.	Delete. Covered under EA-3034

YEARLY ROUTINE OF SEA WATER COOLING SYSTEM

EA-3068	Following valves of sea water system to be overhauled and pressure tested for 05 bar.	DO. Spares and material yard supply.								
	<table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Butterfly Valve 150 NB</td> <td>01 No</td> </tr> <tr> <td>Butterfly Valve 250 NB</td> <td>01 No</td> </tr> <tr> <td>Butterfly Valve 40 NB</td> <td>02 No</td> </tr> </tbody> </table>	Description	Qty	Butterfly Valve 150 NB	01 No	Butterfly Valve 250 NB	01 No	Butterfly Valve 40 NB	02 No	
Description	Qty									
Butterfly Valve 150 NB	01 No									
Butterfly Valve 250 NB	01 No									
Butterfly Valve 40 NB	02 No									

Ator

EA-3071	30 mtrs Fireman and bilge system pipelines(Dia- 60 mm, Mat-SS) to be removed, Chemically cleaned, pressure tested and fitted back with new gaskets.	DO. Material yard supply.																						
YEARLY ROUTINE OF LUB OIL / DIRTY OIL SYSTEM																								
EA-3072	Approx 10 Mtrs(Dia- 35 mm, Mat SS) system pipe lines to be removed, chemically cleaned, pressure tested and fitted with new gaskets.	DO. Material yard supply																						
EA-3073	Carry out pressure testing of flexible hoses.	DO.																						
EA-3074	Overhaul semi rotary hand pump. Spare yard supply.	DO.																						
EA-3075	Renew flame arresting gauges. (Gauge specification:- 1 to 9 Kg/cm ²)	S&D																						
EA-3076	Overhaul and pressure test following system valves.	DO. Material yard supply																						
	<table border="1"> <thead> <tr> <th>Description</th> <th>Qty.</th> </tr> </thead> <tbody> <tr> <td>High pressure ball valve 1/2" BSP</td> <td>03</td> </tr> <tr> <td>Ball valve 50 NB</td> <td>01</td> </tr> <tr> <td>Ball valve 2" BSP</td> <td>01</td> </tr> <tr> <td>Ball valve 1/2" BSP</td> <td>01</td> </tr> <tr> <td>NRV SAE 1"</td> <td>01</td> </tr> <tr> <td>Ball valve 20 NB (03 pieces)</td> <td>02</td> </tr> <tr> <td>NRV 25 NB</td> <td>01</td> </tr> <tr> <td>Ball valve 25 NB</td> <td>01</td> </tr> <tr> <td>NRV 20 NB</td> <td>01</td> </tr> <tr> <td>Ball valve 40 NB</td> <td>01</td> </tr> </tbody> </table>	Description	Qty.	High pressure ball valve 1/2" BSP	03	Ball valve 50 NB	01	Ball valve 2" BSP	01	Ball valve 1/2" BSP	01	NRV SAE 1"	01	Ball valve 20 NB (03 pieces)	02	NRV 25 NB	01	Ball valve 25 NB	01	NRV 20 NB	01	Ball valve 40 NB	01	
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NRV 25 NB	01																							
Ball valve 25 NB	01																							
NRV 20 NB	01																							
Ball valve 40 NB	01																							
YEARLY ROUTINE OF BLACK AND GREY WATER SYSTEM																								
EA-3077	System pipes to be chemically cleaned and pressure tested up to 05 bar.	DO. Material yard supply.																						
EA-3078	Examine filling and vent pipes for defects.	Delete. SS																						
EA-3079	Carry out overhauling and pressure testing of system valves and Check function of relief valves..	DO. Material and spares yard supply. Valves size:40 NB (02 nos).																						
EMERGENCY FIRE PUMP, MAKE -AZUE & LOMBARDINI, TYPE - M036/20, QTY-01																								
EA-3080	Carry out overhauling of emergency fire pump & pump to be proved.	DO. Spares & Material yard supply.																						

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RO PLANT, MAKE- M/S ROCHEM TYPE- RO2000DT 0125 PVC - 01 NO		
EA-3081	Replace mechanical seals of PK 30 pump as applicable ref chapter 5.6.	DO for DL s/s EA-3081 to EA-3087 through PAC firm. Spares CG supply. Material yard supply
EA-3082	Calibrate torque wrench.	
EA-3083	Calibrate hand conductivity meter ref chapter 5.18.	
EA-3084	Inspect PS 51, PS 71, PS 81 pressure switches ref chapter 5.15	
EA-3085	Replace HP pump manifold heads (ref. Chapter 5.7)	
EA-3086	Replace DT module with service exchange module	
EA-3087	Replace circuit breakers and contactors as required	
YEARLY ROUTINE OF AC CONDENSER PUMP MAKE- JP PUMP TYPE- FREE FLOW CENT PUMP - 01		
EA-3088	Following jobs to be undertaken on AC Condenser pump & pump to be proved. (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearances. (d) Check the wear and tear of impeller renew if required. (e) Replace wear ring and guide ring.	DO overhauling. Spares CG supply. Material yard supply.
YEARLY ROUTINE OF GREY WATER PUMP, MAKE- AZUE, TYPE- CA 32/0.5 NO-01		
EA-3089	Following jobs to be undertaken on Grey water pump & pump to be proved. (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the trip clearances. (d) Check the wear and tear on impeller renew if required. (e) Replace wear ring and guide ring.	DO overhauling. Spares CG supply. Material yard supply.
YEARLY ROUTINE OF WATER SCOOTER, MAKE- YAMAHA, TYPE- VX700, NO-01		
EA-3090	Check, clean & adjust spark plug.	Delete. Defect if any to be discussed during R.F.I.C.
EA-3091	Lubricate the lubricant points	
EA-3092	Check fuel system	
EA-3093	Replace fuel filter	
EA-3094	Check and clean fuel tank	
EA-3095	Check, clean oil injection system	
EA-3096	Check adjust carburetor	
EA-3097	Check adjust trolling speed	

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EA-3098	Check carburetor throttle shaft	
EA-3099	Flush cooling water passages	
EA-3100	Check, clean water inlet strainer	
EA-3101	Clean bilge strainer	
EA-3102	Check impeller	
EA-3103	Check adjust jet trust nozzle angle	
EA-3104	Check adjust throttle cable	
EA-3105	Check adjust choke cable	
EA-3106	Check, replace stern drain plugs	
EA-3107	Check charger battery	
EA-3108	Check rubber coupling	
EA-3109	Check engine mount	
EA-3110	Check and clean oil injection system	
EA-3111	Check adjust carburetor	
YEARLY ROUTINE OF FUEL OIL TRANSFER PUMP, MAKE-AZCUE, TYPE-CA 32/0.5, NO-02		
EA-3112	Replace bearings.	DO overhauling of FOT pump against DL SIs EA-3112 to EA-3117. Spares CG supply. Material yard supply.
EA-3113	Replace the mechanical seals.	
EA-3114	Check the trip clearances.	
EA-3115	Check the wear and tear on impeller renew if required.	
EA-3116	Replace wear ring and guide ring.	
EA-3117	Replace gauges.	
YEARLY ROUTINE OF SANITARY PUMP, MAKE-LOWERA, ITALY MODEL - 4HMS7/A, NO-01		
EA-3118	Overhaul and examine mechanical seal on the macerator, two cutter rings, the impeller & the pumping element. Replace all components when show sign of wear and damage.	DO overhauling. Spares and material yard supply.
YEARLY ROUTINE OF EXHAUST SYSTEM, MAKE- THORNY CROFT, QTY -02		
EA-3119	Overhaul butterfly valves. In ways jobs includes renewal of promatec / ceramic gasket in the exhaust system and DP test of bulkhead flange joint on port and starboard side.	DO. Spares and material yard supply.
YEARLY ROUTINE OF OBM, MAKE- MERCURY MARINER, 25 HP 2 STROKE, QTY-02		
EA-3120	Overhaul the both OBM.	Delete. To be undertaken through SRMO

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DIVING AIR COMPRESSOR MAKE – GOENKA ENGG GA-3 (3.5) PAC: - M/S GOENKA ENGG. & INDL. PVT, NEW DELHI

EA-3121 Overhaul the Diving Air Compressor and prove for satisfactory operation. DO. Spares CG supply. Material yard supply.

EA-3122 Air analysis to be carried out and charging adapter to be renewed. DO. Material yard supply. All inway jobs included.

BILGE SYSTEM

EA-3123 Overhaul and pressure test following fresh water system valves

DO 25 % only.
Spares and material yard supply.

Sl No	Description	Qty. in nos
(a)	Ball valve 3/4 " (20 BSP)	02
(b)	Ball valve 1/2 " (15 BSP)	02
(c)	NRV 20 BSP	01
(d)	Ball valve 20 BSP	03
(e)	Safety valve 1/2"	01
(f)	Ball valve 16 mm OD	02
(h)	Ball valve 20 mm OD	03
(j)	Flush valve	01
(k)	NRV 3/4 " BSP	01
(l)	NRV 1/2" BSP	01

EA-3124 Approx 15 mtr fresh system pipe lines to be removed, chemically cleaned, pressure tested and fitted with new gaskets. DO. Material yard supply.

FRESH WATER PUMP, MAKE-AZUE, TYPE-MO 36/20, NO-01

EA-3125 Following jobs to be undertaken on fresh water Grey water pump. Spare CG supply. DO overhauling. Spares CG supply. Material yard supply.

- a) Dismantle the pump
- b) Replace the bearings
- c) Replace the mechanical seal
- d) Check the tip clearances
- e) Check the wear and tear on impeller renew if required
- f) Change wear ring and guide ring

BILGE SYSTEM PIPELINE

EA-3126 Suction Pipeline of Bilge System deteriorated. Pipeline to be renewed with flange (length 20 Mtrs and 10 in no flange dia 30 mm Material SS)

DO. Material yard supply. All inway jobs included.

HUMPHREE SYSTEM, MODEL/TYPE : 4XH1250

EB-3127	Overhauling of Humphrey system to be carried out and fitment of 01 in no servo motor with position ID 4 (Protocol 2) (SU201-C) to be carried out.	DO through PAC firm. Spares CG supply. Material yard supply.
EB-3128	Stbd blades of humphree system not coming out. Suspect blades stuck. Defect to be rectified and proved.	DO through PAC firm. Spares CG supply. Material yard supply.

Report of work

ELECTRICAL DEFECT LIST FOR ANNUAL U/W AND FIVE YEARLY JET ROUTINE OF C-152

DL SL	DESCRIPTION	RHQ(NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: ICCP, MAKE: CUPROBAN , UK, QTY: 01 NOS		
LA-5001	Inspect Shield Paint and paste around the anodes and reference electrode. If peeled off, the area to be recoated.	Discuss during RFIC.
LA-5002	Inspect Anode and Reference Electrode for any mechanical damage and deterioration. Replace zinc anodes.	
LA-5003	Inspect water seepage in the junction box.	
LA-5004	Carryout functional test and calibrate all meters	
LA-5005	Carryout insulation checks w.r.t hull.	
EM LOG MAKE: WALEKR 4040, QTY:01 NO, PAC FIRM - M/S ELCOME INTEGRATED SYSTEMS		
LA-5006	Carry out calibration of EM log and compare the readings with GPS speed. Difference should be within permissible limits.	DO through PAC firm M/s Elcome Integrated Systems.
GYRO COMPASS , MAKE- ANSCHUTZ , TYPE- STD 22, QTY -01, PAC FIRM - M/S ELCOME INTEGRATED SYSTEMS		
LA-5007	Open master compass and dismantle the gyro sphere and inspect all other assembly I any damage deterioration, change wherever necessary.	DO LA-5007 &LA-5008 through PAC firm. Spares CG supply.
LA-5008	Change the supporting liquid and distilled water, replacing filter ring, Teflon washer , gasket and distilled water.	
REPEATER COMPASS, MAKE- ANSCHUTZ, TYPE- STD-22 QTY- 05, PAC FIRM - M/S ELCOME INTEGRATED SYSTEMS		
LA-5009	Open repeaters, clean it and apply thin coat of appropriate grease to gimbals, gear, and wheel or teeth belt if required.	DO through PAC firm M/s Elcome Integrated Systems.. Spares CG supply.
ECHO SOUNDER, MAKE- KODEN, TYPE- CVS 833, QTY -01, PAC FIRM - M/S ELCOME INTEGRATED SYSTEMS		
LA-5010	Following jobs to be undertaken on Echo sounder. (a) Check transducer for water tightness and check transducer cables for insulation. (b) Calibrate equipment & check accuracy.	DO through PAC firm M/s Elcome Integrated Systems.. Spares CG supply.
MAIN ENGINE CONTROLS, MAKE- MTU DETROIT DIESEL, PAC FIRM – M/S MTU, PUNE/ M/S YEOMAN MARINE SERVICES		
LA-5011	Carry out functional test and calibrate & prove all sensors and safeties of engines.	DO LA-5011 &LA-5012 through PAC firm M/s YMPL. Spares CG supply.
LA-5012	Check the condition to all electrical connection in LOP, Bridge & Fly Bridge for loose connection, deterioration of wiring/cables and replace if required.	

at 28/11/2011

RADAR, MAKE-FURUNO, TYPE-FAR 2117,FAR 28X7 SERIES, PAC FIRM -M/S AS MOLOOBHOY, MUMBAI		
LA-5013	Carryout services by Servicestaff as per instruction laydown in the maintenance manual	DO. Through PAC firm M/s AS Molobhoy. Spares CG supply
WIND MEASURING SYSTEM, MAKE-WALKER,TYPE-7070 DATA P249		
LA-5014	Following job to be undertaken (a) Check the speed sensor bearing. (b) Renew the damping fluid for the wind direction sensor.	Do. Spares and Material yard supply.
MF/HF TX/RX 150/250 W CONTROL UNIT CU 5100, MAKE- SAILOR, QTY-01 NO		
LA-5015	Performance checks to be carried out by service engineer as per service manual. Certificate from authorized agency post routine.	Delete.
VHF TX/RX, MAKE-SAMYUNG,TYPE-STR 6000A, QTY-02 NOS		
LA-5016	Performance checks to be carried out by service engineer as per service manual. Certificate from authorized agency post routine.	Delete.
ALL MODE COMMUNICATION RECEIVER 100KHZ TO 2600 MHZ, MAKE-YAESU, TYPE- VR 5000		
LA-5017	Performance checks to be carried out by service engineer as per service manual. Certificate from authorized agency post routine.	Delete.
HF POWER SUPPLY UNIT/BATTERY CHARGER, MAKE- SAILOR/ALCOME, TYPE- 24V DC,QTY-01		
LA-5018	Performance checks to be carried out by service engineer as per service manual. Certificate from authorized agency post routine.	Delete.
EPRIIB, MAKE- ACR, MODEL-RLB-37, QTY-01		
LA-5019	Carry out performance check	Delete.
GMDSS ALARM UNIT,MAKE- SAILOR, TYPE- AP 5065, QTY-01		
LA-5020	Performance checks to be carried out.	Delete.
PA SYSTEM, MAKE- M/S KODEN ELECTRIC, VINGTOR STEENHAMS TYPE- VPA 120		
LA-5021	Performance checks to be carried out as per maintenance manual and replace defective components, if any.	Delete.
SART, MAKE-M/s SAMYUNG, TYPE-SAR-09 QTY-02		
LA-5022	Carry out function test as specified in service manual. SART to be functionally tested using a radar signals as recommended in the COMSAR Guidelines in manual.	Delete.
AIS, MAKE-M/s SAMYUNG, TYPE- SI-30 QTY-01		
LA-5023	Carry out function test as specified in service manual using a radar signals as recommended guidelines.	Delete.

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ECDIS, MAKE- FURUNO, TYPE- FEA-2.107, QTY-01		
LA-5024	Carry out service as per instructions laid down in maintenance manual.	Discuss during RFIC.
GPS NAVIGATOR, MAKE- KODEN ELECTRIC, TYPE- KGP 920, QTY-01		
LA-5025	Carry out functional checks of all switches, light and panel.	Delete.
DIESEL ALTERNATOR, MAKE - CATER PILLAR, QTY- 02, PAC FIRM- M/S GMMCO		
LA-5026	Inspect, clean winding, re-varnish and improve insulation, if required change bearing.	DO for LA-5026 to LA-5029 through PAC firm M/s GMMCO. Spares and material supply as per RFIC. Carry out load trials on ship's load.
LA-5027	Overhaul full Generator assembly including AVR, battery starter and space heater.	
LA-5028	Check capacity of generator with full load tank test 100%, 75% & 50%&100.	
LA-5029	Following safety trips and alarm sensor to be checked and calibrated, if required (a) Low lub oil pressure (b) High water temperature (c) Over speed trip	
DISTRIBUTION BOARDS, MAKE- MARINE ELECTRICAL QTY-08 NOS		
LA-5030	Carry out functional test of all MCBs replace defective MCB's if any	Delete.
STARTER PANELS, MAKE- MARINE ELECTRICAL, QTY - 15 NOS		
LA-5031	Carry out functional test of all overload relays and replace defective if any.	DO. Material yard supply as per RFIC minutes
FOG HORN, MAKE-ZOLLENER, TYPE- 230 V AC, QTY-01		
LA-5032	Following job to be undertaken, (a) Overhaul the equipment completely (b) Check the components for sign of deterioration. Replace the deteriorated wiring/ components.	DO. Spares yard supply as per RFIC minutes.
WINDOW WIPING SYSTEM, MAKE- HEPWARTH MARINE, TYPE-50 NM, QTY-05		
LA-5033	The following jobs to be undertaken. (a) Check the condition of rigid blades and defective blades to be replaced. (b) Check blade arm and spring for any damage (c) Check spray nozzle are free from blockages (d) Carry out overhauling of motors	DO for serials (a),(b) & (c) . Delete serial (d). Spares yard supply as per RFIC minutes.

attest & sign

FIRE & SMOKE DETECTION ALARM PANEL, MAKE- M/s TYCO MARINE SYSTEM, TYPE- T-1008, QTY-01

LA-5034 Capacity test of batteries and carry out performance check

Delete. SS to indicate defect if any during RFIC.

ELECTRIC COOK TOP (GALLEY HOT PLATES), MAKE- SHARADA ENGG, BARODA, QTY-02

LA-5035 Check insulation of heating elements. Replace if required.

LA-5036 Check function of range switches. Replace if required.

DO for serial LA-5035 to LA-5037. Material yard supply as per RFIC minutes.

LA-5037 The following jobs to be undertaken.

(a) Check control wiring if found cracked, to be replaced.

(b) Check wire of hot plate and their sleeve if found hard, to be replaced.

(c) Check end connection if defective to be replaced.

MAIN SWITCH BOARD, MAKE- MARINE, TYPE-1727-01R5, QTY-01

LA-5038 (a) Check the switches and whole wiring of Main Switch Board for sign of deterioration. (b) Replace the deteriorated WIRING/COMPONENTS. Calibrate the all meters, if defective replace.

DO calibration of meters only. Yard to provide calibration certificate.

(C) Before carrying out insulation test all rectifiers are to be disconnected. On no account must a full megger voltage to be applied across a rectifier.

MOTORS

LA-5039 Following motor overhauled. Job includes checking of insulation, rewinding if required, varnishing, renewal of bearing and painting

DO. Material yard supply as per RFIC minutes. Yard to quote for individual motors

Sl	Description	Qty
01	Supply/ Exhaust blower motor (5.5/7.5 KW)	02 Nos
02	ATU Blower motor (251 W)	01 No
04	Galley & bath room Exhaust motor (215/319 KW)	02 no.
05	Anchor windlass motor (04 KW)	01 No.
06	Water scooter Davit & Gemini Winch motor(2.6 kw)	02 no.
07	Fresh Water Pump motor (0.7 KW)	01 no.
08	Grey Water Pump motor (0.55 KW)	01 no.
09	Sprinkling Water Pump motor (1.1 KW)	01 no.
10	Fire main Pump motor (2 KW)	01 no.
11	FO Transfer Pump motor (0.55 KW)	01 no.
12	A/C condenser pump motor	01 no.

TANK LEVEL MONITORING SYSTEM, MAKE-ARISTON, NORWAY	
LA-5040	Tank level monitoring system to be overhauled and sensor (09 Nos) to be calibrated. Do through PAC firm. Spares CG supply.
SEARCH LIGHT, MAKE- FRANCIS, TYPE -- FX-380 RC	
LA-5041	Performance check to be carried out DO. Spares yard supply as per RFIC minutes.
BATTERY CHARGER, MAKE : MARINE ELECTRICAL QTY: 04 (240V,1PH,60HZ/24V,DC.50A- 02NOS + 415V,3PH,50HZ/24V,DC.75A-02 NOS)	
LA-5042	Overhaul all the battery charger. The entire system to be checked and proved. Replace the deteriorated wiring/components. DO. Spares yard supply as per RFIC minutes.
TELEPHONE EXCHANGE, MAKE- ALPHACOM, TYPE- STENTOFON, QTY-01	
LA-5043	Carry out functional test of all components as per maintenance manual. Delete.
NAVIGATION LIGHT CONTROL PANEL, MAKE- NORSE LIGHT, QTY-01 NO	
LA-5044	(a) Navigation light control panel to be checked and proved (b) Control panel PCB defective to be repaired (c) Check all flood light and replace if defective DO. Spares CG supply.
24 V DISTRIBUTION BOARDS, MAKE: MARINE ELECTRICAL, QTY – 02 Nos	
LA-5045	Following meters to be calibrated (a) Voltmeter – 02 Nos (b) Ammeters - 02 Nos Delete.SS
BATTERIES 200 AH/150 AH MAKE- X POWER, QTY-14, AND BATTERIES 100 AH, MAKE- EXIDE EXPRESS, QTY-02 TYPE- LEAD ACID,	
LA-5046	Carry out capacity test. If not satisfactory replace with new one. Delete.
SHIP SERVICE BATTERY CHARGER, MAKE: MARINE ELECTRICAL, CAP : 75 A, QTY-02 NOS	
LA-5047	Following meters to be calibrated (a) Voltmeters – 02 Nos (b) Ammeters – 02 Nos Do Calibration only. Yard to provide calibration certificate.

at (2) 8/11/11

HULL DEFECT LIST FOR ANNUAL U/W AND YEARLY JET ROUTINE OF C-149

DL SL.	DESCRIPTION	RHQ(NW) REMARKS
UNDER WATER WORK PACKAGE : HULL AND APPENDAGES, MAKE: ABG SHIP YARD, LOCATION: GENERAL		
HA-1001	Carry out docking and undocking of the ship as per docking plan. Scrap and clean the marine growth immediately on completion of docking and wash with fresh water. Clean the EM log and Echo sounder pick up head. Clean all sea growth and apply paint as per paint scheme. Both version of docking to be carried out. (touch up scheme-Jotun) (H-18)	DO. Docking in two versions. Docking plan to be provided by ship. Painting Covered under HA-1005.
HA-1002	Renew all sacrificial anodes (both hull and jets) which are consumed 50% or more. All other anodes to be cleaned with wire brush. Qty – 08 in nos (04 nos main engine sea chest and 04 nos shaft protection tube.(H-18)	DO. Anodes CG Supply
HA-1003	Carry out UTG of critical or suspected area as per class surveyor's recommendation (Total UTG points: 350). Renew hull plates as necessary. Class surveyor certification to be arranged by yard.(H-18). 500 Kg of aluminum plate to be renewed.	DO UTG 350 points under surveyor presence Renewal of hull plate against AWRF as per surveyor recommendations. Material yard supply.
HA-1004	Remove all 03 nos. under water gratings, clean and chip to bare metal and to be fitted after painting as per paint scheme with adequate surface preparation. Renew all fasteners (Material –SS) Paint Scheme -Jotun (H-18)	Do. Paint and material yard supply
HA-1005	Underwater Painting. Touch up paint scheme of under water, boot Top and jet tunnel to be carried out as per CGBR 382 annexure 4(B). Total area 250 sq. mtr. Paint yard supply Paint Scheme -Jotun (H-18).	DO. Touch up paint scheme of jotun FRC scheme paint yard supply
HA-1006	The main jet system compartment to be cleaned with paint remover, scrapers and repainted as per paint scheme. Inner circumference of 02 nos jet transom plates to be painted on completion of jet routines. Paint Scheme -Jotun(H-18)	DO. Paint to be removed using paint remover/scraper without damage to surface. Painting covered under HA-1005.
HA-1007	Paint draught markings, ship side blue bands and Indian Coast Guard name to be written as per annexure 5L to 5P of CGBR-382.	DO, Blue band, pennant number at transom and Indian Coast Guard in English (Port side) "भारतीय तटरक्षक" in Hindi (Stbd side) to be painted as per CGBR 382. Paint CG supply

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SHIP SIDE SUPER STRUCTURE, UPPER DECK FITTINGS & MAST, MAKE: ABG SHIPYARD, LOCATION: GENERAL

HA-1008	Check for deterioration of hull plates and handles for physical damage. (H-01)	Do. Survey by class surveyor and 100 UTG points															
HA-1009	Ship side and super structure paint peeled off. Ship side and superstructure along with upper deck fittings to be painted as per Jotun paint scheme. (Ship side area: 240 Sq. Mtrs and Super Structure area: 115 Sq. Mtrs) (H-01) Ship side	Do. Touch up paint scheme Paint CG supply															
	<table border="1"> <thead> <tr> <th>Paint name/colour</th> <th>DFT</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>Penguard HB, Red</td> <td>100</td> <td>80</td> </tr> <tr> <td>Penguard HB, Grey</td> <td>100</td> <td>80</td> </tr> <tr> <td>Hardtop XP, White</td> <td>50</td> <td>40</td> </tr> <tr> <td>Hardtop XP, White</td> <td>50</td> <td>40</td> </tr> </tbody> </table>	Paint name/colour	DFT	QTY	Penguard HB, Red	100	80	Penguard HB, Grey	100	80	Hardtop XP, White	50	40	Hardtop XP, White	50	40	
Paint name/colour	DFT	QTY															
Penguard HB, Red	100	80															
Penguard HB, Grey	100	80															
Hardtop XP, White	50	40															
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	Super Structure & Mast <table border="1"> <thead> <tr> <th>Paint name/colour</th> <th>DFT</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>Penguard HB, Red</td> <td>100</td> <td>40</td> </tr> <tr> <td>Penguard HB, Grey</td> <td>100</td> <td>40</td> </tr> <tr> <td>Hardtop XP, White</td> <td>50</td> <td>20</td> </tr> <tr> <td>Hardtop XP, White</td> <td>50</td> <td>20</td> </tr> </tbody> </table>	Paint name/colour	DFT	QTY	Penguard HB, Red	100	40	Penguard HB, Grey	100	40	Hardtop XP, White	50	20	Hardtop XP, White	50	20	
Paint name/colour	DFT	QTY															
Penguard HB, Red	100	40															
Penguard HB, Grey	100	40															
Hardtop XP, White	50	20															
Hardtop XP, White	50	20															

WATER TIGHT DOORS AND HATCHES (DOORS-06 Nos, HATCHES- 04 Nos), LOCATION: GENERAL

HA-1010	Carry out watertight test by chalk/hose testing on the door and hatches (H-02)	DO. Undertake 100% survey and chalk test on all
HA-1011	100% survey of all water tight doors and hatches to be carried out. Repair defect if any and replace defective rubber seating due to fair wear and tear and re test doors and hatches for water tightness. (H-02)	WT doors and hatches with class Surveyor. Repairs if any under AWRP.
HA-1012	Carry out cleaning of inside & outside area of both water jet buckets for Erosion/corrosion and peeling off paint film. Report is to be rendered with class surveyor's recommendations.	Delete Covered in HA-1001

GENERAL COMPARTMENTS, NO.1 DECK ABOVE AND BELOW, MAKE: ABG SHIP YARD, AREA: 230 SQ MTRS.

HA-1013	100% area to be visually surveyed, carry out non-destructive test on suspected area and carry out repair as necessary. (H-04) Area: Engine room Bilge 90m ² , water jet and Silencer compartment-30m ² . Other areas 110 sqr mtr. Paint scheme Jotun paint	Do. Yard to cater for survey and touch up paint scheme only for bilges. Paint CG supply
	(1) Penguard HB grey (03 Coat)	

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FRESH WATER TANK, CAPACITY-01 TON, LOCATION: STBD SIDE BELOW LADDER IN AC COMPARTMENT													
HA-1014	Clean and pressure test the fresh water tank to design pressure up to 3 bar/as per trials protocol). Renew manhole cover gaskets.(H-10)												
HA-1015	Remove the fresh water from tanks, clean and scrap the paint and carry out 100% survey. Repaint the tanks as per full paint scheme. (Surface Area: 10 Sq Mtrs). Paint Scheme: Jotun with dry film thickness.												
	<table border="1"> <thead> <tr> <th>Paint name, colour</th> <th>DFT</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>Penguard HB, White</td> <td>100 (First and final coat)</td> <td>20</td> </tr> <tr> <td>Penguard HB, Grey</td> <td>100 (Second coat)</td> <td>20</td> </tr> </tbody> </table>	Paint name, colour	DFT	QTY	Penguard HB, White	100 (First and final coat)	20	Penguard HB, Grey	100 (Second coat)	20			
Paint name, colour	DFT	QTY											
Penguard HB, White	100 (First and final coat)	20											
Penguard HB, Grey	100 (Second coat)	20											
FUEL, LUB, HYDRAULIC AND DIRTY OIL TANK LOCATION: MAIN ENGINE ROOM/SILENCER COMPARTMENT/ENGINE ROOM ALLEY WAY													
HA-1016	Following tanks to be internally cleaned /surveyed and pressure tested.(H-15) (a) Fuel Tank - 05 Nos. (3.6 Kl -02 Nos, 3.0 Kl -01, 1.9 Kl -02) (b) Lub oil tank: 01 (Cap-300 Ltrs) (c) Dirty Oil tank : 01 Kl (01 no).												
HA-1017	Clean, Scrap and re-paint outer surface of tanks as per paint scheme (Total Area for outer surface for tanks - 15 Sq Mtr). Scope of job includes removal and replacement of lagging on 02 Nos fuel tanks.(Area of lagging : 05 Sq Mtrs, Lagging Material: Glass wool and aluminum foil), Following paint scheme to be carried out.												
	<table border="1"> <thead> <tr> <th>Coat (nos)</th> <th>Paint name/colour</th> <th>DFT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Penguard HB, Grey</td> <td>100</td> </tr> <tr> <td>1</td> <td>Penguard HB, Red</td> <td>100</td> </tr> <tr> <td>1</td> <td>Penguard HB, Grey</td> <td>100</td> </tr> </tbody> </table>	Coat (nos)	Paint name/colour	DFT	1	Penguard HB, Grey	100	1	Penguard HB, Red	100	1	Penguard HB, Grey	100
Coat (nos)	Paint name/colour	DFT											
1	Penguard HB, Grey	100											
1	Penguard HB, Red	100											
1	Penguard HB, Grey	100											
GREY WATER TANK, AREA-06 SQ MTR, CAPACITY-01 TON, LOCATION: PORT SIDE BELOW IN AC CMPT AND EP'S WC													
HA-1018	Remove gray water tank, Clean with liquid detergents and scrap the damaged paint. Carry out 100% survey by surveyor. Renew manhole cover gaskets. Re-paint the tank as per paint scheme, Cap-01 Ton, Paint yard supply. Scope of job for removal of tank includes:(H-16) (a) Removal and re-fitment of bath wash basin and floor and adjacent area of AC compartment including associated repairable area of adjacent compartments for clearance of												

7/10/2018

DO only cleaning. Pressure test if any repairs undertaken on tank.

Do. Survey and Touch up paint scheme. Paint CG supply

Do. Only cleaning and survey by class surveyor

Delete

Do. Touch up paint scheme.

Paint CG supply. Tank to be dismantled/fitted from place for painting and survey of inaccessible area. All Inway jobs included.

- tank.
- (b) Renewed fasteners on tank joints.
- (c) Removal and re-fittment of AC plant including accessories and pipe line.

Coat (nos)	Paint name/colour	DFT
1	Penguard HB, Grey	100
1	Penguard HB, Red	100
1	Penguard HB, Grey	100

BLACK WATER TANK, AREA – 06 SQ MTR, LOCATION: STBD SIDE BELOW LADDER IN AC CMPT

HA-1019 Remove the black water tank. Clean with liquid detergents and scrap the damaged paint, carry out 100% survey by the Surveyor. Renew manhole covers gaskets. Repaint the tanks as per the paint scheme. Paint yard supply. Scope of job for removal of tank includes:

- (a) Removal and re-fittment of floor from main alleyway ladder to entire magazine compartment including associated repairable area of adjacent compartment
- (b) Cutting of two side aluminum bulkhead plate between magazine compartment and ladder area and CO bath room and including associated repairable area of adjacent compartment
- (c) Removal of main alleyway ladder

Do. Touch up paint scheme.
Paint CG supply. Tank to be dismantled/fitted from place for painting and survey of inaccessible area.
All inway jobs included.

SCUPPER AND DRAINS ; MAKE: ABG SHIP YARD, LOCATION: SHIP SIDE

HA-1020 02 Nos, 40MM, scupper valves are to be removed, overhauled and refitted with new scupper lips.(H-08)

DO. material yard supply.

HA-1021 Following drain pipe lines to be chemically cleaned pressure tested and refit with new gaskets.(H-08)

Deleted

SI	Description	Size	50 % of drain pipe line	Testing Pressure
(a)	Wash basin drain	40 mm dia x 5 Mtrs length	3 mtrs	01 Bar
(b)	Galley drain	40 mm dia x 3 Mtrs length	2 mtrs	01 Bar
(c)	Dining hall drain	40 mm dia x 2 Mtrs length	1 mtr	01 Bar

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BOAT DAVIT, GEMINI WINCH AND SLINGS MAKE: ZODIAC, LOCATION: Q/DECK	
HA-1022	<p>Check all high speed bearings and renew. Overhaul the gearbox. Renew the seals, oil and damaged bearings. Carry out survey and load test of davits together with all associated wire ropes, blocks and fittings for SWL (running and Static load test). Rope length - 40 mtrs, Dia: 08 mm; 06 strand. Load test certificate to be provided. Safe working load - 360 kgs (H-07)</p> <p>ANCHOR AND CHAIN CABLE ARRANGEMENT MAKE: SHIP EQUIPMENTS, NETHERLAND, QTY: 01 NO., LOCATION: FORE CASTLE</p>
HA-1023	<p>Anchor (HHP stockless, 117 kg, Qty-01 No.) and Cable (U2 grade DIN 766, 13 mm, 110 m). (H-11)</p> <p>Arranging, scraping, repainting of cable with paint scheme - Jotun (Ballistic black, Black (02 coat, DFT -75) to be carriedout. Job includes dismantle the chain cable from cable locker and lay down on dock floor, Total paint to be removed for inspection and re paint. Marking of cable to be carried out.</p> <p>DIVING SET, FACE MASK, MAKE: DIVATOR MK II, QTY: 02 NOS (EACH) & BASCCA SET, MAKE: SCOTT SIGMA, MODEL: 9.72 KG, QTY:03, LOCATION: QUARTERDECK</p>
HA-1024	<p>Carry out pressure test. Pressure test certificate to be provided. (H-21)</p> <p>Delete. DFP</p> <p>ANCHOR WINDLASS, MAKE: MUIR ENGG. AUS, TYPE: VRC 4500, LOCATION: FORE CASTLE</p>
HA-1025	<p>Following jobs to be carried out: (H-12)</p> <p>(a) Strip and inspect windlass break mechanism</p> <p>(b) Examine brake linings, pin and bush for wear and tear renew as necessary</p> <p>(c) Drain oil from gear box and refill fresh oil</p> <p>(d) Cable holder gypsy and drums to be removed. Examine for gear and deteriorations. Defect to be made good</p> <p>(e) Windlass to be overhauled</p> <p>(f) Non destructive test of anchor windlass, bollards, fear less and stag horn be carried out.</p> <p>Do overhauling. Undertake load test and certificate to be provided. Spares and material yard supply. SI (f) deleted view undertaken in last refit.</p>
CABLE LOCKER MAKE: ABG SHIP YARD, LOCATION: PORT/FORE CASTLE	
HA-1026	<p>Following jobs to be carried (H-13)</p> <p>(a) Clean out locker and removed all ducts. Examine the structure paying particular attention to that in vicinity of cable clench and ship side plating.</p> <p>(b) Replace hard wood linings for insulation inside cable locker</p> <p>Examine and clean drain pipe from chain locker to another pocket.</p> <p>Do for sl (a) only survey by class surveyor. Paint yard supply</p>

7/10/2011

OFFICERS & SAILORS BATHROOM MAKE: BROWN BROARLYTE CO. AUS, LOCATION: OFFICERS/SAILOR/WR

HA-1027	Remove drain pipe of Officers and sailor's bathroom & toilet and clean with soap and fit with new gaskets. Length – 05 mtrs, 125 NB, Material – SS & Length 15 mtrs, Dia 40 NB, Mat PVC (H-14)	DO chemical cleaning for 50% only.
DECKS (MAIN DECK AND FLAG DECK INCLUDING BRIDGE TOP)		
HA-1028	Paint is to be removed using paint remover or as suitable without any damage to metallic surface. Painting of decks as per paint scheme after repair if any. Total area 125 m ² . Final DFT 300 micron.	Do. Touch up paint scheme Paint CG supply
HA-1029	Survey of bollards (08 nos) and towing bollards (02 Nos.) to be undertaken with class surveyor for soundness of structure and load test to be carried out. Certificate to be issued.	DO Survey and NDT in presence of class surveyor
GENERAL /YARD SERVICES		
HA-1030	<p>The following yard services to be provided during docking period.</p> <p>(a) Suitable, hygienic and comfortable accommodation for two Officer, 03 subordinate officer and 10 other ranks with controlled environment within vicinity of 10 km from yard.</p> <p>(b) Fresh water 01 ton/day and portable drinking water 100 liters/day.</p> <p>(c) Fire main pressure 3-5 bar for 24 hours.</p> <p>(d) 415 V, 03 phase, 50 Hz, 25 Amp shore supply with neutral.</p> <p>(e) Separate bathroom and toilet facility for Officers, SOs and other crew members.</p> <p>(f) Telephone connections with fax and broadband facility Separately for entire period of refit/02 nos mobile phone & 01 data card for internet.</p> <p>(g) One Staff car and one transport for ship's company respectively ((12 hrs./120 Kms. per day). Transport utility commences and terminates at gangway.</p> <p>(h) Office space for Commanding Officer and crew separately with air-conditioner.</p> <p>(i) Empty container in good condition for stocking the reserve LSHFSD before docking.</p> <p>(k) Galley with Gas stove and Gas cylinder.</p> <p>(l) Yard to provide emergency light and compressed air as when required basis.</p> <p>(m) Crane facility to be provided as and when required.</p>	Do as per RFIC remarks

ENGINEERING DEFECT LIST FOR ANNUAL U/W AND YEARLY JET ROUTINE OF C-149

DL SL.	DESCRIPTION	RHQ(NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: SEA WATER SYSTEM		
EA-3001	Overhaul and pressure test all under water valves up to 3.0 Kg/cm2. (Mat: SS) (E-13) (a) 250 NB butterfly valve - 02 No. (b) 150 NB butterfly valve - 02 No. (c) 80 NB butterfly valve - 01 No.	DO. Material yard supply.
EA-3002	Overhaul and pressure test all overboard valves up to 5.0 kg/cm2. (Mat: SS). (E-13) (a) 100 NB butterfly valve - 02 Nos. (b) 80 NB butterfly valve - 04 Nos. (c) 32 NB butterfly valve - 04 Nos. (d) 40 NB butterfly valve - 03 Nos. (e) NRV 50 NB - 03 Nos.	DO. Including 50 NB Butterfly valve-03. Material yard supply.
YEARLY UNDER WATER PACKAGE EQUIPMENT WATER JET SYSTEM : MAKE: KAMEWA MODEL 71S II (PUMP UNIT, IMPELLER SHAFTING, GUIDE VANE AND CHAMBER) QTY : 02 NOS (PORT & STBD) PAC FIRM: M/S ROLLS ROYCE MARINE, MUMBAI. LOCALIZATION: WATER JET COMPARTMENT		
EA-3003	Following routines to be undertaken. (E-3) (a) Check mechanical damage to impeller and guide van chamber. } (b) carryout in-situ visual inspection of shaft, shaft seal and shaft coupling. } (c) Carryout in-situ inspection of bulkhead seal } (d) Carryout functional test of counterbalance valve of steering and reversing system. } (e) Carryout functional test of PTO pump and readjust. } (f) Carryout functional test on Electric motor driven lub oil pump and readjust pressure. } (g) Carryout functional test on Hydraulic oil tank With valve manifold and readjust.	Do through PAC firm M/s Rolls Royce, Mumbai. Spares, anodes and oil CG supply. Material yard supply. Scope to be discussed and finalized during RFIC as the description includes two yearly routines also.

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	(h) Check condition of hanging anodes and replace if required – Cathodic protection (j) Carryout functional test on control system. (k) Carryout functional test of alarms , switches and Control system Pressure gauges. (l) Carryout in-situ pressure tests of cylinder seals (m) Carryout pressure test and crack test of hydraulic hoses } Steering and reversing gear system	
EB-3004	02 Nos Transom Flanges to be renewed as per recommendation of IRS during last refit.	DO through PAC firm. Spares CG supply. All inway jobs included
HUMPHREE SYSTEM MAKE: HUMPHREE, SWEDEN, MODEL : 4XH1250, PAC: M/S ELCOME INTEGRATED SYSTEMS, MUMBAI		
EB-3005	Removal and fitment of 04 in no. Interceptors of Humphree system and jet guard to be undertaken as part of renewal of transom flanges.	DO through PAC firm. Spares CG supply.
EB-3006	Removal and fitment of Stub Shaft, Cylinder Ram (Ahead astern and Steering reversing). Inway Job includes renewal of Stub Shaft, 04 Cylinder Ram (Ahead Astern and Steering Reversing)	DO through PAC firm. Spares CG supply.
AC PLANT, MAKE-HEINEN & HOPMAN, TYPE- 6DA 5372 BA 0650 PAC FIRM M/S HEINEN & HOPMAN, KOLKATA		
EA-3007	Compressor to be top overhauled. spares CG supply (E-5)	DO through PAC firm M/s Heinen & Hopman, Kolkata. Spares and oil CG supply. Material yard supply.
EA-3008	Condenser to be chemically cleaned and pressure tested up to 1.5 Kg/cm ² . Scope of job includes renewal of gaskets, sheets and fasteners.(E-5)	DO. Material yard supply.
EA-3009	Check the Operation of two way solenoid valve and expansion valve.(E-5)	DO. Material yard supply. Spares CG supply.
EA-3010	Replace compressor oil and charge refrigerant. Oil CG Supply.(E-5)	DO. Material yard supply. Refrigerant and oil CG supply.
EA-3011	Vacuum and pressure test to be carried out in the system for 24 hrs.(E-5)	DO. Material yard supply. All inway jobs included.
YEARLY ROUTINE OF AHU (AC), MAKE-ZECO INDIA LTD, TYPE- DLH 08 C 0198, NO. OF FITTED -01, LOCATION: BELOW W/H		
EA-3012	Check for corrosion and leakage of cooling coils.(E-5)	DO. Material yard supply
EA-3013	AHU blower to be overhauled and defective parts and bearings to be renewed. (Bearings yard supply).(E-5)	DO. Spares and material yard supply.
EA-3014	Blow through the cooling coil with air stream from counter flow direction. (E-5)	DO. Material yard supply. All inway jobs included.

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EB-3015	Carry out chemical cleaning of cooling coils.(E-5)	DO. Material yard supply
EA-3016	Diffuser (Qty 12 Nos.) Air control mechanism to be overhauled and proved. (E-5)	DO. Spares and material yard supply.
FM 200 FIRE FIGHTING SYSTEM, MAKE – M/S TYCO FIRE FIGHTING, TYPE-FM 200, QTY – 01, LOCATION: QUARTER DECK		
EA-3017	<p>Following jobs to be carried out. (E-6)</p> <p>(a) Remove any nozzle from piping to allow any foreign material to blow clear. (E-6)</p> <p>(b) Remove all pressure operated control from FM 200 cylinders. (E-6)</p> <p>(c) Open distributing valve and keep long enough cleanliness of pipe. (E-6)</p> <p>(d) Blow out all distribution piping with nitrogen to ensure to ensure cleanliness of pipes.(E-6)</p> <p>(e) Reconnect all control heads. (E-6)</p> <p>(f) Overhaul the control system, monitoring system and fire detection system. (E-6)</p> <p>(g) Clean the pipes, lines system and carryout pressure testing of the system.(E-6)</p> <p>(h) Weigh the cylinder and re-charge, (if weight loss is more than 10%). (E-6)</p> <p>(j) Clean discharge nozzles. (E-6)</p>	DO for DL Sls EA-3017 to EA-3019 through authorised firm. Recharge of gas if any under AWRP.
EA-3018	Carry out pressure switch test. (E-6)	
EA-3019	Carry out electric control head test. (E-6)	
YEARLY ROUTINE OF OIL WATER SEPARATOR, MAKE – VICTOR MARINE, TYPE- VICTOR MINISEP C50500, NO OF FITTED – 01, PAC FIRM: M/S AMT ENVIRO CLEAN, MUMBAI, LOCATION:MER		
EA-3020	<p>Following jobs to be carried out. (E-7)</p> <p>(a) Drain both separator stages & remove top covers and overhaul all valves. (Qty: 07 No, Size – 20 mm). (E-7)</p> <p>(b) Wash through the separator vessels using hot water and clean all valves. (E-7)</p> <p>(c) Change all gasket and joints. (E-7)</p> <p>(d) Reset pressure relief / water valves. (E-7)</p>	DO through PAC firm. Spares CG supply. Material yard supply.
SUBMERSIBLE PUMP MAKE- MODY INDUSTRIES, TYPE 120 NM QTY 02, 15 TPH AND 10 TPH; REFIT/2500 HRLY ROUTINE, PAC FRIM; MS/ MODY INDUSTRIES, MUMBAI LOCATION: MER		
EA-3021	Check shaft seals, if worn replace it. (E-8)	Deleted.
YEARLY ROUTINE OF CENTRIFUGE, MAKE – WESTAFALIA, TYPE-OSD 6-91-067-01 NO, TYPE-OSD 6-91-067-01 NO, PAC- M/S GEA WESTAFALIA SEPARATOR GROUP,GURGAON, LOCATION: MER		
EA-3022	Clean and inspect of upper section of frame. (E-9)	DO through OEM/PAC firm.
EA-3023	Inspect thickness of clutch shoes, brake lining, bowl, bowl height and clean inside of the upper section of frame and replace any if required. (E-9)	Spares and oil CG supply. Material yard supply.
EA-3024	Replace all gaskets, retaining ring, drive belts, spindle ball bearing, vibration absorber	

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	and oil. (E-9)							
EA-3025	Change oil and bowl height. (E-9)							
BILGE GS PUMP, MAKE- AZCUE, TYPE- CA50-3A – 01 NO, LOCATION: MER								
EA-3026	Following jobs to be undertaken post dismantling the pump. (a) Replace bearings. (E-10) (b) Replace the mechanical seals. (E-10) (c) Check the tip clearance. (E-10) (d) Check the wear and tear on impeller, renew if required. (E-10) (e) Replace wear ring and guide ring. (E-10)	DO overhauling. Spares CG supply. material yard supply.						
FUEL OIL SYSTEM MAKE- THORNY CROFT AUS – 02 NOS, LOCATION: MER								
EA-3027	09 in no. quick closing valve to be overhauled and pressure tested for 01 bar. (40 NB - 07 Nos, 25 NB – 02 Nos, Mat: SS) (E-11)	DO. Material yard supply.						
EA-3028	02 in no. Fuel Priming Hand pump of both ME to be overhauled and Proved. Type: Diaphragm. (E-11)	DO. Material yard supply.						
EA-3029	Overhaul and pressure test all under water valves up to 3.0 Kg/cm ² . (Mat: SS) 25 % of system valves has been catered. (E-11) (a) 40 NB Ball valve - 03 No. (b) 40 NB Ball valve (3 Piece) - 05 No. (c) 20 NB Ball valve - 02 No. (d) NRV 40 NB - 01 No. (e) NRV 20 NB - 02 No.	DO. Material yard supply.						
HYDRAULIC OIL SYSTEM MAKE- THORNY CROFT – 02 NOS, LOCATION: JET ROOM								
EA-3030	06 in no. quick closing valve to be overhauled and pressure tested. (E-12)	DO. Material yard supply.						
EA-3031	Chemically cleaned, pressure testing of system pipes and fit with new gaskets. (E-12)	DO. Material yard supply.						
EA-3032	Renew 04 nos flange arresting valves, Examine tank sounding and vent pipes for defect. (E-12)	DO spares and material yard supply.						
EA-3033	Overhaul 06 no. Ball valve of system. (E-12)	DO. Material yard supply.						
SEA WATER COOLING SYSTEM , LOCATION: MER								
EA-3034	Following valves of sea water system to be overhauled and pressure tested for 05 bar. (25% of system valve is catered) (E-13)	DO. Spares and material yard supply.						
	<table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Butterfly Valve 40 NB</td> <td>02 No</td> </tr> <tr> <td>Butterfly Valve 80 NB</td> <td>01 No</td> </tr> </tbody> </table>	Description	Qty	Butterfly Valve 40 NB	02 No	Butterfly Valve 80 NB	01 No	
Description	Qty							
Butterfly Valve 40 NB	02 No							
Butterfly Valve 80 NB	01 No							

02/18/17 *[Signature]*

	Butterfly Valve 100 NB 02 No ME Exhaust O/B discharge valve 01 No Ball Valve 20 NB 01 No Ball Valve 15 NB 01 No Butterfly Valve 40 NB (3 Piece) 01 No																												
EA-3035	Following Sea water system pipe lines to be removed, chemically cleaned, pressure test up to 05 bar and fitted with new gaskets. (Mat: SS) (25% length is catered) (E-13) <table border="1" data-bbox="523 1232 842 1966"> <thead> <tr> <th>Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Main engine sea water system line, 125 NB</td> <td>05 Mtrs</td> </tr> <tr> <td>Main engine sea water system line, 80 NB</td> <td>05 Mtrs</td> </tr> <tr> <td>DA sea water system line, 40 NB</td> <td>05 Mtrs</td> </tr> <tr> <td>A/C sea water system line, 40 NB</td> <td>08 Mtrs</td> </tr> </tbody> </table>	Description	Qty	Main engine sea water system line, 125 NB	05 Mtrs	Main engine sea water system line, 80 NB	05 Mtrs	DA sea water system line, 40 NB	05 Mtrs	A/C sea water system line, 40 NB	08 Mtrs		DO. Material yard supply.																
Description	Qty																												
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BILGE AND FIRE MAIN SYSTEM, LOCATION: MER																													
EA-3036	Following valves of sea water system to be overhauled and pressure tested up to 05 bar. 25 % of system valves has been catered. (E-14) <table border="1" data-bbox="962 1171 1487 1966"> <tbody> <tr> <td>Ball Valve 50 NB</td> <td>02 Nos</td> </tr> <tr> <td>NRV 50 NB</td> <td>01 Nos</td> </tr> <tr> <td>Butterfly Valve 50 NB</td> <td>02 Nos</td> </tr> <tr> <td>Ball Valve 25 NB</td> <td>01 No.</td> </tr> <tr> <td>SDNR valve 32 NB</td> <td>073Nos</td> </tr> <tr> <td>Ball Valve 32 NB</td> <td>01Nos</td> </tr> <tr> <td>NRV 32 NB</td> <td>01 No.</td> </tr> <tr> <td>Sea chest inlet valve 50 NB</td> <td>01 Nos</td> </tr> <tr> <td>SDNR valve 50 NB</td> <td>01 Nos</td> </tr> <tr> <td>SDNR valve 25 NB</td> <td>01 No.</td> </tr> <tr> <td>Ball valve 10 NB</td> <td>01 Nos</td> </tr> <tr> <td>NRV 20 NB</td> <td>01 No.</td> </tr> <tr> <td>NRV 25 NB</td> <td>01 No.</td> </tr> </tbody> </table>	Ball Valve 50 NB	02 Nos	NRV 50 NB	01 Nos	Butterfly Valve 50 NB	02 Nos	Ball Valve 25 NB	01 No.	SDNR valve 32 NB	073Nos	Ball Valve 32 NB	01Nos	NRV 32 NB	01 No.	Sea chest inlet valve 50 NB	01 Nos	SDNR valve 50 NB	01 Nos	SDNR valve 25 NB	01 No.	Ball valve 10 NB	01 Nos	NRV 20 NB	01 No.	NRV 25 NB	01 No.		DO. Spares and material yard supply.
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at the start

EA-3037	25 mtrs fireman and bilge system pipelines to be removed chemically cleaned and pressure tested upto 04 bar and fitted back with new gaskets. (25% length is catered) (E-14)	DO. Material yard supply.
YEARLY ROUTINE OF LUB OIL / DIRTY OIL SYSTEM, LOCATION: MER		
EA-3038	Approx 10 Mtrs system pipe lines to be removed, chemically cleaned, pressure tested and fitted with new gaskets. (25% length is catered) (E-18)	DO. Material yard supply.
EA-3039	Renew all flexible hoses. (E-18)	Carry out pressure test. Discuss during RFCIC for renewal if any.
EA-3040	Overhaul semi rotary hand pump. spare yard supply. (E-18)	DO.
EA-3041	Renew flame arresting gauges. (E-18)	Delete. S&D.
EA-3042	Overhaul and pressure test following system valves. (E-18)	DO. Material yard supply.
	Description	Qty.
	High pressure ball valve 1/2" BSP	03
	Ball valve 50 NB	01
	Ball valve 2" BSP	01
	Ball valve 1/2" BSP	01
	NRV SAE 1"	01
	Ball valve 20 NB (03 pieces)	02
	NRV 25 NB	01
	Ball valve 25 NB	01
	NRV 20 NB	01
	Ball valve 40 NB	01
BLACK AND GREY WATER SYSTEM, LOCATION: AC COMPARTMENT		
EA-3043	Overhaul 02 no. system valves (40 NB Butterfly Valve) and Carry out chemical cleaning and pressure testing of 05 mtrs system pipes at 05 bar pressure. (E-15)	DO. Spares and material yard supply.
EA-3044	Examine filling and vent pipes for defects. (E-15)	Delete. SS
EA-3045	Check function of relief valves. (E-15)	DO. Material yard supply.
EMERGENCY FIRE PUMP, MAKE - AZUE & LOMBARDINI, TYPE - M036/20, QTY-01, LOCATION: MER		
EA-3046	Carry out overhauling of emergency fire pump & pump to be proved. (E-19)	DO. Spares and material yard supply.
SIX YEARLY ROUTINE OF RO PLANT, MAKE- M/S ROCHEM TYPE- RO2000DT 0125 PVC - 01 NO, PAC FRIM: M/S ROCHEM SEPRATION SYSTEMS, MUMBAI LOCATION: MER		
EA-3047	The following jobs to be undertaken on RO plant. (E-21) (a) Replace Mechanical Seals Of PK 30 Pump. (B) Calibrate Torque Wrench.	Do through PAC firm. Spares CG supply. Material yard supply.

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	<p>(C) Calibrate Hand Conductivity Meter. (D) Inspect PS 51, PS 71, PS 81 Pressure Switches. (E) Check And Replace PT 60 & Potentiometer. (F) Replace All High Pressure Hoses. () overhaul pre filter pump. (G) Replace HP Pump By Service Exchange HP Pump (h) Check and replace conductivity meter and probe.</p>		<p>Calibration certificate to be provided.</p>
<p>AC CONDENSER PUMP MAKE- JP PUMP TYPE- FREE FLOW CENT PUMP – 01, LOCATION:AC COMPARTMENT</p>			
<p>EA-3048</p>	<p>Following jobs to be undertaken on AC Condenser pump & pump to be proved. (E-22) (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the tip clearances. (d) Check the wear and tear of impeller renew if required. (e) Replace wear ring and guide ring.</p>		<p>DO overhauling. Spares CG supply supply. material yard</p>
<p>GREY WATER PUMP,MAKE- AZUE, TYPE- CA 32/0.5 NO-01, LOCATION:MER</p>			
<p>EA-3049</p>	<p>Following jobs to be undertaken on Grey water pump & pump to be proved. (E-23) (a) Dismantle the pump (b) Replace bearings. (c) Replace the mechanical seals. (d) Check the trip clearances. (e) Check the wear and tear on impeller renew if required. (f) Replace wear ring and guide ring.</p>		<p>DO overhauling. Spares CG supply supply. material yard</p>
<p>FRESH WATER PUMP,MAKE- AZUE, TYPE- M036/20, 01, LOCATION:AC COMPARTMENT</p>			
<p>EA-3050</p>	<p>Following jobs to be undertaken on Fresh Water pump & pump to be proved. (E-24) (a) Dismantle the pump (b) Replace bearings. (c) Replace the mechanical seals. (d) Check the trip clearances. (e) Check the wear and tear on impeller renew if required. (f) Replace wear ring and guide ring.</p>		<p>DO overhauling. Spares CG supply supply. material yard</p>
<p>ROUTINE OF WATER SCOOTER , MAKE- YAMAHA, TYPE- VX700, NO-01, LOCATION:QUARTER DECK</p>			
<p>EA-3051</p>	<p>Following jobs to be undertaken on water scooter. Spare CG supply (E-25) (a) Check, clean & adjust spark plug. (b) Lubricate the lubricant points</p>		<p>Delete. Defect if any to be discuss during RFIC.</p>

attest

	<ul style="list-style-type: none"> (c) Check fuel system (d) Replace fuel filter (e) Check and clean fuel tank (f) Check, clean oil injection system (g) Check adjust carburetor (h) Check adjust trolling speed (j) Check carburetor throttle shaft (k) Flush cooling water passages (l) Check, clean water inlet strainer (m) Clean bilge strainer (n) Check impeller (p) Check adjust jet trust nozzle angle (q) Check adjust throttle cable (r) Check adjust choke cable (s) Check, replace stern drain plugs (t) Check charger battery (u) Check rubber coupling (v) Check engine mount 	
FUEL OIL TRANSFER PUMP, MAKE-AZCUE, TYPE-CA 32/0.5, NO-02, LOCATION:MER		
EA-3052	<p>Following jobs to be undertaken on Fuel oil transfer pump & pump to be proved. (E-26)</p> <ul style="list-style-type: none"> (a) Replace bearings. (b) Replace the mechanical seals. (c) Check the trip clearances. (d) Check the wear and tear on impeller renew if required. (e) Replace wear ring and guide ring. (f) Replace gauges. 	DO overhauling. Spares CG supply material yard
MACERATOR PUMP, MAKE-MOYNO, USA MODEL - 42202 391 01 NO., LOCATION:AC COMPARTMENT		
EA-3053	<p>Overhaul and examine mechanical seal on the macerator, two cutter rings, the impeller & the pumping element. Replace all components when show sign of wear and damage. (E-27)</p>	DO overhauling. Spares CG supply material yard

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EXHAUST SYSTEM, MAKE- THORNY CROFT, QTY -02, LOCATION:MER	
EA-3054	Overhaul butterfly valves. In ways jobs includes renewal of promatec/ ceramic gasket in the exhaust system and DP test of bulkhead flange joint on port and starboard side. (Size- 250 NB) (E-27)
	DO. Spares & Material yard supply.
YEARLY ROUTINE OF OBM, MAKE- MERCURY MARINER, 25 HP 2 STROKE, QTY-02 (R/HRS AS ON 30 JUL 18 - 38.5 HRS), PAC FRIM: M/S ESMARIO EXPORTS, SECUNDRABAD LOCATION:QUARTER DECK	
EA-3055	Clean and adjust carburetor at idling. (E-28)
EA-3056	Check for salt deposits and battery cable connection. (E-28)
EA-3057	Check corrosion and deformation of anode and trim tab. Replace if necessary. (E-28)
	Delete. To be undertaken through SRMO.
DIVING AIR COMPRESSOR MAKE – GOENKA ENGG GA-3 (3.5) PAC: - M/S GOENKA ENGG. & INDL. PVT, NEW DELHI, LOCATION: PORTABLE	
EA-3058	03 Nos valve to be Changed (Filling, Discharge and purging) (Size-15 MM) (E-30)
EA-3059	Change intake filter element 1 st stage. (E-30)
EA-3060	Check blow-off pressure of final pressure safety valve. (E-30)
EA-3061	Air analysis to be carried out and charging adapter to be renewed. (E-30)
MAGAZINE SPRINKLING SYSTEM, LOCATION:MAGAZINE COMPARTMENT	
EB-3062	03 Nos sprinkling valves not holding. To be overhauled. (Dia : 25 mm)
	DO. Spares and material yard supply.

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ELECTRICAL DEFECT LIST FOR ANNUAL U/W AND YEARLY JET ROUTINE OF C-149

DL SL.	DESCRIPTION	RHQ(NW) REMARKS
UNDER WATER PACKAGE EQUIPMENT: ICCP, MAKE: CUPROBAN , UK, QTY: 01 NOS, PAC FIRM/AIAMC M/S SARGAM METALS, CHENNAI, LOCATION: MAIN ENGINE ROOM		
LA-5001	Inspect Shield Paint and paste around the anodes and reference electrode. If peeled off, the area to be recoated. (L-24)	Discuss during RFIC.
LA-5002	Inspect Anode and Reference Electrode for any mechanical damage and deterioration. Replace zinc anodes reference electrode. (L-24)	
LA-5003	Inspect water seepage in the junction box. (L-24)	
LA-5004	Carryout functional test and calibrate all meters and Backup battery (L-24)	
LA-5005	Carryout insulation checks w.r.t hull.(L-24)	
EM LOG MAKE: M/S JOHN LILLEY & GILLEY, TYPE: WALKER 4040, QTY:01 NO, PAC firm M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H		
LA-5006	Carry out calibration of EM Log and compare the readings with GPS speed. Difference should be within permissible limits. (L-08)	DO through PAC firm M/s Elcome Integrated system.
GYRO COMPASS , MAKE- ANSCHUTZ , TYPE- STD 22, QTY -01 M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H		
LA-5007	Open Master compass and dismantle the gyro sphere and inspect all other assembly for any damage deterioration.(L-04)	DO LA-5007 & LA-5008 through PAC firm M/s Elcome Integrated system. Spare CG supply.
LA-5008	Change the supporting liquid and distilled water, replacing filter ring, Teflon washer and gasket. (L-04)	
REPEATER COMPASS, MAKE- ANSCHUTZ, TYPE- STD-22 QTY- 05, M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H, FLY BRIDGE, JET COMPARTMENT,		
LA-5009	Open repeaters, clean it and apply thin coat of appropriate grease to gimbals, gear, and teeth belt. (L-04)	DO through PAC firm M/s Elcome Integrated system.
ECHO SOUNDER, MAKE- KODEN, TYPE- CVS 833, QTY -01, M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI LOCATION: W/H		
LA-5010	Following jobs to be undertaken on Echo sounder. (L-06) (a) Check transducer for water tightness and check transducer cables for insulation. (b) Calibrate equipment & check accuracy.	DO through PAC firm M/s Elcome Integrated system. Spare CG supply.

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MAIN ENGINE CONTROLS, MAKE- MTU DETROIT DIESEL , PAC FIRM- M/S MTU, PUNE/ M/S YMPL, MUMBAI, LOCATION: MAIN ENGINE ROOM, W/H AND BRIDGE TOP		
LA-5011	Carry out functional test and calibrate & prove all sensors and safeties of engines as per service manual. (L-01)	DO LA-5011 & LA-5012 through PAC firm M/s YMPL, Mumbai. Spares CG supply
LA-5012	Check the condition of all electrical connection in LOPS, Bridge & Fly Bridge for loose connection, deterioration of wiring/cables. (L-01)	
RADAR, MAKE-FURUNO, TYPE-FAR2117,FAR 28X7 SERIES PAC FIRM M/S AS MOLOOBHOY PVT LTD, MUMBAI LOCATION: W/H		
LA-5013	Carry out optimum performance checks (L-05) (AIAMC expired on 19 Nov 2017)	DO through PAC firm M/s AS Moloobhoy Pvt Ltd. Spares CG supply.
WIND MEASURING SYSTEM, MAKE- WALKER, TYPE-7070 DATA P249, LOCATION: W/H & BRIDGE, PAC FIRM- M/S ELCOME INTEGRATED		
LA-5014	Following job to be undertaken (L-07) (a) Check the speed sensor bearing (b) Renew the damping fluid for the wind direction sensor	DO. Spares and Material yard supply
MF/HF TX/RX 150/250W CONTROL UNIT CU 5100, MAKE-SAILOR, QTY-01 NO, LOCATION: BRIDGE		
LA-5015	Performance checks to be carried out. (L-10)	Deleted.
VHF TX/RX, MAKE-SAMYUNG, TYPE- STR 6000A, QTY-02 NOS, PAC: M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI, LOCATION: BRIDGE		
LA-5016	Performance checks to be carried out. (L-11)	Deleted.
ALL MODE COMMUNICATION RECEIVER 100 KHZ TO 2600 MHZ, MAKE-YAESU, TYPE-VR 5000 ; LOCATION: BRIDGE		
LA-5017	Performance checks to be carried out. (L-12)	Delete.
GMDSS POWER SUPPLY UNIT/BATTERY CHARGER, MAKE- SAILOR/ALCOM,TYPE 24V DC, QTY-02; LOCATION: BRIDGE		
LA-5018	Performance checks to be carried out. (L-18)	Deleted.
GMDSS ALARM UNIT, MAKE-SAILOR, TYPE-AP 5065, QTY-01; LOCATION: BRIDGE		
LA-5019	Performance checks to be carried out. (L-18)	Deleted.
EPIRB : MAKE – ACR, MODEL – GLOBALFIX PRO RLB -37: FLY DECK, PAC –AS MOLOOBHOY, MUMBAI		
LA-5020	Performance checks to be carried out.(L-17)	Deleted.
GPS NAVIGATOR, MAKE-KODEN ELECTRIC, TYPE-KGP 920, QTY-01, M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI ; LOCATION: FLYDECK		
LA-5021	Carry out functional checks of interface unit, all switches, lights and panel. (L-09)	Deleted.

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NAVAX RECEIVER, MAKE-SAMYUNG TYPE- SAN300, QTY-01 M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI ; LOCATION: BRIDGE	
LA-5022	Carry out optimum performance check (L-16) Deleted.
SART -02 (MAKE-M/s SAMYUNG, MODEL: SAR-09) PAC: M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI. LOCATION: BRIDGE	
LA-5023	Carry out functional test as specified in service manual. SART to be functionally tested using a radar signals as recommended in the COM-SAR guidelines in manual. (L-29) Deleted.
AIS, MAKE-M/S SAMYUNG, TYPE- SI-30, QTY-01 NO; M/S ELCOME INTEGRATED SYSTEM PVT LTD NAVI MUMBAI; LOCATION: BRIDGE	
LA-5024	Carry out optimum performance check. (L-30) Deleted.
ECDIS, MAKE- FURUNO, TYPE- FEA-2107, QTY- 01 PAC FIRM M/S AS MOOLOBHOY PVT. LTD MUMBAI; LOCATION: BRIDGE	
LA-5025	Carry out optimum performance checks. (L-31) (AMC expired on 19 Nov 2017) Do
PA SYSTEM, MAKE- M/S VINGTOR STEENHAMS TYPE- VPA 120, LOCATION: BRIDGE	
LA-5026	Carry out functional checks of all switches and Impedance of all speakers and microphone, thorough output check and prove the system. (L-33) Delete.
FOG HORN, MAKE-ZOLLENER, TYPE- 230 V AC, QTY- 01; LOCATION: BRIDGE TOP	
LA-5027	Following job to be carried out (L-20) (a) Overhaul the equipment completely. (b) Check the components for sign of deterioration. Replace deteriorated wiring. DO. Spares yard supply as per RFIC minutes.
WINDOW WIPING SYSTEM, MAKE- HEPWARTH MARINE, TYPE-50 NM, QTY - 05; LOCATION: BRIDGE TOP	
LA-5028	The following jobs to be undertaken (L-22) (a) Check the condition of rigid blades. (b) Check blade arm and spring for any damage (c) Check spray nozzle are free from blockages (d) Carry out overhauling of 24V DC motors (e) Check the 24V DC solenoid. DO for serials (a),(b) , (c) & (e) only. Spares yard supply as per RFIC minutes.
FIRE & SMOKE DETECTION ALARM PANEL, MAKE- M/s TYCO MARINE SYSTEM, TYPE- T-1008, QTY- 01; LOCATION: BRIDGE	
LA-5029	Carry out Capacity test of batteries and carry out performance check. Job includes checking of circuit panel (L-23) Delete.

DR. P. P. P. P.

DIESEL ALTERNATOR, RATING: 65 KW, MAKE – CATER PILLAR, QTY- 02, PAC FIRM- M/S GMMCO LTD, RAJKOT ; LOCATION :M/E ROOM

LA-5030	Clean winding, re-varnish and change bearing of Alternator (Bearing Make: SKF 6309-2Z/C3, Part No- 04181740, Qty -02 Nos). (L-02)	DO for LA-5030 to LA-5034 through PAC firm M/S GMMCO. Material yard supply as per RFIC minutes. Carry out load trials on ship's load.
LA-5031	Inspect and clean winding and improve insulation.(L-02)	
LA-5032	Overhaul full Generator assembly including AVR, battery starter and space heater. (L-02)	
LA-5033	Check capacity of generator with full load tank test 100%, 75% & 50%. (L-02)	
LA-5034	Following safety trips and alarm sensor to be checked and calibrated. (L-02) (i) Low Lub oil pressure (ii) High water temperature (iii) Over speed trip	
DISTRIBUTION BOARDS, MAKE- MARINE ELECTRICAL, QTY – 08 NOS ; LOCATION : MAIN ALLEWAYS		
LA-5035	Carry out functional test and calibration of all MCB's. (L-35)	Deleted. SS
STARTER PANELS, MAKE- MARINE ELECTRICAL, QTY – 08 NOS; LOCATION : ENGINE ROOM - 05, AC COMPARTMENT-03		
LA-5036	Carry out functional test and calibration of all overload relays.(L-36)	DO. Spares yard supply as per RFIC minutes.
ELECTRIC COOK TOP (GALLEY HOT PLATES), MAKE-SHARADA ENGG, BARODA, QTY-02NOS ; LOCATION : GALLEY		
LA-5037	Check insulation of heating elements. Replace if required (L-25)	DO for serial LA-5037 to LA-5039. Material yard supply as per RFIC minutes.
LA-5038	Check function of range switches. Replace if required. (L-25)	
LA-5039	The following jobs to be undertaken. (L-25) (a) Check control wiring if found cracked, to be replaced. (b) Check wiring of hot plate and their sleeve, if found hard, to be re-placed. (c) Check end connection if defective to be replaced	
MAIN SWITCH BOARD, MAKE- MARINE ELECTRICALS, TYPE-1727-01R5, QTY-01 ; LOCATION: ENGINE ROOM.		
LB-5040	(a) Calibration of following MSB meters to be carried out, if defective to be replace and calibration certificate to be provided: (i) Voltmeter (0-500V), Qty-03 Nos (ii) Ammeter (0-200A), Qty-03 Nos (iii) Kilowatt Meter (0-100KW), Qty -02 Nos (iv) Frequency meter (0-50Hz), Qty -02 Nos (v) Synchro scope CSQ-3, Qty 01 No (vi) Double frequency meter, Qty -01 No	DO calibration of meters only. Yard to provide calibration certificate.

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	<p>(vii) Double volt meter, Qty – 01</p> <p>(b) Following circuit breakers to be overhauled and all safeties to be checked:</p> <p>(i) Shore supply breaker 100 Amps, Qty-01 No</p> <p>(ii) DA breakers 500 VA, Qty-02 Nos</p>																																														
MOTORS ; TOTAL QTY : 20 NOS. ;																																															
LA-5041	<p>Following motor to be overhauled. Job includes checking of insulation, varnishing, renewal of bearing and painting.</p>	DO. Material yard supply as per RFIC minutes. Yard to quote for individual motors																																													
<table border="1"> <thead> <tr> <th>SL</th> <th>DESCRIPTION</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>Supply/Exhaust blower motor (5.5/7.5 KW)</td> <td>02 Nos</td> </tr> <tr> <td>02</td> <td>ATU Blower motor (251 W)</td> <td>01 No</td> </tr> <tr> <td>04</td> <td>Galley & bath room Exhaust blower motor (215/319 KW)</td> <td>02 nos.</td> </tr> <tr> <td>05</td> <td>Anchor windlass motor (04 KW)</td> <td>01 No.</td> </tr> <tr> <td>06</td> <td>Water scooter Davit & Gemini Winch motor (2.6 kw)</td> <td>02 nos.</td> </tr> <tr> <td>07</td> <td>Fresh Water pump motor (0.7 KW)</td> <td>01 no.</td> </tr> <tr> <td>08</td> <td>Grey Water pump motor (0.55 KW)</td> <td>01 no.</td> </tr> <tr> <td>09</td> <td>Sprinkling Water pump motor (1.1 KW)</td> <td>01 no.</td> </tr> <tr> <td>10</td> <td>Fire main pump motor (2 KW)</td> <td>01 no.</td> </tr> <tr> <td>11</td> <td>FO Transfer pump motor (0.55 KW)</td> <td>02 nos.</td> </tr> <tr> <td>12</td> <td>A/C condenser pump motor</td> <td>01 no.</td> </tr> <tr> <td>13</td> <td>AC compartment, Silencer and water jet supply fan (215/319W)</td> <td>03 no.</td> </tr> <tr> <td>14</td> <td>Black water pump motor (1.1 Kw)</td> <td>01 no</td> </tr> <tr> <td>15</td> <td>Salt water pump motor (0.7 Kw)</td> <td>01 no.</td> </tr> </tbody> </table>	SL	DESCRIPTION	QTY	01	Supply/Exhaust blower motor (5.5/7.5 KW)	02 Nos	02	ATU Blower motor (251 W)	01 No	04	Galley & bath room Exhaust blower motor (215/319 KW)	02 nos.	05	Anchor windlass motor (04 KW)	01 No.	06	Water scooter Davit & Gemini Winch motor (2.6 kw)	02 nos.	07	Fresh Water pump motor (0.7 KW)	01 no.	08	Grey Water pump motor (0.55 KW)	01 no.	09	Sprinkling Water pump motor (1.1 KW)	01 no.	10	Fire main pump motor (2 KW)	01 no.	11	FO Transfer pump motor (0.55 KW)	02 nos.	12	A/C condenser pump motor	01 no.	13	AC compartment, Silencer and water jet supply fan (215/319W)	03 no.	14	Black water pump motor (1.1 Kw)	01 no	15	Salt water pump motor (0.7 Kw)	01 no.		
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TANK LEVEL MONITORING SYSTEM, MAKE – ARISTON , NORWAY; LOCATIN : ENGINE ROOM, PAC FIRM - M/S ELCOME INTE-GRATED																																															
LB-5042	Tank level monitoring system to be overhauled and sensors (09 Nos) to be calibrated.	DO through PAC firm. Spares CG supply																																													
SEARCH LIGHT, MAKE- FRANCIS, TYPE – FX-380 RC ; PAC FIRM : M/S EMANDI CORPORATION, VISAKHAPATNAM ; LOCA-TION: BRIDGE TOP.																																															
LA-5043	Carry out optimum performance check (L-19)	DO. Spares supply as per RFIC minutes.																																													

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NAVIGATIONAL LIGHT CONTROL PANEL, MAKE-NORSE LIGHT, QTY-01 NO.; LOCATION : W/H	
LB-5044	Optimum performance checks to be carried out. DO. Spares CG supply.
BATTERY CHARGER MAKE: MARINE ELECTRICALS QTY:04 (240V,1PH,60 HZ/24V,DC 50A-QTY-02 NOS+ 240V,3PH,50HZ/24V,DC 75A,QTY-02 NOS); LOCATION: E/R AND SILENCER COMPARTMENT.	
LB-5045	Overhaul 04 in Nos battery chargers. Job includes calibration of associated voltmeters and ammeters. (i) Voltmeter (0-50V DC), Qty-04 Nos (ii) Ammeter (0-50A), Qty-02 Nos (iii) Ammeter (0-150), Qty-02 Nos (iv) Battery Ammeter (150-0-150A), Qty-02 Nos DO. Spares and material supply as per RFIC minutes. Yard to provide calibration certificate.
TELEPHONE EXCHANGE, MAKE- ALPHACOM, TYPE- STENTOFON, QTY- 01 NO ; LOCATION : BRIDGE	
LA-5046	Functional test of all components to be carried out. (L-34) Deleted.
24 V DISTRIBUTION BOARDS, MAKE: MARINE ELECTRICAL, QTY-02 ; LOCATION : WORK STATION	
LB-5047	Following meters to be calibrated (a) Voltmeter,0-50V DC, Qty-02 Nos (b) Ammeters, 0-150A, Qty-02 Nos Deleted. SS.
BATTERIES (200 AH / 150 AH/100AH); MAKE- EXIDE EXPRESS POWER, TYPE- LEAD ACID, QTY - 16 NOS LOCATION: MER,SILENCER COMPT, FLY BRIDGE	
LA-5048	Carry out capacity test of 16 nos batteries. (L-26) (i) Battery(200 AH), Qty-12 Nos (ii) Battery(150 AH), Qty-02 Nos (iii) Battery(100 AH), Qty-02 Nos Deleted. S&D

of test and