

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

Quoting: 3498/C-156 & C-161

24 Jul 19

**PRE QUALIFICATION FOR ANNUAL UNDER WATER AND ASD ROUTINES OF
ICGS C-156 & C-161: INVITATION OF EXPRESSION OF INTEREST AND
COMMENTS/ QUERIES**

Sir,

1. It is intimated that e-mail containing following defect list serials (Hull, Engineering and Electrical) in respect of annual under water and ASD routines (to be completed in 35 days period) of **ICGS C-156 & C-161** based at Pipavav and Vadinar respectively, are to be undertaken at Gujarat coast of India only by the firms registered with ICG as a refitting yard alongwith serial wise RHQ (NW) remarks has been forwarded todate

24 Jul 19 :-

Sl.	Description	Defect Sl.
C-156		
(a)	Hull	HA 1001 to HA 1062
(b)	Engg	EA 3001 to EA 3029
(c)	Elect	LA 5001 to LA 5031
C-161		
(a)	Hull	HA 1001 to HA 1063
(b)	Engg	EA 3001 to EA 3091
(c)	Elect	LA 5001 to LA 5063

2. Itemwise Technical comments/queries are invited from ICG registered firms/ refit yards 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.

3. **The routines are to be undertaken at Gujarat coast of India only by the firms registered with ICG as a refitting yard.** The routines of C-156 & C-161 are tentatively scheduled to commence in the month of **Sep 2019** for a period of **35 days**. The routines of the ship is to start within 30 days of signing the Rate Contract. However, in case the ship is not available during this period of 30 days, the routines of the ship would deemed to have commenced with effect from the date the ship is subsequently made available for routines by Indian Coast Guard.
4. The conduct of routines 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, systems and ship's Hull, you are requested to contact "**The Station Technical Officer, ICGS Vadinar (Tele: 02833-256560)**" for ICGS C-161 and to "**The Station Technical Officer, ICGS Pipavav (Tele: 02794-221604)**" for ICGS C-156 to ascertain availability of ship in harbour and clearance to visit the ship.
6. It is intimated that a Request for Information Conference (RFIC) will be held at **CGRHQ (NW), Gandhinagar/ICGS Vadinar/ ICGS Pipavav/ onboard ship** 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 respective station/ ship for meeting the station technical Officer/ Commanding Officer 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 finalised during the RFIC.
9. In the event that shipyard/ refit yard do 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 shipyard/ refit yard should be a licensee or have a MoU/ agreement with a Port/ PSU/ private refit yard (ICG registered) in whose dock the ship is going to be docked as part of refit. The proof for both the facilities (workshop and dock) is to be attached alongwith the technical bid so as to ascertain the technical qualification of the yard. The refit including docking of the ship shall be undertaken at one location.

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, irrespective of whether they attend RFIC or not.** As such, if you do not wish to undertake the routines 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.

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 **Coast Guard Region (NW), Gandhinagar with one copy each to CGDHQ-1 Porbandar, CGDHQ-15, Okha, ICGS Vadinar, ICGS Pipavav, ICGS C-161 and ICGS C-156** at the addresses given below by 16 Aug 2019 :-

- (a) The Commander
{for CSO (Tech)}
Coast Guard Region (NW)
Post Box No. 09, Gandhinagar
Gujarat – 382010
Email- tech-nw@indiancoastguard.nic.in
- (b) The Commander
[for (DTO)]
Coast Guard District Headquarters No. 1
(Gujarat) Post Box No 25
Porbandar – 360575
Email- dhq1@indiancoastguard.nic.in
- (c) The Commander
[for (DTO)]
Coast Guard District Headquarters No. 15
Post Box No.16
Okha, Gujarat - 361350
Email-cgs-okh@indiancoastguard.gov.in
- (d) The Commanding Officer
[for STO]
ICGS Vadinar
Vadinar, Dist-Jamnagar, Gujarat-361 010
E-mail- cgs-vdr@indiancoastguard.nic.in

- (e) The Commanding Officer
[for STO]
ICGS Pipavav
Post Box No. 41, Hindorna Chowk
Jafarabad Road, Pipavav, District – Amreli Rajula
Gujarat -365560
Email- cgs-ppv@indiancoastgurd.nic.in
- (f) The Commanding Officer
ICGS C-156
C/o ICGS Pipavav
Post Box No. 41, Hindorna Chowk
Jafarabad Road, Pipavav, District - Amreli Rajula
Gujarat -365560
Email- c156@indiancoastguard.nic.in
- (g) The Commanding Officer
ICGS C-161
C/o ICGS Vadinar
Vadinar, Dist-Jamnagar, Gujarat- 361 010
Email- c161@indiancoastguard.nic.in

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



(Kalpesh R Kadam)
Dy Commandant
RTO (Refit)
for Commander
Coast Guard Region (NW)

Enclosure: Main Defect list of ICGS C-156 & C-161 (Hull, Engg and Electrical) by e-mail.

Copy to :

The Commander
Coast Guard District Headquarters No. 1
Post Box No 25
Porbandar - 360575

The Commander
Coast Guard District Headquarters No. 15
Post Box No.16
Okha, Gujarat - 361350

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

The Commanding Officer
ICGS Pipavav
Post Box No. 41, Hindorna Chowk
Jafarabad Road, Pipavav, District - Amreli Rajula
Gujarat -365560

The Commanding Officer
ICGS C-156
C/o ICGS Pipavav
Post Box No. 41, Hindorna Chowk
Jafarabad Road, Pipavav, District - Amreli Rajula
Gujarat -365560

The Commanding Officer
ICGS C-161
C/o ICGS Vadinar
Vadinar, Dist-Jamnagar, Gujarat-361 010

ICGS C-156
UNDERWATER PACKAGE AND YEARLY ROUTINES OF MACHINERY & EQUIPMENTS: HULL

DL NO	DESCRIPTION OF DEFECT	RHQ(NW) REMARKS
<u>Docking And Under Water Package</u>		
HA-1001	Scrap and clean the marine growth immediately on docking and wash with fresh water. Clean the EM log and Echo Sounder pickup heads. Clean all sea growth and prepare surface for application of paint as per required paint scheme.	Do. Apply touch up FRC paint scheme (Existing paint scheme: Akzonobel). Paint yard supply. Under water area including boot top & tunnel 357 Sqm.
HA-1002	Post cleaning of hull, under water Hull inspection to be carried out in presence of IRS, OEM for ASD, Overseeing team and ship staff.(HULL Maintenance Schedule H-15)	Do. Total UTG points- 250. Repair/ renewal, if any against AWRP on surveyor's recommendation.
HA-1003	UTG to be carried out of critical or suspected area in presence of IRS Surveyor and CGRPT for bilge suction points and all sea chest areas. (Materials 5083 H116 grade Aluminium of appropriate thickness) yard supply.(HULL Maintenance Schedule H-15)	
HA-1004	Carry out complete visual survey of ship side plating, all welded joints and other structures. Repair deteriorated plates.(HULL Maintenance Schedule H-15)	Do. Survey by class surveyor including mast and superstructure. Cater for 100 UTG points. Renewal if any against AWRP. Material yard supply. Ship Side Area 143 Sqr Mtr and Super structure including mast area 113 SQ Mtr.
HA-1005	Renew all sacrificial hull anodes which are consumed 50% or more. All other anodes to be cleaned with wire brush. The securing arrangement of sacrificial anodes those consume less than 50% to be checked. (Spares/materials yard supply). (HULL Maintenance Schedule H-15)	Do. Anodes CG supply. Material yard supply. SS to provide Specification and number of Anodes during RFIC
HA-1006	Renew all ASD anodes which are consumed 50% or more. All other anodes to be cleaned. (Spares/materials CG supply). (HULL Maintenance Schedule H-15)	Do. Anodes CG supply. Material yard supply.
HA-1007	Renew all damaged fastener. (Spares/materials yard supply).(HULL Maintenance Schedule H-15)	Do.

HA-1008	Sea Chest. All sea chest gratings to be removed clean and chip to bare metal and to be refitted after painting as per paint scheme with adequate surface preparation. 04 no's M/E grating anodes to be renewed if consumed more than 50%. (Spares/materials yard supply). (HULL Maintenance Schedule H-15)	DO. Paint and material yard supply as per RFIC minutes. Renewal of anodes covered under HA-1005.																
HA-1009	Under water valves. 06 Nos underwater valves to be overhauled and pressure tested. <table border="1"> <thead> <tr> <th>SI No</th> <th>Type of valves</th> <th>Qty</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Butterfly valve (Dia-120mm)</td> <td>02 Nos</td> <td>ME</td> </tr> <tr> <td>(b)</td> <td>Butterfly valve (Dia-80mm)</td> <td>02 Nos</td> <td>GS Pump</td> </tr> <tr> <td>(c)</td> <td>Butterfly valve (Dia-40)</td> <td>02 Nos</td> <td>DA</td> </tr> </tbody> </table>	SI No	Type of valves	Qty	Remarks	(a)	Butterfly valve (Dia-120mm)	02 Nos	ME	(b)	Butterfly valve (Dia-80mm)	02 Nos	GS Pump	(c)	Butterfly valve (Dia-40)	02 Nos	DA	Do. Material yard supply as per RFIC minutes.
SI No	Type of valves	Qty	Remarks															
(a)	Butterfly valve (Dia-120mm)	02 Nos	ME															
(b)	Butterfly valve (Dia-80mm)	02 Nos	GS Pump															
(c)	Butterfly valve (Dia-40)	02 Nos	DA															
HA-1010	(HULL Maintenance Schedule H-15) The ASD compartment to be cleaned with paint remover, scrapers and repainted as per paint scheme. Inner circumference of 02 Nos ASD transom plates to be painted on completion ASD routine. (i) Intergard 269 Red : 30 L Approx. (ii) Intergard 403 Light Red : 40 L Approx (iii) Intergard 403 Aluminium Grey : 40 L Approx (HULL Maintenance Schedule H-15)	Do. Paint and material yard supply.																
HA-1011	Paint draught marks. (HULL Maintenance Schedule H-15)	Do in conjunction with HA-1001. Paint yard supply																
HA-1012	Dielectric shield to be examined for wear and damage layer of resin/araldite to be re-coat as per specification. (HULL Maintenance Schedule H-15)	Do only inspection. Repair/renewal if any under AWRP.																
HA-1013	Carry out 100 % survey and chalk/hose testing of all W/T doors and hatches.(HULL Maintenance Schedule H-02), water tight door 05 nos. and hatches 04 nos.	Do. Undertake 100 % survey and chalk test on all WT doors and hatches with class surveyor. Repair/renewal if any under AWRP. Material yard supply.																
HA-1014	Dismantle 50 % drain pipe lines, clean chemically and replace gasket.(HULL Maintenance Schedule H-06)	Delete																
HA-1015	Inspect storm valve (Dia-40mm, Qty-03 Nos and renew all scupper lips.(HULL Maintenance Schedule H-06)	Do overhauling and pressure testing. Material yard supply.																
HA-1016	Clean and dry the fresh water tank, visually inspect condition of tank for corrosion. Tank Capacity – 02 Tons.	Do. Survey by class surveyor and touch up paint scheme. Paint CG supply. Material yard supply																

	(HULL Maintenance Schedule H-08)	as per RFIC minutes. Volume of tank 3.0 M ³
HA-1017	Renew manhole gaskets. (HULL maintenance schedule H-08)	Delete
HA-1018	Dry out and inspect compartment structure for failure of paint coating. Remove any loose or flaking paint and all sign of erosion by scraping and wire brushing. Apply paint as per touch up scheme. (HULL Maintenance Schedule H-08)	Delete
HA-1019	Associate the class surveyor during internal inspection and project specific defect for repair. Apply paint as per scheme. Ensure all manhole covers are free of erosion and intact at seating. Pressure test tank if plate renewal/repair carried out. (HULL Maintenance Schedule H-08)	
HA-1020	Clean and survey Anchor, anchor Chain adopter, swivel piece and Anchor polyamide rope and replace polyamide rope with new one, if required. (HULL Maintenance Schedule H-09) (Make- Danforth, Type- 'A' SHHP fully balanced anchor, Qty-01, Wt- 80 KG, 1.3 Mtr chain with adaptor piece connecting Anchor and PP rope of 110 Mtr).	Do. Survey by class surveyor. Renewal of Anchor Rope if any against AWRP as per surveyor recommendation. Cleaning and painting of Anchor and 1.3 Mtrs Chain to be undertaken. Paint yard Supply
HA-1021	Non destructive test of anchor chain & rope be carried out & provide certificate. (HULL Maintenance Schedule H-09)	Delete
HA-1022	Strip and inspect windlass brake mechanism. Examine brake linings, pin and bush for wear and renew as necessary. Drain oil from gear box and refill fresh oil. Cable holder gypsy and drums to be removed. Examine for wear and deteriorations. Windlass to be overhauled. (HULL Maintenance Schedule H-10)	DO overhauling and load testing of Windlass. Yard to provide load test certificate. Spares CG Supply. Material yard supply.
HA-1023	Non destructive test (DP test) of anchor windlass base, bollards, fairleads and stag horn to be carried out. (HULL Maintenance Schedule H-10)	Do.
HA-1024	Remove 50 % drain pipes, chemical clean, pressure test and fit it back.(HULL Maintenance Schedule H-11)	Delete
HA-1025	All tanks (fuel, Lube Oil, Oil Bilge Holding tank and Dirty Oil) to be emptied / cleaned / surveyed. Manholes cover gaskets and securing bolts to be inspected and defective ones to be renewed. (HULL Maintenance Schedule H-12)	Do. Survey by class surveyor. Material including linseed oil yard supply. SS to mention volume of tanks during RFIC

HA-1026	All tanks scrap and re-paint the damaged paint on the inner and outer surface of tank. (HULL Maintenance Schedule H-12)	Delete
HA-1027	Remove the grey water from grey water tank, clean with liquid detergents and scrap the damaged paint, carry out 100% survey by surveyor. Repaint the tanks as per scheme. Manholes cover gaskets and securing bolts to be inspected and defective ones to be renewed. (HULL Maintenance Schedule H-12)	Do. Survey by class surveyor. Undertake touch up paint scheme. Paint CG supply. Material yard supply as per RFIC minutes. SS to mention volume of tank during RFIC
HA-1028	Remove the Black water from the tank, clean with liquid detergents and scrap the damaged paint, carry out 100% survey by surveyor. Repaint the tanks as per scheme. Manholes cover gaskets and securing bolts to be inspected and defective ones to be renewed. (HULL Maintenance Schedule H-12)	Do. Survey by class surveyor. Undertake touch up paint scheme Paint CG supply. Material yard supply as per RFIC minutes. SS to mention volume of tank during RFIC
HA-1029	Dismantle the hydrostatic release unit (HRU). Examine, overhaul and test release gear. (HULL Maintenance Schedule H-17)	Delete
HA-1030	Inspect stanchions remove clean and chip rust. Renew defective pieces apply grease and refit. (HULL maintenance schedule H-05)	Delete. SS
HB-1031	Load test of all guardrails (upper berth lower berth and guardrail) for weather deck and fly deck to be carried out. And 01 set of new guardrail may be supply for emergency.	Delete
HB-1032	Floor Vinyl sheet of rating mess dining hall captain cabin, SO's cabin and bridge to be change.	Delete
HB-1033	Captain cabin, and bridge Floor area weakened. To be increase strengthen of wooden supports.	Delete
HB-1034	Ships Mast, Superstructure, main deck and both ship's side checked for pilling corrosion and damage paint, scrap and repaint as per paint scheme.	DO. Touch up paint scheme for Ship Side and main deck only and one final coat for super structure & Mast. Paint CG Supply.
HB-1035	"शरतीयतदरक्षक" lettering in Hindi on Starboard side and "INDIAN COAST GUARD" in English on Port Side to be inscribed including ship's band and pennant number.	DO. Blue band, pennant number at transom and Indian Coast Guard in English (Port side) "शरतीय तदरक्षक" in Hindi (Stbd side) to be painted as per CGBR 382 Paint CG supply

HB-1036	Sailors and captain bathroom commode, washing pipe, seating sheets, water closing valve, wash-handbasin, taps, hand shower flexible hoses, soap case with mirror, washbasin drainpipes , pipe securing clamps renewed as per sample.	Delete. Discuss during RFIC
GENERAL /YARD SERVICES		
HA-1037	Fire main supply of 04 bar pressure at the rate 40 TPH to be supplied to ship invariably for full duration of refit. Refitting yard is to provide 01 in No. fire sentry each, wherever hot work is in progress. SS is also to provide their own fire sentry as required. If yard do not have facility for round the clock fire main pressure, yard to make arrangement for fire tender to be stand-by all the times.	DO.
HA-1038	Garbage clearances and disposal facility to be provided for the entire duration of refit.	DO.
HA-1039	Shore supply power connection (415V,50 Hz, 3 Phase, 4 wire, 50 Amps shore supply with neutral) for consumption power up to 30 units per day and connecting / disconnecting cable as and when required with feeder breaker capacity of not less than 150KW. Payment will be made on pro rata basis as per actual power consumption. Ships staff to maintain a logbook for actual power consumption. Yard to provide KWH meter for measurement of electricity units.	DO. Payment will be made at actual on pro rata basis.
HA-1040	Crane facility is to be provided as and when required. Yard to cater for 25 hours operation during the entire refit period. However, payment will be made at actuals. Ship staff to maintain a record/logbook on this aspect.	DO.
HA-1041	Supply of fresh water to be catered for 01 tons per day including 100 ltrs drinking water per day. However, payment will be made at actuals and SS to keep record of water received during refit.	DO. Payment will be made at actual on pro rata basis.
HA-1042	All OEM/PAC and refitting firms 'Hull', 'Engineering' and 'Electrical' reps are to embark ship for pre and post refit trials sailing till satisfactory performance/ acceptance of the machinery by the ship.	DO. Yard to undertake pre and post refit trails as per sl (a) para 14 of RFIC minutes.
HA-1043	Preparation of keel blocks and certificate of suitability is to be issued by the refitting firm. Keel blocks are to be offered to overseeing authority for inspection, prior docking of the ship.	DO.

HA-1044	Keel blocks are to be arranged as per latest approved docking plan, and ship is to be dry-docked in both versions.	DO both version docking. SS to provide latest docking plan.
HA-1045	Tug for docking, undocking, berthing and un-berthing are to be provided as and when required from pre-routine trials till completion of routines.	DO.
HA-1046	Pilot is to be provided while entering and leaving dock and harbour.	DO.
HA-1047	Shipyard is to provide 02 nos mobile phones with unlimited calling in India and one unlimited data connection for voice communication and E-mail respectively during entire refit duration. Yard's office fax facility will be used for fax in/ out by the ship.	DO.
HA-1048	Refitting yard to extend fax/ e-mail facility to COA/ Refit Overseeing Team as and when required basis.	DO.
HA-1049	The refitting yard is to provide one staff car for CGRPS and one MUV/08 Seater for ship's company for refit duration for 100 Km/day or 12 hrs/day whichever is exhausted earlier (The transport usage commences and terminates at the gangway).	DO.
HA-1050	Provide temporary lights to ensure illumination at appropriate level.	DO.
HA-1051	Compressed air supply as and when required.	DO.
HA-1052	A/C system is to be kept operational for maximum duration of the refit and alternate seawater cooling lines are to be provided whenever feasible to keep system operational.	DO.
HA-1053	Proper alongside berthing facility (not alongside pantoon/floating dock, etc.) and yard services for ship are to be provided for the entire period of refit. The refitting firm is to ensure that there is no unnecessary shifting of ship during the ship's refit. In event of berthing and yard services provided by ICG, the cost of the same would be deducted at actuals.	DO. Berthing and unberthing at wet basin including basin hire charges are to be catered for. In event of berthing and yard services provided by ICG, the cost of the same would be deducted at actuals.
HA-1054	Appropriate refit office for overseeing team with necessary furniture and A/c.	DO. Refit office to include WC facility for EPs and Officers.

HA-1055	Adequate storage space to be provided to IBs during major hull repair work. Approx store room size 15 X 15 ft.	DO.
HA-1056	Shore galley facilities including gas burners and cost of cooking gas to be provided when the ship's galley becomes non-operational. 01 in no. refrigerator is also to be provided during period ship's galley becomes non-operational at no extra cost.	DO.
HA-1057	The refitting firm to arrange Gas free Certificate for all Fuel/ Lube oil tanks prior commencing hot work. For this purpose provision of blowers with hoses and visit of Inspector of Explosive are to be catered for.	DO. The refitting firm to arrange Gas Free Certificate for all Fuel/ Lube oil tanks prior commencing survey/ hot work. For this purpose provision of blowers with hoses and visit of Inspector of Explosives are to be catered for.
HA-1058	The ship is to carry out de-fueling prior coming in dry-dock. The refitting firm is to provide suitable containers/space for storing residual fuel. The Ship to collect fuel prior departing from the yard.	DO.
HA-1059	Sufficient ventilation to be provided when ship's AC becomes non-ops.	DO. Sufficient ventilation to be provided when ship's AC becomes non-ops.
HA-1060	Yard to provide facilities for DP testing/load testing of Capstan/ towing hook/ Davits etc.	DO.
HA-1061	Yard to provide staging /scaffolding for jobs on ship's sides / water-jets in the dry dock / slipway.	DO.
HA-1062	Accommodation: The refitting firm is to provide accommodation to the Ship's crew when ship becomes uninhabitable. Accommodation is to be provided for following crew as per the scale of accommodation indicated below:- (i) <u>Officers.</u> Cabin accommodation for 01 officer with following amenities:- (aa) One single occupancy room with A/C (ab) Attached toilet with bathroom. (ac) Basic room curtain and TV. (ad) Table and chairs. (ae) Basic linen viz. mattress, bed sheets, pillow,	DO. Yard to provide accommodation as per para 8 of RFIC minutes. Shore galley facilities with appropriate exhaust system including gas burners and cost of cooking gas to be provided when the ship's galley becomes non-operational.

	<p>pillow covers, blanket to be provided.</p> <p>(ii) <u>Subordinate Officer.</u> Cabin accommodation for 04 SOS with following facilities:</p> <p>(aa) Two double bedrooms with A/C.</p> <p>(ab) Attached toilet & bathroom.</p> <p>(ac) Basic room curtain and TV.</p> <p>(ad) Table and chairs.</p> <p>(ae) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blankets to be provided.</p> <p>(af) Common dining space with TV.</p> <p>(iii) <u>Enrolled Personnel.</u> Dormitory type accommodation with curtains for 09 Enrolled Personnel to be provided. The scale of accommodation is as follows: -</p> <p>(aa) 09 in nos. single bed/cots. Rooms to have Air cooler circulator.</p> <p>(ab) Each single bed/cot to be provided with mattress, bed sheet, pillow cover.</p> <p>(ac) Five W/C and Five bathrooms.</p> <p>(ad) Dormitory room to have basic upholstery like teapoy, TV, curtains and easy chairs and wardrobe for keeping uniforms and day to days items.</p> <p>(ae) Dining space and Cooking area.</p> <p>(af) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blankets to be provided.</p>	
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ICGS C-156
UNDERWATER PACKAGE AND YEARLY ROUTINES OF MACHINERY & EQUIPMENTS: ENGINEERING

DL NO	DESCRIPTION OF DEFECT	RHQ(NW) REMARKS
EA 3001	<p>ASD SYSTEM, MAKE-TWIN DISC, TYPE-ASD16A1S, QTY-02 NOS (PAC Firm: Aries Tech Sales & service Pvt. Ltd., Engineering Maintenance Schedule E-03)</p> <p>Yearly routines of both ASD system to be carried out: (a) ASD16 Propeller Nut torque check to be carried out in accordance with Page no. 81 Table 3 of OEM Service manual. (b) Socket, trim cylinder, steering cylinder check transom fasteners (c) Hydraulic system --Operate system from bridge and steering room in both FFU and NFU mode rectify defect if any (d) Hydraulic and drive system oil- check for leakage and change drive oil (e) Thrust ball retaining ring bolts torque to 60 NM (40Ft-lbs). (f) Clean and inspect propeller shaft seal (g) Check solenoid valves (h) Cathodic protection to be checked. If zinc anodes are consumed more than 50% then same is to be renewed</p>	<p>Do through PAC firm M/s Aries tech, Mumbai. Spares/anodes CG supply. Material yard supply.</p>
EA 3002	<p>GEAR BOX, MAKE- TWIN DISC, TYPE- MGx6690SC, QTY - 02 NOS. (PAC Firm: Aries Tech Sales &service Pvt. Ltd., Mumbai, Engineering Maintenance Schedule E-02)</p> <p>Yearly /1000 hly routines of both Gear boxes to be carried out. Jobs as given below: (a) Retighten all bolts from out side (b) Check shaft position adjustment</p>	<p>Do through PAC firm M/s Aries Tech Sales & Services Pvt Ltd., Mumbai</p>
EA 3003	<p>AC PLANT, MAKE- M/S HEINEN & HOPMAN Pvt Ltd, TYPE-6DA 537, CAPACITY-12 TR, QTY-02 NOS (Engineering Maintenance Schedule E-05)(PAC Firm:- M/s Heinen & Hopman Pvt Ltd, Kolkata)</p>	

EA 3003	Yearly routines of AC plant to be carried out. Jobs as given below: (a) Inspect and chemical Clean condenser tubes as required. (b) Inspect and sheets and gaskets of condenser. (c) Check the operation of two way solenoid valve. (d) Check the operation of expansion valve. (e) Replace compressor oil. (f) Top overhauling of compressor to be carried out. (g) Vacuum and pressure test for 24 hrs each.	Do through PAC firm M/s Heinen & Hopman Engineering India Pvt Ltd, Kolkata. Spares CG supply. Nitrogen and Material yard supply.
AHU , MAKE- M/S HEINEN & HOPMAN PVT LTD, TYPE-ETU-020H QTY-01 NOS (Engineering Maintenance Schedule E-05) (PAC Firm:- M/s Heinen & Hopman Pvt Ltd, Kolkata)		
EA 3004	(a) Check whether the connections are intact and vibration dampers not harmed. (b) Check for corrosion and leakage of cooling coil (c) Carry out chemical cleaning of cooling coils. (d) Blow through the cooling coil with air stream from counter flow direction. (e) Carry out static and dynamic balancing of AHU fan.	Do. Material yard supply.
FM 200 FIRE FIGHTING SYSTEMS, MAKE- ZEAL MARKETING PVT. LTD, TYPE-FM 200 (Engineering Maintenance Schedule E-06) (PAC Firm:- M/s Zeal Marketing Pvt. Ltd. Mumbai)		
EA 3005	Yearly routines of FM-200 to be carried out. Jobs as given below: (a) Remove nozzle from piping to allow any foreign material to blow clear. (b) Remove all pressure operated control from FM-200 cylinder. (c) Open distributing valve and keep open long enough cleanliness of pipe. (d) Reconnect all control heads. (e) Overhaul the control system, monitoring system, and fire detection system. (f) Clean the pipe line system and carry out pressure testing of the system. (g) Weigh the cylinder and recharge, if weight loss is more than 10%. (h) Clean discharge nozzle.	DO through authorised firm. material yard supply. Recharge of gas if any against AWRF, if weight loss of gas is more than 10 percent.
AC CONDENSER PUMP, MAKE-SPX FLOW TECHNOLOGY, TYPE- KGE FC 12B-5, QTY-01 NO. (Engineering Maintenance Schedule E-21) (PAC Firm:- M/s SPX Flow Tech Pvt. Ltd. Ahmadabad)		

EA 3006	<p>Yearly routines of AC condenser pump to be carried out and proved for satisfactory operation. Jobs as given below:</p> <ul style="list-style-type: none"> (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. (f) Change wear ring and guide ring. 	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
<p>GREY WATER PUMP, MAKE-TECNICOMAR, TYPE-BCM20, QTY- 01 NO. (Engineering Maintenance Schedule E-22) (PAC Firm:- M/s SPX Flow Tech Pvt. Ltd. Ahmadabad)</p>		
EA 3007	<p>Yearly routines of Grey water pump to be carried out and proved for satisfactory operation. Jobs as given below:</p> <ul style="list-style-type: none"> (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. (f) Change wear ring and guide ring. 	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
<p>DOMESTIC FRESH WATER PUMP, MAKE-M/S SPX FLOW TECHNOLOGY PVT LTD, TYPE- KGEFC 16-3, QTY-02 NOS. (Engineering Maintenance Schedule E-23) (PAC Firm:- M/s SPX Flow Tech Pvt. Ltd. Ahmadabad)</p>		
EA 3008	<p>Yearly routines of both fresh water pump to be carried out and proved for satisfactory operation. Jobs as given below:</p> <ul style="list-style-type: none"> (a) Dismantle the pump. (b) Replace the bearings. (c) Replace the mechanical seal. (d) Check the tip clearance. (e) Check the wear and tear on impeller. (f) Change wear ring and guide ring. 	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
<p>GS PUMP, MAKE-M/S SPX FLOW TECHNOLOGY PVT LTD, TYPE- KGEFC 16-6, QTY-02 NOS. (Engineering Maintenance Schedule E-09) (PAC Firm:- M/s SPX Flow Tech Pvt. Ltd. Ahmadabad)</p>		

EA 3009	Yearly routines of GS pump to be carried out and proved for satisfactory operation. Jobs as given below: (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. (f) Change wear ring and guide ring.	Do overhauling of pump. Spares CG supply and material yard supply as per RFIC Minutes
FUEL OIL TRANSFER PUMP, MAKE-SPX FLOW TECHNOLOGY, MODEL-TG1047, QTY-02 (Engineering Maintenance Schedule E-24) (PAC Firm:- M/s SPX Flow Tech Pvt. Ltd. Ahmedabad)		
EA 3010	Yearly routines of fuel oil transfer pump to be carried out and proved for satisfactory operation. Jobs as given below: (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.	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
STP PLANT, MAKE-TECHNICOMA R.S.P.A., TYPE-ECOMAR, QTY- 01 NO (Engineering Maintenance Schedule E-27) (PAC Firm: KNH Pvt. Ltd., Chennai)		
EA 3011	Yearly routines of STP plant to be carried out and proved for satisfactory operation. Jobs as given below: (a) Manually start all pump and stop immediately in case of no rotation of the impeller. (b) Remove the back cover and rotate the axis manually. (c) Replace the disinfecting liquid. (d) On the control panel set the operation mode to manual. (e) Check the rotation sense of each pump.	Do through authorised firm. Spares CG supply. Material yard supply
EMERGENCY DIESEL DRIVEN FIRE PUMP, MAKE- SPX FLOW TECHNOLOGY, TYPE- KGEC 16-6, QTY-01 NO (Engineering Maintenance Schedule E-19) (PAC Firm:- M/s SPX Flow Tech Pvt. Ltd. Ahmedabad)		
EA 3012	Carry out overhauling of emergency fire pump and proved for satisfactory operation	Do.

FUEL OIL SYSTEM, MAKE-BHARATI SHIPYARD LTD., QTY- 01 NOS (Engineering Maintenance Schedule E-10)																															
EA 3013	<p>Yearly routines of fuel oil system to be carried out. Jobs as given below:</p> <table border="1"> <thead> <tr> <th>SI No</th> <th>Type of valves</th> <th>Qty (Nos)</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Ball valve DN 25</td> <td>04</td> </tr> <tr> <td>(b)</td> <td>Ball valve DN 10</td> <td>12</td> </tr> <tr> <td>(c)</td> <td>Ball valve DN 40</td> <td>9</td> </tr> <tr> <td>(d)</td> <td>Quick closing valve DN 40</td> <td>01</td> </tr> <tr> <td>(e)</td> <td>Globe check valve DN 40</td> <td>02</td> </tr> <tr> <td>(f)</td> <td>Globe check valve DN 25</td> <td>03</td> </tr> <tr> <td>(g)</td> <td>Ball valve DN 32</td> <td>01</td> </tr> <tr> <td>(h)</td> <td>Ball valve DN 15</td> <td>02</td> </tr> <tr> <td>(i)</td> <td>Ball valve DN 20</td> <td>02</td> </tr> </tbody> </table>	SI No	Type of valves	Qty (Nos)	(a)	Ball valve DN 25	04	(b)	Ball valve DN 10	12	(c)	Ball valve DN 40	9	(d)	Quick closing valve DN 40	01	(e)	Globe check valve DN 40	02	(f)	Globe check valve DN 25	03	(g)	Ball valve DN 32	01	(h)	Ball valve DN 15	02	(i)	Ball valve DN 20	02
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(g)	Ball valve DN 32	01																													
(h)	Ball valve DN 15	02																													
(i)	Ball valve DN 20	02																													
EA3014	Carry out chemical cleaning and pressure testing of pipes. (Pipe length-40 Mtrs, Dia-40mm, Mat-SS)																														
HYDRAULIC OIL SYSTEM, MAKE- M/S TWIN DISC, QTY -01 NO (Engineering Maintenance Schedule E-11)																															
EA 3015	<p>Yearly routines of Hydraulic oil system to be carried out. Jobs as given below:</p> <p>(a) Overhaul and pressure test of system valves.</p> <table border="1"> <thead> <tr> <th>SI No</th> <th>Type of valves</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Butterfly Valve DN 50</td> <td>04 Nos</td> </tr> </tbody> </table>	SI No	Type of valves	Qty	(a)	Butterfly Valve DN 50	04 Nos																								
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EA 3016	<p>(a) Examine tank sounding and vent pipes for defects.</p> <p>(b) chemical cleaning and pressure testing of system pipes and valves to be undertaken</p>																														
MAGAZINE SPRINKLING SYSTEM, MAKE- BHARATI SHIPYARD LTD (Engineering Maintenance Schedule E-20)																															
EA 3017	<p>Yearly routines of magazine sprinkling system to be carried out. Jobs as given below:</p> <p>(a) Dismantle the valves, overhauling and pressure test to be carried out (Ball valve DN 25, Qty-02 Nos)</p> <p>(b) Replace Bulb element.</p>																														
	Do 25% only. Material yard supply as per RFIC minutes																														
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	Delete.																														
	Do. aterial yard supply.																														

SEA WATER COOLING SYSTEM, MAKE- BHARATI SHIPYARD LTD (Engineering Maintenance Schedule E-12)

EA 3018

Yearly routines of sea water cooling system to be carried out. Jobs as given below:

(a) Overhaul and pressure test of system valves.

SI No	Type of valves	Qty
(a)	Butterfly valve DN 50	02 Nos
(b)	Check valve DN 125	02 Nos
(c)	Butterfly valve DN 65	01 No
(d)	SDNR Valve DN 80	02 Nos
(e)	Butterfly Valve DN 100	02 Nos
(f)	SDNR Valve DN 100	02 Nos
(g)	Check Valve DN 65	01 No
(h)	SDNR Valve DN 65	01 No
(j)	Butterfly Valve DN 50	02 Nos
(k)	SDNR Valve DN 50	02 Nos
(m)	SDNR Valve DN 25	02 Nos
(n)	Globe valve DN 40	02 Nos

Do 25% only. Material yard supply as per RFIC

EA 3019

Carry out chemical cleaning and pressure testing of pipes.

SI No	Description of pipe	Length
(a)	Dia -120 Mat- SS	08 mtrs
(b)	Dia -80mm,Mat-SS	08 mtrs
(c)	Dia -40mm,Mat-SS	06 mtrs

Do 25% only. Material yard supply as per RFIC

BILGE SYSTEM, MAKE- BHARATI SHIPYARD LTD (Engineering Maintenance Schedule E-13)

EA 3020

Yearly routines of Bilge system to be carried out. Jobs as given below:Overhaul and pressure test all bilge system valves.

SI No	Type of valve	Qty
(a)	Check valve DN 50	07 Nos
(b)	Butterfly valve DN 50	07 Nos
(c)	Globe valve(odd) DN 65	01 No
(d)	Check valve DN 65	01 No
(e)	Butterfly valve DN 65	04 Nos
(f)	Globe valve QSD	01 No
(g)	SDNR valve DN 65	02 Nos

Do 25% only. Material yard supply as per RFIC minutes

EA 3021	Carry out chemical cleaning and pressure testing of system pipes(Pipe length-20 mtrs, Dia-40mm, Mat-SS)	Do 25% only. Material yard supply as per RFIC minutes															
FIRE MAIN SYSTEM, MAKE- BHARATI SHIPYARD LTD (Engineering Maintenance Schedule E-14)																	
EA 3022	Yearly routines of Fire main system to be carried out. Jobs as given below: Overhaul and pressure test system valves .	Do 25% only. Material yard supply as per RFIC minutes															
	<table border="1"> <thead> <tr> <th>SI No</th> <th>Type of valve</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Check valve DN 65</td> <td>01 No</td> </tr> <tr> <td>(b)</td> <td>Butterfly valve DN65</td> <td>02 Nos</td> </tr> <tr> <td>(c)</td> <td>Fire hydrant Valve DN 50</td> <td>04 Nos</td> </tr> <tr> <td>(d)</td> <td>Isolating valve (globe) 1NB</td> <td>01 No</td> </tr> </tbody> </table>	SI No	Type of valve	Qty	(a)	Check valve DN 65	01 No	(b)	Butterfly valve DN65	02 Nos	(c)	Fire hydrant Valve DN 50	04 Nos	(d)	Isolating valve (globe) 1NB	01 No	
SI No	Type of valve	Qty															
(a)	Check valve DN 65	01 No															
(b)	Butterfly valve DN65	02 Nos															
(c)	Fire hydrant Valve DN 50	04 Nos															
(d)	Isolating valve (globe) 1NB	01 No															
EA 3023	Carry out chemical cleaning and pressure testing of system pipes(Pipe length-50 mtrs, Dia-40mm, Mat-SS)	Do 25% only. Material yard supply as per RFIC minutes															
BLACK AND GRAY WATER SYSTEM, MAKE- BHARATI SHIPYARD LTD (Engineering Maintenance Schedule E-15)																	
EA 3024	Yearly routines of black and gray water system to be carried out. Jobs as given below: Overhaul and pressure test system valves.	Do 25% only. Material yard supply as per RFIC minutes															
	<table border="1"> <thead> <tr> <th>SI No</th> <th>Type of valve</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Ball valve DN 40</td> <td>04 Nos</td> </tr> </tbody> </table>	SI No	Type of valve	Qty	(a)	Ball valve DN 40	04 Nos										
SI No	Type of valve	Qty															
(a)	Ball valve DN 40	04 Nos															
EA 3025	Carry out chemical cleaning and pressure testing of system pipes. (Pipe length-10 mtrs, Dia-40mm, Mat-PVC)	Do. Material yard supply as per RFIC minutes..															
WASTE AND LUB OIL SYSTEM, MAKE- BHARATI SHIPYARD LTD (Engineering Maintenance Schedule E-18)																	
EA 3026	Yearly routines of waste and lube oil water system to be carried out. Jobs as given below: Overhaul valves. The details of valves are as follows:-	Do 25% only. Material yard supply as per RFIC minutes															
	<table border="1"> <thead> <tr> <th>SI No</th> <th>Type of valves</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Ball valve DN 40</td> <td>04 Nos</td> </tr> </tbody> </table>	SI No	Type of valves	Qty	(a)	Ball valve DN 40	04 Nos										
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(a)	Ball valve DN 40	04 Nos															

EA 3027	<p>(a) Carry out chemical cleaning and pressure testing of pipe line.(Pipe length-04 mtrs, Dia-40mm, Mat-SS) (b) Carry out pressure testing of flexible hoses. (c) Overhaul semi rotary hand pump.</p>	<p>Do SI (a). Material yard supply as per RFIC minutes. Delete SI. (b) & (c)</p>															
FRESH WATER SYSTEM, MAKE- BHARATI SHIPYARD LTD (Engineering Maintenance Schedule E-16)																	
EA 3028	<p>(a) Carry out chemical cleaning and pressure testing of system (b) Carry out overhauling and pressure testing of system valves (c) Check function of relief valves (d) Examine vent pipes for defects (e) Calibrate pressure switch and pressure gauge</p> <p>Details of valves:</p> <table border="1" data-bbox="751 264 954 1176"> <thead> <tr> <th>SI No</th> <th>Type of valves</th> <th>Qty (Nos)</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Check valve 1"</td> <td>04</td> </tr> <tr> <td>(b)</td> <td>Ball valve 1"</td> <td>04</td> </tr> <tr> <td>(c)</td> <td>Ball valve 1/2"</td> <td>04</td> </tr> <tr> <td>(d)</td> <td>Taps for bathroom</td> <td>13</td> </tr> </tbody> </table>	SI No	Type of valves	Qty (Nos)	(a)	Check valve 1"	04	(b)	Ball valve 1"	04	(c)	Ball valve 1/2"	04	(d)	Taps for bathroom	13	<p>Do sl (b) 25% valves only. Material yard supply. Yard to provide calibration certificate. Delete SI. (a) & (d)</p>
SI No	Type of valves	Qty (Nos)															
(a)	Check valve 1"	04															
(b)	Ball valve 1"	04															
(c)	Ball valve 1/2"	04															
(d)	Taps for bathroom	13															
AIR COMPRESSOR, MAKE- PNEUMECH COMPRESSOR CO., TYPE- PM-205 (2 HP) (Engineering Maintenance Schedule E-28)																	
EA 3029	<p>Yearly routines of air compressor to be carried out. Jobs as given below: (a) Overhaul the compressor.</p>	<p>Do through authorised firm. Spares CG supply. Material yard supply as per RFIC minutes. Compressor to be proved for satisfactory performance.</p>															

ICGS C-156
UNDERWATER PACKAGE AND YEARLY ROUTINES OF MACHINERY & EQUIPMENTS: ELECTRICAL

DL NO	DESCRIPTION OF DEFECT	RHQ(NW) REMARKS
MAIN ENGINE CONTROLS, MAKE- M/s MTU ASIA PTE LTD SINGAPOR , TYPE-MCS 5 ,QTY-02 (Electrical Maintenance Schedule L-01) (PAC Firm:- M/s MTU, Pune/ Yeoman Marine Pvt. Ltd. Mumbai)	Carry out functional test and calibrate & prove all sensors and safeties of engines. Check the condition to all electrical connection in LOP, Bridge & Fly Bridge for loose connection, deterioration of wiring / cables and replace if required.	DO through M/s MTU/ M/s YMPL, SS to specify qty of sensors. Spares CG supply.
DIESEL GENERATOR, MAKE- CATERPILLAR ,TYPE-C4.4 DITA 69KW, 415V, 3 PHASE, QTY-02 NOS, (Electrical Maintenance Schedule L-02) (PAC Firm:- M/s Gmmco Ltd., Rajkot)	(a) Inspect and clean winding. If insulation is found low, cleaning, varnishing and baking of winding to be carried out. (b) Overhaul full generator including AVR, battery starter and space heater. (c) Check the capacity of generator with ship's load on 100%, 75% & 50%. (d) Calibrate AVR of both DAs. (e) Following safety trips and alarm sensor to be checked and calibrated:(i) Low lube oil pressure (ii) High water temp (iii) Over speed trips (f) Following gauges to be checked and calibrated:- (i) Lube oil pressure gauge (ii) Fresh water temp gauge (iii) RPM gauge	DO. Spares CG supply. Material yard supply. Load trials on ship's load including paralleling operation. Yard to provide calibration certificate for sensors and gauges. SS to witness insitu trials of work at SI(e)
ULTRASONIK WIND SENSER, MAKE- FURUNO, TYPE- WS200, QTY-01 (Electrical Maintenance Schedule L-07) (PAC Firm:- M/s A.S. Moloobhoy Pvt. Ltd. Mumbai)	Carry out cleaning and calibration of ultrasonic wind sensor.	Discuss during RFC.

MAIN SWITCH BOARD, MAKE- M/S MARINE ELECTRICAL,TYPE- ELETEK VALERE, QTY-01 (Electrical Maintenance Schedule L-03)	
LA 5004	(a) Carry out calibration of all meters (volt meter, ammeter, Kw meter and frequency meter) of MSB and obtain calibration certificate from yard. (b) Safety checks to be carried out for main breakers (voltage trip, over load and reverse power trip).
	DO. Spares CG supply. Material yard supply. Yard to provide calibration certificate. SS to provide specification of meters and breakers during RFIG.
FIRE DETECTION AND ALARM SYSTEM, MAKE- M/S ZEAL MARKETING, TYPE ZEAL, QTY-01 (Electrical Maintenance Schedule L-22) (PAC Firm:- M/s Zeal Marketing Pvt. Ltd.)	
LA 5005	Carry out performance checks and prove the system.
	Delete/ QSD.
ICCP SYSTEM, MAKE- M/S CUPROBAN SYSTEM PTE LTD, SINGAPORE, TYPE-SMPL121002V2 (Electrical Maintenance Schedule L-23) (PAC Firm:- M/s Sargam Metals Pvt. Ltd.)	
LA 5006	(a) Check the condition of anodes, reference electrodes and shield sensors. Renew anode and reference electrodes if consumed more than 50%. (b) Carry out insulation checks with hull. (c)Carry out functional test and calibrate all meters.
	DO through M/s Sargam Metals. Spares CG supply. Material yard supply.
SHORE CONNECTION BOX, MAKE- M/S MARINE ELECTRICALS, 100A/415V/3PH/50Hz, 4 WIRE (Electrical Maintenance Schedule L-33)	
LA 5007	(a) Check the corroded mounting base (b) Check the Insulation of the cable (c) Check the condition of the paint (if required, repaint). (d) Calibrate the all meters and breaker fitted on the shore connection box. Replace the defective components, If required.
	Delete/ QSD.

ALL ELECTRIC MOTORS (Electrical Maintenance Schedule L-36)

LA 5008

Following motors to be overhauled. Overhauling of motors includes following:-

- (a) Checking insulation and varnishing of motor winding.
 - (b) Internal and external painting of motor body.
 - (c) Examine for rotor impeller shaft and bearing housing for flaws, cracks or corrosion. Make good or replace as necessary.
 - (d) Renewal of bearing and seals.
 - (e) Balancing of rotor.
 - (f) Repair of terminal box as necessary.
 - (g) Running test after overhauling of motor.
- Spares Yard supply

SL.	DESCRIPTION	QTY	RATING
01	Anchor Winch	01	2HP
02	AC Sea Water Pump	01	1.5 kW
03	Galley exhaust fan	02	158 Watt
04	Grey Water Pump	01	1.1 kW
05	Fire & GS pump	01	5.5 kW
06	Fire/ Bilge Pump	01	5.5 kW
07	Fresh Water Pump	02	1 kW
08	Fuel Oil Transfer Pump	01	1.1 kW
09	KFWA Pump	01	.34 kW
10	AHU Motor	01	1.5 kW
11	Lube OIL PUMP	01	0.58 kW
12	ASD Compt Supply/ Exhaust Fan	01	158 Watt.
13	Boat Davit Winch Motor	01	kw
14	WC Exhaust Fan	01	158 Watt.
15	Engine Room Supply Fan	02	5.5 kW
16	Galley Exhaust Fan (Main Deck)	01	158 Watt.
17	Sewage circulation pump	01	0.55KW
18	Sewage Transfer pump	01	0.25 kW
19	Sea Water Pump	01	0.37KW

DO. Material yard supply as per RFIC minutes.

WINDOW WIPER , MAKE- M/S STANDARD, TYPE-STANDARD, QTY-04 (Electrical Maintenance Schedule L-21)	
LA 5009	Check the condition of rigid blades, check and Replace damaged blade arm and spring. Check spray nozzles are free from blockage. Carry out overhauling of motors.
BATTERY 200AH/ 180AH, MAKE- EXIDE, TYPE- LEAD ACID, QTY- 18 (Electrical Maintenance Schedule L-25)	
LA 5010	Carry out capacity test of all batteries onboard. Delete. S&D
STARTER/ CONTROL PANELS ,MAKE- MARINE ELECTRICALS/HEINEN& HOPMAN, QTY- 13 (Electrical Maintenance Schedule L-32)	
LA 5011	Calibration of OLRs to be carried out by using CIT set. Check the insulation of the cable, proper operating of MCBs, switches, control units, contractor and OLRs. Renew defective components, if any. Carry out overhauling of panel.
GALLEY HOT PLATE/Cooking Range , MAKE- Sushama & CO (Electrical Maintenance Schedule L-24)	
LA 5012	(a) Check insulation of heating elements. (b) Check function of range switches. (c) Replace control wiring, end connections and sleeve of hot plate.
GYRO COMPASS, MAKE- M/S RAYTHEON ANSCHUTZ, STD-22,QTY-0 (Electrical Maintenance Schedule L-04) (PAC Firm:- M/s Elcome Integrated System Pvt. Ltd. Mumbai)	
LA 5013	(a) Open master compass and dismantle the gyro sphere & inspect all other subassembly for any damage/deterioration. Check the gyro compass for optimum performance. (b) Change the supporting liquid and distilled water. Replace filter ring, Teflon washer & gasket etc. Spares Yard supply. (c) Ensure repeaters are aligned with main gyro and gyro feed is available to Radar and other connects equipment. (d) Open all repeaters, clean it and apply thin coat of appropriate grease to gambol, gear and wheel or teeth belt.
RADAR 'X' BAND, MAKE- M/S FURUNO, JAPAN, TYPE-FAR-8122,PAC- A S MOLOOBHOY & SONS (Electrical Maintenance Schedule L-05) (PAC Firm:- M/s A.S. Moloobhoy Pvt. Ltd. Mumbai)	
LA 5014	Carry out complete overhauling of radar scanner units/ Radar Displays. Check and replace defective motor bearing. Detailed performance checks to be carried out for display, scanners, transceiver unit, control unit and prove the system for optimum performance.
	Delete covered under AMC.

<p>ECHO SOUNDER, MAKE- M/S KODEN, JAPAN, CVS 128, QTY- 01 (Electrical Maintenance Schedule L-06) (PAC Firm:- M/s Elcome Integrated System Pvt. Ltd. Mumbai)</p>	<p>LA 5015 (a) Check transducer for water tightness and check Transducer cable for insulation. (b) Calibrate equipment and check accuracy. (c) On dry Docking of vessel, after sitting on blocks, clean and preserve Transducer and before undocking ensure preservation material to be removed and transducer are thoroughly cleaned.</p>	<p>DO through M/s Elcome Integrated Systems. Spares CG supply. Material yard supply.</p>
<p>EM LOG, MAKE- M/S JON LILLY & GILTED, WALKER 4020, QTY-01 NO., (Electrical Maintenance Schedule L-08) (PAC Firm:- M/s Elcome Integrated System Pvt. Ltd. Mumbai)</p>	<p>LA 5016 Carry out calibration of EM Log and compare the readings with GPS speed. Difference should be within permissible limits.</p>	<p>DO through authorised firm. Spares CG supply. Material yard supply.</p>
<p>GPS, MAKE- M/S KODEN ELECTRONICS ,JAPAN, KGP-193-MKIID (Electrical Maintenance Schedule L-09) (PAC Firm:- M/s Elcome Integrated System Pvt. Ltd. Mumbai)</p>	<p>LA 5017 Carry out functional checks of GPS including all switches and panel</p>	<p>Delete/ QSD.</p>
<p>ECDIS, MAKE- M/S MARIS, PAC- A S MOLOOBHOY & SONS (Electrical Maintenance Schedule L-28) (PAC Firm:- M/s A.S. Moloobhoy Pvt. Ltd. Mumbai)</p>	<p>LA 5018 Carry out performance check as per service manual. Load the latest electronic charts and prove the system.</p>	<p>Delete covered under AMC.</p>
<p>SEWAGE TREATMENT PLANT, MAKE- TECHNICOMAR, TYPE- ECOMAR, QTY- 01 (Electrical Maintenance Schedule L-35) (PAC Firm:- M/s KNH Pvt. Ltd, Chennai)</p>	<p>LA 5019 Check the function of electrical circuit and components. Replace defective component</p>	<p>Discuss during RFIC.</p>
<p>DEEP FREEZER, MAKE- M/S ECO COOL, TYPE- 350LTRS, QTY- 01 (Electrical Maintenance Schedule L-27)</p>	<p>LA 5020 Overhaul the complete system & check for any mechanical damage / corrosion. Repair / Replace them if any.</p>	<p>Delete</p>
<p>SEARCH LIGHT, MAKE- M/S FRANCIS, TYPE-VOYAGER A2261 WM330RC (Electrical Maintenance Schedule L-18)</p>	<p>LA 5021 Carry out optimum performance check.</p>	<p>Delete/ QSD.</p>
<p>TANK GAUGE SYSTEM, MAKE- PSM, TYPE-2215, QTY- 01 (Electrical Maintenance Schedule L-34)</p>	<p>LA 5022 Calibrate all sensors and replace all defective components.</p>	<p>Delete covered under AMC.</p>
<p>ELECTRIC WHISTLE, MAKE- M/S KOCKUM SONICS, TYPE- TI98 (Electrical Maintenance Schedule L-19)</p>	<p>LA 5023 Overhaul electric whistle and control panel. Renew defective components.</p>	<p>Discuss during RFIC</p>

SART, MAKE- M/S SAMUNGG, KOREA, SAR-9 (Electrical Maintenance Schedule L-17)		
LA 5024	Carry out function test as specified in service manual. SART to be functionally tested using a RADAR signal as recommended in the COMSAR guidelines in manual. Firm to provide Test Certificate also. Note: Every time batteries are replaced, the SART must receive functional test and a leak test as specified in manual.	Delete. SS
EPIRB, MAKE- M/S SAMYUNG, KOREA, SEP500, QTY- 01 (Electrical Maintenance Schedule L-16)		
LA 5025	(a) Annual Servicing of equipment to be carried out. (b) Replacement of HRU to be carried out as per procedure laid down in EPIRB users manual.	Delete. Discuss during RFIC, if validity of battery/ HRU lapsed.
FLEET BROAD BAND, MAKE- AD VALVE- WIDEYE , TYPE- FX-150, QTY- 01 (Electrical Maintenance Schedule L-15) PAC Firm:- M/s Elektronik Lab (Mumbai)		
LA 5026	Overhaul the complete units internally, check the performance in all functional modes and prove it for satisfactory operation.	Discuss during RFIC along with present status of MSS terminal
MF/HF TX/RX 150W MAKE- I-COM, TYPE-IC-M802, QTY-01 (Electrical Maintenance Schedule L-10)		
LA 5027	Carry out functional & performance check as per service manual.	Delete.
VHF TX/RX, MAKE- M/S FURUNO, TYPE-FM4000, QTY- 02 (Electrical Maintenance Schedule L-12)		
LA 5028	Carry out performance check as per service manual.	Delete.
HF POWER SUPPLY UNIT, MAKE – M/S I-COM, TYPE ATU 140 (Electrical Maintenance Schedule L-13)		
LA 5029	Carry out performance check.	Discuss during RFIC
TALK BACK/PA SYSTEM, MAKE- M/S JOTRON(PHONTECH),TYPE- CS-3101, QTY- 01 (Electrical Maintenance Schedule L-30)		
LA 5030	(a) Performance checks to be carried out as per maintenance manual and replace defective components. (b) Check all weather deck fittings and water tightness of loud hailer.	DO.

<p>(DISTRIBUTION BOX MAKE- MARINE ELECTRICALS , QTY- 04 (Electrical Maintenance Schedule L-31)</p>	<p>LA 5031 (a) Check the corroded mounting platform and take corrective action. (b) Check the proper operating of MCB,s Switches & Control units, insulation of Panel and cables (c) Check the condition of the paint. If required, re-paint.</p>	Delete/ QSD.
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ICGS C-161**UNDERWATER PACKAGE AND YEARLY ROUTINES OF MACHINERY & EQUIPMENT: HULL**

DL NO	DESCRIPTION OF DEFECT	RHQ(NW) REMARKS
<u>SHIP SIDE, WEATHER DECKS, SUPER STRUCTURE & MAST, ROUTINES - YEARLY</u>		
HA-1001	100% area to be visually surveyed, carry out non-destructive testing (UTG) on suspected area. Specific defect to be projected by SS. Ship Side Area 143 Sqr Mtr, Super structure including mast area 113 SQ Mtr and weather decks is 134 M ² .	Do. Survey by class surveyor. Cater for 100 UTG points.
HA-1002	Complete ship side and super structure to be painted as per paint scheme.	DO. Touch up paint scheme for Ship Side & weather decks and only one final coat for super structure & Mast. Yard to also include Painting of "भारतीयतरक्षक" lettering in Hindi on Starboard side and "INDIAN COAST GUARD" in English on Port Side including ship's band and pennant number. Paint CG Supply.
<u>WATER TIGHT DOORS AND HATCHES (DOORS - 05 NOS AND HATCHES -04 NOS), ROUTINES - YEARLY</u>		
HA-1003	Carry out 100% survey and chalk/Hose testing of all WT doors and hatches. Rubber beading to be replaced, if required.	Do. Undertake 100 % survey and chalk test on all WT doors and hatches with class surveyor. Repair/renewal if any under AWRF. Material yard supply. Neoprene rubber for internal and EPDM for external doors and hatches.
<u>GENERAL COMPARTMENTS, (COMPTS- 05 NOS), ROUTINES- YEARLY</u>		
HA-1004	100% area to be visually surveyed, carry out non-destructive testing (UTG) on suspected area. Specific defect to be projected by SS.	Do. Survey by class surveyor. Cater for 50 UTG points. Repair/renewal if any against AWRF on surveyor recommendation.
<u>SCUPPER AND DRAINS, TOTAL -05 NOS, ROUTINES- YEARLY</u>		
HA-1005	100 % drain pipe lines to be clean. (Length- 6-7 mtrs, Dia-2.5 inch)	Delete.

HA-1006	Inspect storm valves and renew all scupper lips. (Valve dia-40 mm, Qty-03 No.)	Do. Overhauling and pressure testing of valves. Material yard supply.
FRESH WATER TANK, QTY-01 NO, ROUTINES- YEARLY		
HA-1007	Renew manhole cover gaskets.	Delete.
HA-1008	Dry out and inspect compartment structure for failure of paint coating. Remove any loose or flaking paint and all sign of erosion by scraping and wires brushing apply paint as per touch up scheme.	Do. Survey by class surveyor and touch up paint scheme. Paint CG supply. Material yard supply. Volume of tank 3.0 M ³ .
ANCHOR AND ANCHOR ROPE (MAKE : DANFORTH SHHP, MODEL- 80 KG, TYPE 'A', QTY-01 NO), ROUTINES- YEARLY		
HA-1009	Following yearly routine as part of maintenance routine to be carried out: Check the condition of polyamide rope and replace polyamide rope with new one, if required. (Make- Danforth, Type- 'A' SHHP fully balanced anchor, Qty-01, Wt- 80 KG, 1.3 Mtr chain with adaptor piece connecting Anchor and PP rope of 110 Mtr).	Do. Survey by class surveyor. Renewal if any against AWRP as per surveyor recommendation. Cleaning and painting of Anchor and 1.3 Mtrs Chain to be undertaken. Paint yard Supply.
ANCHOR WINCH / BOAT WINCH (MAKE- M/S BHAWANI ENGG, QTY -01 NO), ROUTINES- YEARLY		
HA-1010	Strip and inspect windlass brake mechanism.	DO. Overhauling of Windlass for DI SI HA-1010 to HA-1014. Yard to provide load test certificate. Spares CG Supply. Material yard supply
HA-1011	Examine brake linings, pin and bush for wear and renew as necessary.	
HA-1012	Drain oil from gear box and refill fresh oil.	
HA-1013	Cable holder gypsy and drums to be removed. Examine for wear and deteriorations.	
HA-1014	Windlass to be overhauled.	
OFFICERS & RATINGS WASH ROOM, ROUTINES- YEARLY		
HA-1015	100 % drain pipes to be clean.	Delete. Discuss during RFIC
FUEL, LUB OIL AND HYD OIL, BILGE HOLDING TANK & DIRTY OIL TANK, ROUTINES- YEARLY		
HA-1016	All tanks to be emptied / cleaned/ surveyed and applied with linseed oil. (Tanks to be ventilated and gas freed. Yard to provide gas free certificate from department of explosive, prior man entry). Qty- Fuel-02, LO-01, HO-01, Bilge-01 & dirty Oil- 01)	Do. Survey by class surveyor. Material including linseed oil yard supply. SS to mention volume of tanks during RFIC. Gas free certificate covered under HA-1058.
HA-1017	Clean, scrap and re-paint the damaged paint on the outer surface of tank.	Delete. SS
HA-1018	Manholes cover gaskets and securing bolts (Mat: SS) to be inspected and defective ones to be renewed.	Delete. Discuss during RFIC

<u>GREY WATER TANK, ROUTINES : YEARLY</u>	
HA-1019	Remove the grey water from tank, clean with liquid detergents and scrap the damaged paint, carry out 100% survey by surveyor. Repaint the tanks as per paint scheme.
HA-1020	Manholes cover gaskets and securing bolts to be inspected and defective ones to be renewed.
<u>SEWAGE TANK, ROUTINES : YEARLY</u>	
HA-1021	Remove the black water from tank, clean with liquid detergents and scrap the damaged paint, carry out 100% survey by surveyor. Repaint the tanks as per paint scheme.
HA-1022	Manholes cover gaskets and securing bolts to be inspected and defective ones to be renewed.
<u>UNDERWATER HULL AND COMPARTMENT</u>	
HA-1023	Scrap and clean the marine growth immediately on docking and wash with fresh water. Clean the EM log and Echo Sounder pickup head. Clean all sea growth and apply paint as per paint scheme.
HA-1024	Renew all sacrificial anodes (both hull and ASD) which are consumed 50% or more. All other anodes to be cleaned with wire brush. The securing arrangement of sacrificial anodes those consumed less than 50% to be checked.
HA-1025	Carry out UTG of critical or suspected area as per class surveyor recommendation.
HA-1026	Remove all 03 nos underwater gratings, clean and chip to bare metal and to be refitted after painting as per paint scheme with adequate surface preparation. Renew all damaged fasteners.

Do. Survey by class surveyor. Undertake touch up paint scheme. Paint yard supply. Material yard supply as per RFIC minutes. SS to mention volume of tank during RFIC

Delete. Discuss during RFIC

Do. Survey by class surveyor. Undertake touch up paint scheme. Paint yard supply. Material yard supply as per RFIC minutes. SS to mention volume of tank during RFIC

Delete. Discuss during RFIC

Do. Painting covered under HA- 1027

Do. Anodes CG supply. SS to provide Specification and number of Anodes during RFIC

Do. Total UTG points- 250. Repair/ renewal, if any against AWRF on surveyor's recommendation.

DO. Paint and material yard supply as per RFIC minutes.

HA-1027	<p>Paint u/w Hull and boot top area as per paint scheme.</p> <p>CGBR 382 page 101 of 132 Annexure 4C Para 4.2 (C) of chapter 4.</p> <table border="1" data-bbox="973 302 1420 1377"> <thead> <tr> <th>Location</th> <th>Paint Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Exterior area includes hull under water hull, boot top & jet tunnel.</td> <td>Intergaurd 269 EGA 088/A Red</td> <td>60 ltrs</td> </tr> <tr> <td rowspan="2">total area 357 sq mtrs (paint scheme: Akzo nobel)</td> <td>Intershield 300 ENA 301/A Aluminium</td> <td>120 ltrs</td> </tr> <tr> <td>Intershield 300 ENA 300/A Bronze</td> <td>120 ltrs</td> </tr> <tr> <td rowspan="2">Boot top (19 sq mtrs) final coat after first 04 coat</td> <td>Intersleek 731 light pink BXA 730/A</td> <td>80 ltrs</td> </tr> <tr> <td>Intersleek 757 red BXA 756/A</td> <td>100 ltrs</td> </tr> <tr> <td></td> <td>Intersleek 757 Black BXA 756/A</td> <td>20 ltrs</td> </tr> </tbody> </table>	Location	Paint Description	Qty	Exterior area includes hull under water hull, boot top & jet tunnel.	Intergaurd 269 EGA 088/A Red	60 ltrs	total area 357 sq mtrs (paint scheme: Akzo nobel)	Intershield 300 ENA 301/A Aluminium	120 ltrs	Intershield 300 ENA 300/A Bronze	120 ltrs	Boot top (19 sq mtrs) final coat after first 04 coat	Intersleek 731 light pink BXA 730/A	80 ltrs	Intersleek 757 red BXA 756/A	100 ltrs		Intersleek 757 Black BXA 756/A	20 ltrs	DO. Apply touch up FRC scheme (Existing paint scheme: Akzonobel). Paint yard supply. Under water area including boot top & jet tunnel 357 Sqm.
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HA-1028	<p>The ASD compartment to be cleaned with paint remover, scrapers and re-painted as per paint scheme. Inner circumference of 02 nos ASD transom plates to be painted on completion of ASD routines.</p> <p>Note: Expect transom (inner side) applied with FRP coating and Simplan seal area.</p>	Do. Paint and material yard supply. SS to provide paint scheme.																			
HA-1029	Paint draught marks.	Do in conjunction with HA-1027. Paint yard supply																			
HA-1030	Open spray rail cocks and flush with bituminous paint.	Do. Paint yard supply																			
HA-1031	Dielectric shield to be examined for wear and damaged layer of resin/aramdite to be re-coat as per specification.	Do only inspection. Repair/renewal if any under AWRP.																			
<u>INFLATABLE LIFE RAFT (Next yearly routine due in Nov 19), MAKE- M/S AQUARIOUS FIBRE GLASS PVT LTD, QTY-01 NO</u>																					
HA-1032	Dismantle the hydrostatic release unit (HRU). Overhaul and test release gear.	Delete.																			
HA-1033	Carry out annual survey of life raft for inspection and testing.	Delete.																			
<u>SANITARY SYSTEM</u>																					
HB-1034	Commode of ratings and officer WC to be checked for leakage. Bolt and seat to be replaced.	Delete.																			

MISCELLANEOUS		
HB-1035	Deck flooring (approx 20 sq mtrs) to be renewed. Vinyl wooden sheet of complete bridge, ward room and living area to be replaced.	Delete.
HB-1036	Summica of Wardroom, dining hall, Captain's cabin, Chart table and SO's cabin tables to be replaced.	Delete.
HB-1037	Ratings bathroom and officer bathroom are fitted with tiles flooring to be replaced with microtech flooring.(Approx 15 Sqr mtr)	Delete.
GENERAL / YARD SERVICES		
HA-1038	Fire main supply of 04 bar pressure at the rate 40 TPH to be supplied to ship invariably for full duration of refit. Refitting yard is to provide 01 in No. fire sentry each, wherever hot work is in progress. SS is also to provide their own fire sentry as required. If yard do not have facility for round the clock fire main pressure, yard to make arrangement for fire tender to be stand-by all the times.	DO.
HA-1039	Garbage clearances and disposal facility to be provided for the entire duration of refit.	DO.
HA-1040	Shore supply power connection (415V,50 Hz, 3 Phase, 4 wire, 50 Amps shore supply with neutral) for consumption power up to 30 units per day and connecting / disconnecting cable as and when required with feeder breaker capacity of not less than 150KW. Payment will be made on pro rata basis as per actual power consumption. Ships staff to maintain a logbook for actual power consumption. Yard to provide KWH meter for measurement of electricity units.	DO. Payment will be made at actual on pro rata basis.
HA-1041	Crane facility is to be provided as and when required. Yard to cater for 25 hours operation during the entire refit period. However, payment will be made at actuals. Ship staff to maintain a record/logbook on this aspect.	DO.
HA-1042	Supply of fresh water to be catered for 01 tons per day including 100 ltrs drinking water per day. However, payment will be made at actuals and SS to keep record of water received during refit.	DO. Payment will be made at actual on pro rata basis.
HA-1043	All OEM/PAC and refitting firms 'Hull', 'Engineering' and 'Electrical' reps are to embark ship for pre and post refit trials sailing till satisfactory performance/ acceptance of the machinery by the ship.	DO. Yard to undertake pre and post refit trails as per sl (a) para 14 of RFIC minutes.

HA-1044	Preparation of Keel blocks and certificate of suitability is to be issued by the refitting firm. Keel blocks are to be offered to overseeing authority for inspection, prior docking of the ship.	DO.
HA-1045	Keel blocks are to be arranged as per latest approved docking plan, and ship is to be dry-docked in both versions.	DO both version docking. SS to provide latest docking plan.
HA-1046	Tug for docking, undocking, berthing and un-berthing are to be provided as and when required from pre-routine trials till completion of routines.	DO.
HA-1047	Pilot is to be provided while entering and leaving dock and harbour.	DO.
HA-1048	Shipyard is to provide 02 nos mobile phones with unlimited calling in India and one unlimited data connection for voice communication and E-mail respectively during entire refit duration. Yard's office fax facility will be used for fax in/ out by the ship.	DO.
HA-1049	Refitting yard to extend fax/ e-mail facility to COA/ Refit Overseeing Team as and when required basis.	DO.
HA-1050	The refitting yard is to provide one staff car for CGRPS/ COA and one MUV/08 Seater for ship's company for refit duration for 100 Km/day or 12 hrs/day whichever is exhausted earlier (The transport usage commences and terminates at the gangway).	DO.
HA-1051	Provide temporary lights to ensure illumination at appropriate level.	DO.
HA-1052	Compressed air supply as and when required.	DO.
HA-1053	A/C system is to be kept operational for maximum duration of the refit and alternate seawater cooling lines are to be provided whenever feasible to keep system operational.	DO.
HA-1054	Proper alongside berthing facility (not alongside pantoon/floating dock, etc.) and yard services for ship are to be provided for the entire period of refit. The refitting firm is to ensure that there is no unnecessary shifting of ship during the ship's refit. In event of berthing and yard services provided by ICG, the cost of the same would be deducted at actuals.	DO. Berthing and unberthing at wet basin including basin hire charges are to be catered for. In event of berthing and yard services provided by ICG, the cost of the same would be deducted at actuals.

HA-1055	Appropriate refit office for overseeing team with necessary furniture and A/c.	DO. Refit office to include WC facility for EPs and Officers.
HA-1056	Adequate storage space to be provided to IBs during major hull repair work. Approx store room size 15 X 15 ft.	DO.
HA-1057	Shore galley facilities including gas burners and cost of cooking gas to be provided when the ship's galley becomes non-operational. 01 in no. refrigerator is also to be provided during period ship's galley becomes non-operational at no extra cost.	DO.
HA-1058	The refitting firm to arrange Gas free Certificate for all Fuel/ Lube oil tanks prior commencing hot work. For this purpose provision of blowers with hoses and visit of Inspector of Explosive are to be catered for.	DO. The refitting firm to arrange Gas Free Certificate for all Fuel/ Lube oil tanks prior commencing survey/ hot work. For this purpose provision of blowers with hoses and visit of Inspector of Explosives are to be catered for.
HA-1059	The ship is to carry out de-fueling prior coming in dry-dock. The refitting firm is to provide suitable containers/space for storing residual fuel. The Ship to collect fuel prior departing from the yard.	DO.
HA-1060	Sufficient ventilation to be provided when ship's AC becomes non-ops.	DO.
HA-1061	Yard to provide facilities for DP testing/load testing of Capstan/ towing hook/ Davits etc.	DO.
HA-1062	Yard to provide staging /scaffolding for jobs on ship's sides / water-jets in the dry dock / slipway.	DO.
HA-1063	Accommodation: The refitting firm is to provide accommodation to the Ship's crew when ship becomes uninhabitable. Accommodation is to be provided for following crew as per the scale of accommodation indicated below:- (i) <u>Officers.</u> Cabin accommodation for 01 officer with following amenities:- (aa) One single occupancy room with A/C (ab) Attached toilet with bathroom. (ac) Basic room curtain and TV. (ad) Table and chairs.	DO. Yard to provide accommodation, Shore galley facilities with appropriate exhaust system including gas burners and cost of cooking gas to be provided when the ship's galley becomes non-operational.

	<p>(ae) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blanket to be provided.</p> <p>(ii) <u>Subordinate Officer</u>. Cabin accommodation for 04 SOs with following facilities:</p> <p>(aa) Two double bedrooms with A/C.</p> <p>(ab) Attached toilet & bathroom.</p> <p>(ac) Basic room curtain and TV.</p> <p>(ad) Table and chairs.</p> <p>(ae) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blankets to be provided.</p> <p>(af) Common dining space with TV.</p> <p>(iii) <u>Enrolled Personnel</u>. Dormitory type accommodation with curtains for 09 Enrolled Personnel to be provided. The scale of accommodation is as follows: -</p> <p>(aa) 09 in nos. single bed/cots. Rooms to have Air cooler circulator.</p> <p>(ab) Each single bed/cot to be provided with mattress, bed sheet, pillow cover.</p> <p>(ac) Five W/C and Five bathrooms.</p> <p>(ad) Dormitory room to have basic upholstery like teapoy, TV, curtains and easy chairs and wardrobe for keeping uniforms and day to days items.</p> <p>(ae) Dining space and Cooking area.</p> <p>(af) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blankets to be provided.</p>	
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UNDERWATER PACKAGE AND YEARLY ROUTINES OF MACHINERY & EQUIPMENT: ENGINEERING

DL NO	DESCRIPTION OF DEFECT	RHQ(NW) REMARKS
ARNESON SURFACE DRIVE, MAKE- M/S TWIN DISC, TYPE-ASD16AIS, QTY-02 NOS, Routines- Yearly, PAC – M/s Aries Technical Sales & Service Pvt Ltd Mumbai		
EA 3001	Operate the system from bridge and steering room in both follow up and non follow up mode, rectify defect if any.	Do. Through PAC firm M/s Aries tech, Mumbai. Spares/hoses CG supply. Material yard supply.
EA 3002	Check solenoid valve.	
EA 3003	Clean and inspect propeller shaft seal.	
EA-3004	Carry out calibration of all electrical instruments and gauges and calibration certificate to be provided.	Delete. Discuss during RFIC. Not covered in Refit/yearly routines as per maintenance schedule.
EA-3005	Renew all flexible Hoses.	Delete. Not covered in Refit/yearly routines as per maintenance schedule.
AC PLANT, MAKE- M/S HEINEN & HOPMAN PVT LTD, TYPE-6DA 537, CAPACITY-12 TR, QTY-02 NOS, Routines : Yearly PAC- M/s Heinen & Hopman Engineering India Pvt Ltd, Kolkatta		
EA 3006	Inspect chemical clean condenser pump strainer.	Delete. SS
EA 3007	Inspect and chemical clean condenser tubes .	DO. Renew sacrificial anode. Material/anode yard supply.
EA 3008	Inspect sheets and gaskets of condenser.	DO. Material yard supply.
EA 3009	Check the operation of two way solenoid valve.	Do through PAC firm M/s Heinen & Hopman Engineering India Pvt Ltd, Kolkata. Spares CG supply. Nitrogen and Material yard supply.
EA 3010	Check the operation of expansion valve.	
EA 3011	Replace compressor oil.	
EA 3012	Top over hauling of compressor to be carried out.	
EA 3013	Vacuum and pressure test to be carried out for 24 hrs.	
EA 3014	Vacuum and pressure test for 24 hrs each.	Delete. Covered under EA-3013
AHU, MAKE- M/S HEINEN & HOPMAN PVT LTD, TYPE-ETU-020H, QTY-01 NO, Routines : Yearly, PAC Firm- M/s Heinen & Hopman Engineering India Pvt Ltd, Kolkatta		
EA 3015	Check whether the connections are intact and vibration dampers not harmed.	Do. Material yard supply
EA 3016	Check for corrosion and leakage of cooling coil.	Do. Material yard supply
EA 3017	Carry out chemical cleaning of cooling coils.	Do. Material yard supply

EA 3018	Blow through the cooling coil with air stream from counter flow direction.	Do. Material yard supply																				
FM 200 FIRE FIGHTING SYSTEM, MAKE- ZEAL MARKETING PVT. LTD, TYPE-FM 200, QTY- 01 NO, Routines : Yearly																						
EA 3019	Remove nozzle from piping to allow any foreign material to blow clear.	Do through authorised firm. material yard supply. Recharge of gas if any against AWRP if weight loss of gas is more than 10 percent.																				
EA 3020	Remove all pressure operated control from FM-200 cylinders.																					
EA 3021	Open distributing valve and keep open long enough cleanliness of pipe.																					
EA 3022	Reconnect all control heads.																					
EA 3023	Over haul the control system, monitoring system, and fire detection system.																					
EA 3024	Clean the pipe line system and carry out pressure testing of the system.																					
EA 3025	Weight the cylinder and recharge, if weight loss is more than 10%.	Do overhauling of pump. Spares CG supply and material yard supply as per RFIC Minutes																				
EA 3026	Clean discharge nozzle.																					
BILGE & GS PUMP AND FIRE & GS PUMP, MAKE-M/S SPX FLOW TECHNOLOGY PVT LTD, Ahmadabad																						
Routines : Yearly, PAC- M/S SPX FLOW TECHNOLOGY PVT LTD, Ahmadabad																						
EA 3027	Dismantle the pump.																					
EA 3028	Replace the bearings.																					
EA 3029	Replace the mechanical seal.																					
EA 3030	Check the tip clearances.																					
EA 3031	Check the wear and tear on impeller.																					
EA 3032	Change wear ring and guide ring.																					
FUEL OIL SYSTEM, MAKE-BHARATI SHIPYARD LTD, QTY- 01 NO																						
EA 3033	Overhaul, pressure test and pressure testing of following fuel oil valves.	Do 25% only. Material yard supply as per RFIC minutes																				
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EA 3034	Overhaul 02 in Nos hand pumps of fuel oil system.	Delete																												
HYDRAULIC OIL SYSTEM, MAKE- M/S TWIN DISC, QTY -01 NO, Routines : Yearly																														
EA 3035	Overhaul and pressure test of system valves. (size- 1 inch ball valve, Qty- 02 nos)	Delete.																												
EA 3036	Examine tank sounding and vent pipes for defects. L-30 Mtrs, Size- 1/2", 1" rubber flexible hose.	Delete.																												
SEA WATER COOLING SYSTEM, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly																														
EA 3037	Overhaul and pressure test of system valves.	Do 25% only. Material yard supply as per RFIC minutes																												
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EA 3038	Carry out chemical cleaning and pressure testing of pipes. (L- 30 Mtrs, Size- 3", 2 1/2", Mat -CuNi)	Do cleaning and pressure testing for 10 mtr pipes only. Test pressure - 5 bar. Material yard supply as per RFIC minutes..																												
BILGE SYSTEM, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly																														
EA 3039	Overhaul and pressure test of all bilge system valves.	Do 100% as per maintenance schedule. Material yard supply as per RFIC minutes																												
	<table border="1"> <thead> <tr> <th>Type of valve</th> <th>Qty</th> </tr> </thead> <tbody> <tr><td>Check valve DN 50</td><td>07</td></tr> <tr><td>Butterfly valve DN 50</td><td>07</td></tr> <tr><td>Globe valve (OBD) DN 65</td><td>01</td></tr> <tr><td>Check valve DN 65</td><td>01</td></tr> <tr><td>Butterfly valve DN 65</td><td>04</td></tr> <tr><td>Globe valve QSD</td><td>01</td></tr> <tr><td>SDNR valve DN 65</td><td>02</td></tr> </tbody> </table>	Type of valve	Qty	Check valve DN 50	07	Butterfly valve DN 50	07	Globe valve (OBD) DN 65	01	Check valve DN 65	01	Butterfly valve DN 65	04	Globe valve QSD	01	SDNR valve DN 65	02													
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FIRE MAIN SYSTEM, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly																														
EA 3040	Overhaul and pressure test of system valves.	Do 25% only. Material vard supply as per RFIC minutes																												

	Type of valve	Qty		
	Check valve DN 65	01		
	Butterfly valve DN 65	02		
	Fire Hydrant valve DN 65	04		
	Isolating valve (globe) 1NB	01		
BLACK AND GRAY WATER SYSTEM, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly				
EA 3041	Overhaul and pressure test of system valves. (Ball valve-01 No, size- 3 1/2")			Delete.
EA 3042	Carry out Cleaning of system pipes. (L-30 Mtrs, Dia-2 1/2", Mat-PVC)			Do cleaning for 10 mtr pipe. Material yard supply as per RFIC minutes.
EA 3043	Check performance of pumps. (Qty-01 no)			Do overhauling of pump. Spares & Material yard supply.
EA 3044	Examine vent pipes for any defects.			Delete. SS.
FRESH WATER SYSTEM, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly				
EA 3045	Carry out cleaning of fresh water system pipe lines. (L-50 Mtr, Dia- 1" & 1/2", mat- PVC)			Delete.
EA 3046	Carry out overhauling and pressure testing of system valves.			Delete. S&D
	Type of valve	Qty		
	Check valve 1"	04		
	Ball valve 1"	04		
	Ball valve 1/2"	04		
	Taps for bathroom	13		
EA 3047	Check function of relief valves.(Qty-01)			Delete. Discuss during RFIC
EA 3048	Examine vent pipes for defects.			Delete SS.
EA 3049	Calibrate pressure switch and pressure gauge. calibration certificate to be Provided.(Qty- Pr.switch -01, Pressure Gauge- 01)			DO
ENGINE ROOM BILGES, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly				
EA 3050	Examine filling vent pipes for defects.			Delete SS.
WASTE AND LUB OIL SYSTEM, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly				
EA 3051	Overhaul valves.			Do 25% only. Material yard supply as per RFIC minutes
	Type of valve	Qty		
	Glove Check valve, DN 40	01		
	Glove check valve DN 25	03		
	Glove check valve DN 32	01		
	Ball valve DN 20	04		

EA 3052	Carry out chemical cleaning and pressure testing of pipe line. (L-20 Mtr, Dia- 3 1/2", Mat-SS)	Do for 5 mtr only. Material yard supply as per RFIC minutes.
EA 3053	Carry out pressure testing of flexible hoses. (L-05 Mtrs)	Delete.
EA 3054	Overhaul semi rotary hand pump.	Delete.
EMERGENCY DIESEL DRIVEN FIRE PUMP, MAKE- SPX FLOW TECHNOLOGY, TYPE- KGEFC 16-6, QTY-01 NO, Routines : Yearly		
PAC- M/S SPX FLOW TECHNOLOGY PVT LTD, Ahmadabad		
EA 3055	Carry out overhauling of emergency fire pump as per instructions laid down in manual.	Delete. Discuss during RFIC
MAGAZINE SPRINKLING SYSTEM, MAKE- BHARATI SHIPYARD LTD, Routines : Yearly		
EA 3056	Dismantle the valves, check for corrosion and send to work shop for over hauling. (Ball valve Size- 1", Qty-01)	Do. Material yard supply.
EA 3057	Replace Bulb element. (Qty-01)	Do. Material yard supply.
AC CONDENSER PUMP, MAKE-M/S SPX FLOW TECHNOLOGY, PVT LTD, TYPE- KGEFC 12B-5, QTY-01 NO., Routines : Yearly,		
PAC- M/S SPX FLOW TECHNOLOGY PVT LTD, Ahmadabad		
EA 3058	Dismantle the pump.	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
EA 3059	Replace the bearings.	
EA 3060	Replace the mechanical seal.	
EA 3061	Check the tip clearances.	
EA 3062	Check the wear and tear on impeller.	
EA 3063	Change wear ring and guide ring.	
GREY WATER PUMP, MAKE-TECNICOMAR, TYPE-BCM20, QTY- 01 NO, Routines : Yearly		
EA 3064	Dismantle the pump.	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
EA 3065	Replace the bearings.	
EA 3066	Replace the mechanical seal.	
EA 3067	Check the tip clearances.	
EA 3068	Check the wear and tear on impeller.	
EA 3069	Change wear ring and guide ring.	
FRESH WATER PUMP, MAKE-M/S SPX FLOW TECHNOLOGY, PVT LTD, TYPE- KGEFC 16-3, QTY-02 NOS., Routines : Yearly,		
PAC- M/S SPX FLOW TECHNOLOGY PVT LTD, Ahmadabad		
EA 3070	Dismantle the pump.	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
EA 3071	Replace the bearings.	
EA 3072	Replace the mechanical seal.	
EA 3073	Check the tip clearances.	
EA 3074	Check the wear and tear on impeller.	

EA 3075	Change wear ring and guide ring.	
FUEL OIL TRANSFER PUMP, MAKE-SPX FLOW TECHNOLOGY, MODEL-TGL047, QTY-01 NO, Routines : Yearly		
PAC- M/S SPX FLOW TECHNOLOGY PVT LTD, Ahmadabad		
EA 3076	Dismantle the pump.	DO overhauling. Spares CG supply. Material yard supply as per RFIC minutes.
EA 3077	Replace the bearings.	
EA 3078	Replace the mechanical seal.	
EA 3079	Check the tip clearances.	
EA 3080	Check the wear and tear on gear.	
EA 3081	Change wear ring and guide ring.	
SEWAGE TREATMENT PLANT, MAKE-TECHNICOMA R.S.P.A, TYPE-ECOMAR 6AC, QTY- 01 NO, Routines : Yearly		
EA 3082	Manually start all the pump and stop immediately in case of no rotation of the impeller.	Do through authorised firm. Spares CG supply. Material yard supply
EA 3083	Remove the back cover and rotate the axis manually.	
EA 3084	Replace the disinfecting liquid.	
EA 3085	On the control panel set the operation mode to manual.	
EA 3086	Check the rotation sense of each pump.	
AIR COMPRESSOR, MAKE- PNEUMECH COMPRESSOR CO, TYPE- PM-205 (2 HP), QTY-01 NO, Routines : Yearly		
EA 3087	Overhaul the compressor.	Do through authorised firm. Spares CG supply. Material yard supply as per RFIC minutes. Compressor to be proved for satisfactory performance.
FUEL OIL/WATER SEPARATOR, MAKE-MTU, QTY-01 NO , Routines : Yearly		
EA 3088	Differential pressure gauge of fuel treatment system: Check alarm function.	Do.
EA 3089	Check pumps capacity of fuel treatment system.	Delete.
EA 3090	Check operation of rod electrode in fuel treatment system.	DO.
OBM , Make- Yamaha Model-Enduro 25 HP, Routines : Yearly		
EA 3091	Overhaul The OBM	Discuss during RFIC

ICGS C-161**UNDERWATER PACKAGE AND YEARLY ROUTINES OF MACHINERY & EQUIPMENT: ELECTRICAL**

DL NO	DESCRIPTION OF DEFECT	RHQ(NW) REMARKS
MAIN ENGINE CONTROLS , MAKE- M/S MTU GERMANY, TYPE-MCS 5 ,QTY-02, Routines : Yearly		
LA 5001	Carry out functional test and calibrate & prove all sensors and safeties of Engines. Check the condition to all electrical connection in LOP, Bridge & Fly Bridge for loose connection, deterioration of wiring/cables and replace if required.	DO through PAC firm. Spares CG supply.
DIESEL GENERATOR, MAKE- CATERPILLAR ,TYPE-C4.4 DITA, QTY-02 NOS, Routines : Yearly		
LA 5002	Inspect and clean winding. If insulation is found low, cleaning, varnishing and baking of winding to be carried out including proving of Generator.	DO. Spares CG supply. Material yard supply
LA 5003	Overhaul full generator assembly including AVR, battery starter and space heater. Generator to be proved for satisfactory operation on ship's load on 100%, 75% & 50%.	DO. Spares CG supply. Material yard supply
LA 5004	Check the capacity of generator with ship's load on 100%,75% & 50%.	Delete. Covered under LA 5003
LA 5005	Following safety trips and alarm sensor to be checked and calibrated: (i)Low lube oil pressure (i)High coolant temp (iii)Over speed trips	DO. Spares CG supply. Yard to provide calibration certificate. SS to witness in-situ trials.
LA 5006	Following gauges to be checked and calibrated: - (i)Lube oil pressure gauge (ii)Fresh water temp gauge (iii)RPM gauge	DO. Spares CG supply. Material yard supply. Yard to provide calibration certificate.
MAIN SWITCH BOARD, MAKE- M/S MARINE ELECTRICAL, TYPE- ELETEK VALERE, QTY-01 NO, Routines : Yearly		
LA 5007	Carry out calibration of all meters (03 Nos volt meter, 03 Nos ammeter, 02 No Kw meter and 03 Nos frequency meter).	DO. Spares CG supply. Material yard supply. Yard to provide calibration certificate.
LA 5008	Safety checks to be carried out for main breakers (voltage trip, over load and reverse power trip).	DO. Spares CG supply. Material yard supply.
GYRO COMPASS & REPEATERS, MAKE- M/S RAYTHEON ANSCHUTZ, STD-22,QTY-01 NO & 03 NOS REPEATERS, Routines : Yrly		
LA 5009	Open master compass and dismantle the gyro sphere & inspect all other subassembly for any damage/deterioration. Check the gyro compass for optimum performance.	DO through PAC firm. Spares CG supply. Material yard supply.
LA 5010	Change the supporting liquid and distilled water. Replace filter ring, Teflon washer & gasket etc.	
LA 5011	Ensure repeaters are aligned with main gyro and gyro feed is available to Radar and other connects equipment.	

LA 5012	Open repeaters, clean it and apply thin coat of appropriate grease to gimbals, gear and wheel or teeth belt.	
ECHO SOUNDER, MAKE- M/S KODEN, TYPE: LS6100E, QTY- 01 NO, Routines : Yearly		
LA 5013	Check transducer for water tightness and check transducer cables for insulation.	
LA 5014	Calibrate equipment & check accuracy.	
LA 5015	On dry docking of vessel, after seating on blocks, clean and preserve transducers and before undocking ensure preservation material to be removed and transducer are thoroughly cleaned.	DO through PAC firm. Spares CG supply. Material yard supply.
ULTRASONIK WIND SENSOR, MAKE- FURUNO, TYPE- RD33, QTY-01 no, Routines : Yearly		
LA 5016	Carry out cleaning and calibration of ultrasonic wind sensor.	Discuss during RFIC.
EM LOG, MAKE- M/S JOHN LILLY & GILLY, QTY-01 NO, Routines : Yearly		
LA 5017	Carry out calibration of EM Log and compare the readings with GPS speed. Difference should be within permissible limits.	DO through PAC firm. Spares CG supply. Material yard supply.
GPS, MAKE- M/S KODEN,TYPE:KGP-193MKIID, QTY-01 NO, Routines : Yearly		
LA 5018	Carry out functional checks of all switches, light and panel.	Delete/ QSD.
MF/HF TX/RX 150W MAKE- I-COM, TYPE-IC-M802, QTY-01 NO, Routines : Yearly		
LA 5019	Performance checks to be carried out and functional operational to be proved.	Delete/ QSD.
HF POWER SUPPLY UNIT, MAKE – M/S I-COM, TYPE ATU 140, QTY-01 NO, Routines : Yearly		
LA 5020	Performance checks to be carried out at rated supply voltage. Deteriorated component if any to be changed.	Discuss during RFIC.
VHF TX/Rx, MAKE- M/S FURUNO, TYPE-FM4000, QTY- 02 NOS		
LA 5021	Performance checks to be carried out and functional operational to be proved.	Delete/ QSD.
V/UHF, MAKE- M/S I-COM, TYPE- I-COM 208H, QTY- 01 NO		
LA 5022	Performance checks to be carried out as per instructions laid down in service manual.	Delete/ QSD.
FLEET BROAD BAND, MAKE- FX-150, QTY- 01 NO (THARANE & THARANE)		
LA 5023	Overhaul the complete units internally, check the performance in all functional modes and proved it for satisfactory operation.	Discuss during RFIC.
EPIRB, MAKE- M/S SAILOR, KOREA, SEP500, QTY- 01, Routines : Yearly		

LA 5024	Annual servicing of equipment to be carried out by OEM/PAC firm with servicing/test report.	Discuss during RFIC, if validity of battery/ HRU elapsed.
LA 5025	Replacement of HRU to be carried out as per procedure laid down in EPRIB user's manual.	
SART, MAKE- M/S SAMYUNG, TYPE: 9.2 GHZ, Routines : Yearly		
LA 5026	Functional test with Radar to be carried out.	Delete. SS
LA 5027	Replace battery, if expiry date falling due.	
SEARCH LIGHT, MAKE- M/S FRANCIS, TYPE: VOYAGER A 2261 WM330RC, QTY-01 NO		
LA 5028	Carry out optimum performance check as per service manual.	Delete/ QSD.
ELECTRIC WHISTLE, MAKE- M/S KOCKUM SONICS, TYPE- TI 98, QTY- 01 NO		
LA 5029	Overhaul the equipment completely and prove for satisfactory operation.	Discuss during RFIC.
LA 5030	Check components for sign of deterioration. Replace the deteriorated wiring and components.	
WINDOW WIPER SYSTEM, MAKE- M/S STANDARD, TYPE-STANDARD, QTY-04 NOS		
LA 5031	Check the condition of rigid blades, & replace, if required.	Discuss during RFIC. Overhaul window wiper system including motors. Replace blade arms & springs.
LA 5032	check blade arm and spring for any damage.	
LA 5033	Check spray nozzles are free from blockages.	
LA 5034	Carry out overhauling of motors and prove for satisfactory operation.	
FIRE DETECTION AND ALARM SYSTEM, MAKE- M/S ZEAL MARKETING, TYPE ZEAL, QTY-01 NO		
LA 5035	Carry out performance checks and prove the system.	Delete/ QSD.
ICCP CONTROL PANEL & PROTECTION SYSTEM, MAKE- M/S CUPROBAN SYSTEM PTE LTD, SINGAPORE, TYPE-SMPL121002V2, QTY-01 NO, Routines : Yearly		
LA 5036	Inspect anodes and reference electrode for any mechanical damage/deterioration.	DO through PAC firm. Spares CG supply. Material yard supply.
LA 5037	Carry out functional test & calibrate all meters.	
LA 5038	Carry out insulation checks w.r.t Hull.	
GALLEY HOT PLATE, MAKE- ELICA (M/s KOHINOOR APPLIANCES) TYPE-PIANO PWT 6C6HO, QTY-01 NO		
LA 5039	Check insulation of heating elements.	Discuss during RFIC.
LA 5040	Check function of range switches.	

LA 5041	(a) Replace control wiring found cracked due to overheating. (b) Replace defective wiring, end connection and sleeve of hot plate.	
BATTERIES, MAKE- EXID, TYPE-LEAD ACID, QTY-18 NOS		
LA 5042	Carry out capacity test of all batteries.	Delete. Discuss during RFIC.
DEEP FREEZER, MAKE- M/S ECO COOL, TYPE- 350LTRS, QTY- 01 NO		
LA 5043	Overhaul the complete system & check for any mechanical damage/corrosion. Repair/replace them if required.	Delete
TALK BACK/PA SYSTEM, MAKE- M/S JOTRON(PHONTECH), TYPE- CS-3101, QTY- 01 NO		
LA 5044	Performance checks to be carried out and change the deteriorated component if any.	Delete
LA 5045	Check all weather deck fittings of PA for tightness including loud hailer and mics.	Delete. SS
DISTRIBUTION BOARDS, MAKE- MARINE ELECTRICALS, QTY- 06 NOS		
LA 5046	Check the corroded mounting platform and take corrective action.	QSD
LA 5047	Check the proper operating of MCBs, switches & control units. Replace defective components with correct ratings.	QSD
LA 5048	Check the insulation of the cable.	QSD
LA 5049	Check the condition of the paint. If required, re-paint.	QSD
STARTER/ CONTROL PANELS, MAKE- MARINE ELECTRICALS/HEINEN& HOPMAN, QTY- 13 NOS		
LA 5050	Calibration of OLRs to be carried out by using CIT test.	
LA 5051	All defective components to be renewed.	
LA 5052	Check the corroded mounting bases.	Do. Spares and material supply as per RFIC minutes.
LA 5053	Check the proper operating of MCBs, switches, control units, contractors and OLRs. Renew defective components, if any.	
LA 5054	Check the insulation of the cable.	
LA 5055	Check the condition of the paint. If required, repaint.	
LA 5056	Carry out overhauling of panel.	
SHORE CONNECTION BOX, MAKE- M/S MARINE ELECTRICALS, QTY- 01 NO		
LA 5057	Check the corroded mounting base.	Delete/ QSD.
LA 5058	Check the insulation of the cable.	Delete

LA 5059	Check the condition of the paint, if required, repaint.	Delete
LA 5060	Calibrate the Voltmeter, Ammeter, Frequency meter, Watt Meter and Breaker fitted on the shore connection box. Replace the defective components, if required.	Do
TANK GAUGE SYSTEM, MAKE- PSM, TYPE-2215, QTY- 01 NO		
LA 5061	Calibrate all sensors and replace all defective components.	Delete. Equipment under AMC with M/s Moolobhoy, Mumbai. Defect if any to be discussed in RFIC.
SEWAGE TREATMENT PLANT, MAKE- TECHNICOMAR, TYPE- ECOMAR, QTY- 01 NO		
LA 5062	Check the function of electrical circuit and components. Replace defective component.	Delete
ALL ELECTRIC MOTORS, TYPE: 415V/230V, 50 HZ, QTY-23 NOS, Routines : Yearly		
LA 5063	All motors are to be overhauled. Overhauling of motors include following: (a) Examine for rotor impeller shaft and bearing housing for flaws, cracks and corrosion Make good or replace as necessary. (b) Renewal of bearing and seals. (c) Painting of motor. (d) Balancing of rotor. (e) Repair of terminal box. (f) Running test after overhauling of motor.	Do. Spares and material supply as per RFIC minutes. Specification of motors to be provided during RFIC. Material yard supply.

