MINUTES OF THE REQUEST FOR INFORMATION CONFERENCE FOR NORMAL REFIT- 1 (NR-1) OF ICGS RAJRATAN

1. A meeting for Request For Information Conference towards NR-1 of ICGS Rajratan was conducted at CGRHQ(NW), Gandhinagar on 09 May 19. Following were present:-

CGRHQ (NW)

(a)	DIG A Amarender Reddy, TM	CSO (Tech)
(b)	Dy Comdt KR Kadam	RTO (Refit)
(c)	J Singh, PSE (SW)	SSO(Refit)
(d)	Sanjay Kumar, SE(ER)	ASSO (Refit)

CGDHQ-1

(e) Comdt Rajbir Dalal

DTO, CGDHQ-1

ICGS RAJRATAN

(f)	Comdt (JG) NR Singh	Commanding Officer
(g)	Lakhvir Singh, SE(P)	SO In-Charge Electrical
(h)	Vinay Kumar, Adh(QA)	SO In-Charge Hull
(j)	Hardeep Singh, SE(ER)	SO In-Charge Engineering

CGRPT (SURAT)

(k) S Gireesh, PSE (SW)

CGRPT Rep

SHIPYARDS

(1)	Mr. Srinu Refit Coordinator	M/s Shoft Shipyard Pvt. Ltd Bharuch
(m)	Mr. Sunil Jain Admin Manager	M/s Chowgule & Company Pvt Ltd, Goa
(n)	Mr. Pramod Patil Sr. Engineer	M/s Krasny Defence Technologies

2. At the outset, CSO (Tech) welcomed members present in the meeting. The CSO(Tech) emphasized that all queries be clarified during the course of defect wise discussion. The refitting firms will have to submit two separate bids in sealed envelopes i.e. technical bid and

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commercial bid for the refit of the ship. The NR-1 of ICGS Rajratan is to be undertaken at Gujarat/ Maharashtra/Goa Coast only being the immediate geographical vicinity from base port (Porbandar). He also intimated that the refitting firms must quote for complete scope of the work (all in way jobs included) at fixed rates for refit duration of 120 calendar days. CSO (Tech) further emphasized on the following points related to the conduct of refit:-

- (a) NR-1 of ICGS Rajratan is to be undertaken at Gujarat/ Maharashtra/ Goa coast only. 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.
- (b) Ship staff to prepare list of long lead spares and initiate procurement of CG supply spares and surface paints.
- (c) Refitting firm winning contract is to submit BAR chart (indicating critical path) along with Quality Assurance Plan (QAP) and PBG. BAR chart and QAP are to be submitted by the refitting firm within 15 days of signing the Refit Contract and is to be finalized during pre refit meeting.
- (d) Requirement of class surveyor as defined in these minutes/SOW are to be strictly adhered by the yards.
- (e) During dry dock period, work may continue round the clock, including blasting/painting. Request for such extended hours should reach the ship 48 hours in advance. During this period, the refitting firm is to arrange suitable bus/vehicle for turnaround of ship's personnel between ship and place of stay provided by refitting firm, at no extra cost. Any specific requirement over and above the working hours indicated, is to be intimated by refitting firm to CGRPS/COA with justification, who will consider the request based upon merit.
- (f) For effective and timely execution of refit, a good co-ordination is expected between CGRPT, ship and the refitting firm.

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- (g) No stoppage of work is permitted unless the same is linked to ship's safety and security. In case of such need arises, the matter is to be immediately referred to the COA.
- (h) For undertaking post refit Guarantee Defects away from base port/ port of conduct of refit, no additional charges (including travelling/ boarding/ lodging) will be reimbursed by ICG to the refitting firm / subcontractor/ PAC firms. The refitting firm is to have necessary arrangements at different ports for attending the guarantee defects.
- (j) Any loss to Govt. property (including during docking and undocking of ship) will have to be made good by the refitting firm by providing the same in serviceable condition/replenished. The refitting firm and its subcontractors will not have any lien on these materials.
- (k) Being refitting firm's subcontractors, obtaining services and quotes from the PAC/OEM firms will remain yard liability.
- (I) The refitting yard is to submit an indent for spares within two working days from opening of a particular machinery or equipment and same is to be vetted by CGRPS/COA within the next two working days. The ship to thereafter raise demand within the subsequent two working days to the Store Depot. The depot is to process this demand within three working days and forward NACs by fax/email. Ink signed NACs are to be forwarded by the depot by post/by hand of Ship's representative.
- (m) EPDM rubber and neoprene rubber for external and internal WT doors and hatches respectively to be used. In this regard CGHQ policy letter FM/0305/CGWO/Gen dated 29 Jan 14 be followed.
- (n) The itemwise or defect list wise quote is to be submitted within 15 days of CNC and the refit of the ship is to start within one month of signing the refit contract.
- (p) PBG for an amount of 10% of contract price is to be submitted by the refitting firm within 30 days of signing of contract. This PBG will remain valid upto eight months from refit completion date. No separate BG needs to be provided by refitting firm for release of stage VIII payment, if the PBG provided earlier covers the guarantee period.
- (q) LD, if applicable, is to be levied only at stage –VI prior raising of "Full & Final payment" certificate. Deduction of amount for jobs approved for deletion will be as per item wise quote submitted by refitting firm.

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- (r) No supply order for NA spares is to be placed after refit completion. Further, for timely settlement of refit bills towards NA spares, the refitting yard should ensure that invoices for the same are accompanied by ink signed NAC.
- (s) Blanking of flanges, pump openings, pipelines have to be carried out if the valves, pumps, pipes are removed for repairs as per standard marine practice. Water tight integrity in all circumstances between compartments is to be maintained to ensure safety of ship during entire duration of refit.
- 3. Following is the summary of response from the participating refitting firms /firms:-
 - (a) Expression of interest/ comments on the main defect list along with acceptance towards terms and conditions for undertaking NR-1 of ICGS Rajratan at Gujarat/Maharashtra/ Goa Coast of India only were invited from the following refitting firms vide CGRHQ (NW) letter 3467/3 dated 24 Apr 19:-
 - (i) M/s Goa Shipyard, Goa
 - (ii) M/s Krasny Defence Technologies Pvt Ltd, Mumbai
 - (iii) M/s Yeoman Marine Services Pvt Ltd, Mumbai
 - (iv) M/s Chowgule & Company Pvt Ltd, Goa
 - (v) M/s Sadhav Offshore Engg Company, Mumbai
 - (vi) M/s Sagar Ship Repairers & Marine Services, Mumbai
 - (vii) M/s Homa Engineering Works, Mumbai
 - (viii) M/s L&T Ship Building Ltd, Mumbai
 - (ix) M/s Shoft Shipyard Pvt Ltd, Bharuch
 - (b) M/s Shoft Shipyard Pvt Ltd, Bharuch submitted their technical comments/ queries vide e-mail dated 02 May 19 and also attended the RFIC.
 - (c) M/s Sadhav Offshore Engg. Co., Mumbai vide email dated 03 May 19 expressed interest to participate in tender however, submitted inability to attend RFIC due to preoccupation.
 - (d) M/s Chowgule & Company Pvt Ltd. Vide Fax CCPL/LY/CG/RAJRATAN/R019/015/01 dated 04 May 19 have expressed interest and attended the RFIC.
 - (e) M/S Krasny Defence Technologies Pvt Ltd, Mumbai Vide letter KDT/200/RTN dated 07 May 19 have expressed their interest and attended the RFIC.

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- (f) The following refitting firms have not responded:-
 - (i) M/s Goa Shipyard, Goa
 - (ii) M/s Yeoman Marine Services Pvt Ltd, Mumbai
 - (iii) M/s Sagar Ship Repairers & Marine Services, Mumbai
 - (iv) M/s Homa Engineering Works, Mumbai
 - (v) M/s L&T Ship Building Ltd, Mumbai
- 4. The main defect list contains defect serials **HA-1001** to **HC-1119**, **EA-3001** to **EA-3200** and **LA-5001** to **LA-5132** is placed at **Annexure-I**.
- 5. The remarks given earlier by CGRHQ (NW) on the main defect list were further elaborated and deliberated during 'Request for Information Conference' and changes in remarks are mentioned as final RFIC remarks and the same have been incorporated in the refit work package. The complete work package with 'Final RFIC remarks' is placed at **Annexure-I**. The existing FO tank (Fr 22-25) and FW tank (Fr 28-30) to be modified as per "Modification of Tank Extend Drawing" Drg No. 2072-79/110221 (placed at **Annexure-II)** under supervision of class surveyor as specified at DL No HC-1119. The refitting yards are required to make note of these remarks and include cost in the final offer while submitting technical and commercial bids/during CNC accordingly.
- 6. The technical queries/ comments of all the shipyards were scrutinised during 'Request for Information Conference'. To bring all the yards technically at par, the scope of work was discussed and clarifications have been incorporated in the final RFIC remarks. All the queries and doubts were discussed and necessary clarifications are included in the Annexures to this document. The amendments and clarifications arising during discussions with each refitting firm in RFIC will also be applicable to the other competing refitting firms.
- 7. The defect description and CGRHQ (NW) remarks in the Main defect list were discussed and scope of work finalised and understood by all who participated in RFIC. The defect list has been checked, scrutinised and it is certified that there is no repetition of defects.

8. Provision of Accommodation during Refit

(a) The refitting firm is to provide accommodation to Ship's crew when the ship becomes uninhabitable. The accommodation is to be provided within a reasonable distance (less than 10 Kms) from the ship in consultation with CGRPT/RHQ. The ship will be considered uninhabitable under any of the following conditions in consultation with CGRPS/COA who will decide upon ship becoming uninhabitable and habitable:-

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- (i) Non availability of toilet and bathrooms.
- (ii) Non availability of galley.
- (iii) Non availability of A/C and ventilation.
- (iv) If more than 50 % of living spaces are disturbed due to degutting-regutting.
- (b) During the uninhabitable period, accommodation is to be provided for following crew as per the scale of accommodation indicated below:-
 - (i) Officers. Cabin accommodation for 05 officers with following Amenities:-
 - (aa) One single occupancy room with A/C
 - (ab) 02 double occupancy rooms officers with A/C
 - (ac) Attached toilet with bathroom.
 - (ad) Basic room curtain and TV.
 - (ae) Table and chairs.
 - (af) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blankets to be provided.
 - (ag) Dinning space and cooking area.
 - (ii) <u>Subordinate Officer</u>. Cabin accommodation for 08 SOs with following facilities:-
 - (aa) 04 nos. double bedrooms with air cooler.
 - (ab) Attached toilet & bathroom.
 - (ac) Basic room curtain and TV.
 - (ad) Table and chairs.
 - (ae) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blankets to be provided.
 - (af) Common dinning space with TV.
 - (iii) <u>Enrolled Personnel</u>. Dormitory type accommodation with curtains for 28 Enrolled Personnel to be provided. The scale of accommodation is as follows: -
 - (aa) 28 in nos. single bed/cots. Rooms to have air cooler circulator.
 - (ab) Each single bed/cot to be provided with mattress, bed sheet, pillow cover.
 - (ac) Six W/C and Six bathrooms.
 - (ad) Dormitory room to have basic upholstery like teapoy, TV, curtains and easy chairs and wardrobe for keeping uniforms and day to days items.
 - (ae) Dinning space and Cooking area.
 - (af) Basic linen viz. mattress, bed sheets, pillow, pillow covers, blankets to be provided.

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- 9. **Yard Services.** The yard is to include following services required to be provided to the Ship for the duration of refit against yard services. No additional service charges to be levied for the jobs undertaken by ICG under DFPR. The item wise quote submitted by the L-1 yard after CNC should separately include charges for each of the below mentioned yard services:-
 - (a) 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 02 qualified fire sentries each, wherever hot work is in progress. SS is also to provide their own fire sentry as required. If the refitting firm does not have facility for round the clock fire main pressure, yard to make arrangement for fire tender to be stand by all the times.
 - (b) Garbage clearances and disposal facility to be provided for the entire duration of refit.
 - (c) Shore supply power connection (415V,50 Hz, 3 Phase) for consumption power up to **500 units per day** and connecting / disconnecting cable as and when required with feeder breaker capacity of not less than 150 KW. Payment will be made at actuals. Ships staff to maintain a logbook for actual power consumption. Shore supply 415V, 50 Hz, 3 Phase to be provided for the duration of refit with provision of voltage meter.
 - (d) Crane facility is to be provided as and when required. Yard to cater for **70 hours** operations during the entire refit period. However, Payment will be made at actuals. Ship staff to maintain a record/logbook on this aspect.
 - (e) Supply of fresh water to be catered for **06 tons per day including 250 ltrs** of drinking water per day. However, payment will be made at actuals and SS to keep record of water received during refit.
 - (f) All OEM/PAC and refitting firms 'H', 'E' and 'L' reps are to embark the ship for pre and post refit trials sailing till satisfactory performance/acceptance of the machinery by the ship.
 - (g) 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.
 - (h) Keel blocks are to be arranged as per latest approved docking plan, and ship is to be dry-docked in both versions.
 - (j) Tug for docking, undocking, berthing and un-berthing are to be provided as and when required from pre- refit trials till refit completion.

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- (k) Pilot is to be provided while entering and leaving dock and harbour.
- (I) 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.
- (m) Berthing and unberthing at wet basin including basin hire charges are to be catered for.
- (n) The refitting yard is to provide transport for refit duration as follows for 100 Km/day or 12 hrs/day whichever is exhausted earlier (The transport usage commences and terminates at the gangway):-
 - (i) Two mini buses (12-14 seater) for ship.
 - (ii) One car for ship.
 - (iii) One car for COA/ CGRPS.
 - (iv) One mini truck to be provided twice a week or as and when required for store collection to the nearest railway station etc.
- (p) Provide temporary lights to ensure illumination at appropriate level.
- (q) Compressed air supply as and when required.
- (r) Refitting firm to extend fax/e-mail facility to COA/ Refit Overseeing Team on as and when required basis.
- (s) AC 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. Three split ACs of adequate capacity to be provided in CO cabin, ward room, dining hall when ship's AC is rendered non operational.
- (t) 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.
- (u) Appropriate refit office for overseeing team with necessary furniture and AC.
- (v) Adequate storage space to be provided to ship during the major hull repair work. Approx store room size 15×15 ft.

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- (w) Shore galley facilities including gas burners and cost of cooking gas to be provided when the ship's galley becomes non-operational.
- (x) At the time of de-ratting/ de-cockroaching, alternate necessary arrangement for the Galley should be provided by the refitting firm.
- (y) The refitting firm to arrange Gas Free Certificate for all Fuel/Avcat/Lube oil tanks prior commencing hot work. For this purpose provision of blowers with hoses and visit of Inspector of Explosives are to be catered for.
- (z) The ship is to carry out de-fueling prior coming in dry-dock. The refitting firm is to provide suitable containers/space for storing the residual fuel. The Ship to collect fuel prior departing from the yard.
- (aa) Sufficient ventilation to be provided when ship's AC becomes non-ops.
- (ab) Yard to provide facilities for DP testing/load testing of Capstan/towing hook / Davits etc.
- 10. PAC Firms. Routines and defect rectification of the equipment are to undertaken in totality and only through OEM/PAC/Authorised reps for defect list serials mentioned at Annexures I.

<u>NOTE</u>: Deviation from the above, if unavoidable, may be considered with prior approval of CGRHQ. However, requests for such deviation should be projected within 15 days of commencement of refit through CGRPS/Overseeing Authority for necessary action.

- 11. **General Discussions.** All technical queries pertaining to the refit of the ship were discussed during RFIC held on 09 May 19 at CGRHQ (NW) and following decisions have been agreed by all concerned for action by refitting firm:-
 - (a) The list of sub-contractors for undertaking repairs on equipment & machinery not mentioned in para 10 are to be submitted to CGRPS/CG Overseeing authority for approval.
 - (b) All welding jobs are to be undertaken by qualified welders duly certified by LRA/IRS / ABS / MMD for HT Steel, MS, SS, Aluminum etc. during the refit.
 - (c) Scope of well-defined work in defects indicating 'To be renewed, To be replaced' include supply of spares and material, fitment, commissioning and trials within quoted amount for that defect. No NAC/AWRF will be provided against such

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defects until otherwise specified/discussed specifically during 'Request For Information Conference' (RFIC).

- (d) The quotation of refitting firm for overhauling of pumps (except equipment mounted pumps and motors) will constitute all work including supply of spares except renewal of impeliers, shafts and casing. Pumps are to be painted as per existing paint scheme by spray paint after overhauling within price agreed during PNC/CNC.
- (e) Overhauling/refitting of all valves includes mandatory replacement of all defective material, gaskets, joints, fasteners, bridge piece and valve seats. In addition, renewal of 25% spindles to be catered against each defect serial where valve overhauling is specified. Painting of valve with 02 coats (one primer and another colour coding) to be carried out.
- (f) Overhauling of Capstan / windlass will include supply of all spares except for gears, shaft, casing.
- (g) Overhauling of lub oil coolers, freshwater cooler, condenser and all other heat exchangers include replacement of 'O' rings and Gaskets/fasteners. Renewal of anodes is mandatory, as and when cooler/ condenser opened and plugging of leaking tubes is permitted up to 10%. Coolers/condenser are to be painted as per existing paint scheme.
- (h) Routines on AC / Refrigeration Plant include replacement of all teflonseating and spindle for all line valves along with painting of compressors, condensers and pumps.
- (j) Cost of removal and refitting of paneling and renewal of lagging and insulation removed during defectation is to be included in the quoted cost. No additional cost for additional degutting and regutting will be admissible.
- (k) All relief/safety valves fitted with pumps and compressors are to be checked for correct operation during overhauling.
- (I) Ship's hull/structure, all welded joints which are accessible and visible are to be checked and survey to be carried out and repairs as per ABS/LRA/IRS recommendation.
- (m) Removal / fitment of pumps / prime mover / Generators include alignment as per procedure along with in way jobs.

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- (n) All in way jobs whether specified or not in CGRHQ (NW) final RFIC remarks are to be undertaken by yard within the quoted price except in cases where the in way job entails removal of heavy machinery for steel renewal.
- (p) The refitting firm is to submit details of sub-contractors to whom work is intended to be offloaded within 15 days of signing the Refit Contract and the same is to be approved/finalized by CGRPS during the pre refit meeting. Request for Information Conference with OEM / PAC firm and sub-contractor of the yards is to be conducted with the reps of CGRPS/overseeing authority and ship staff prior to awarding the contract. Work orders are to be issued within two weeks of refit commencement. If any firm is found technically unsuitable and / or not agreeing with the terms and conditions of Coast Guard, same to be disqualified for undertaking work. CGRPS/Refitting Authority rep to be included in PNC/CNC for AWRF jobs with sub contractors.
- (q) The refitting firm to place order for yard supply items within 15 days from the date of pre refit trials or as mutually agreed between Coast Guard and Yard and forward a copy of supply order to CGRPS / Overseeing Authority.
- (r) All work is to be carried out as per the directives of CGRPS / Overseeing authority based on the approved defect list as confirmed during Request for Information Conference.
- (s) Any hold up in timely completion of refit is to be intimated CGRHQ through COA / CGRPS/Overseeing Authority at least 30 days prior to scheduled completion of refit with revised estimated date of completion and in addition fortnightly progress report of refit is to be forwarded by COA along with refit expenditure on work package and AWRFs.
- (t) Overhauling of motors and their control panels includes following:-
 - (i) Renewal of bearings.
 - (ii) Cleaning of stator/rotor and varnishing.
 - (iii) Internal and external repairing of motor yoke.
 - (iv) Examination of rotor, impeller, shaft, bearing housing and impeller non-driven end (in case of ventilation motors) for flaws, cracks and corrosion. Same to be repaired if found defective.
 - (v) Removal and renewal of bearing seals and gasket.
 - (vi) Repair of terminal box.
 - (vii) Replacement of defective nut and bolts.
 - (viii) Overhauling of EM brake assembly, associated gear and resistance bar control unit, in case of windlass and capstan.
 - (ix) External painting of motor as per paint scheme.

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(x) Trials of motors in totality post installation.

- (xi) Overhauling of control panel fitted with delta starter includes renewal of contactor kit (to be supplied by yard) irrespective of its condition. Overhauling of control panels will include renewal of terminal strips/connectors.
- (u) All continuous running machinery contactor kits are to be renewed. Contactor kits will be yard supply.
- (v) The routines on automatic and semi-automatic changeover switch shall include cleaning of dirt and dust by soft brush and vacuum cleaner. Examine all contacts for adjustment and cleanliness.
- (w) Ensure contacts are free to operate and anti-shock devices (where fitted) are not restricting the movement of contactors. Examine for loose connection, loose securing nuts and bolts, sign of overheating, condensation etc. and visually check/inspect 03 main contacts closed together and all open on operation of each contact moulding. They must not foul on side of moulding. Check the contactor that throw off springs have not lost their tension and pole spaces are free from foreign matters. Carry out insulation resistance test of changeover switches and associated controls (Minimum acceptable value-1M ohm). Carry out functional test on completion. Ensure that flexible earthing strip is in good condition and making good contact.

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

- (x) Overhauling of PDB, starter panel of equipment/motors will include renewal of defective indication lamps, lamp covers, fuses, fuse bases, fuse carrier, connectors, defective wiring and locking system and calibration of Overload Relay (OLR).
- (y) Calibration/test certification would be carried out by yard through authorised agencies and calibration/test certificates issued for calibration of mechanical gauges, testing of life saving equipment within the price agreed during PNC/CNC.
- 12. <u>UTG Report</u>. After the docking, yard to undertake ultrasonic gauging and report to be plotted on shell expansion drawing. Photographs of underwater fittings to be forwarded to CGRHQ/Overseeing Authority and ship for records. Ultrasonic surveys (UTG points as per RFIC remarks on defect list) wherever applicable should be carried out immediately on commencement of refit/Docking (for underwater hull) and report is to be rendered to the Overseeing Authority with recommendations at the earliest to enable assessment of work package. The report of underwater scanning (if applicable) is to be prepared and report

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/recommendation on same is to be submitted in shortest possible time to finalise areas requiring steel renewal. Scanning is to be undertaken through class approved agency.

13. Spares Management

- (a) The list of exact requirement of spares for routines/defect rectification to be rendered to CGRPS/ Ship by the yard within 02 days from the date of opening of equipment/machinery.
- (b) The spares required for any equipment will be procured by the refitting yard from the authorised dealer against NACs. The spares for equipment for which authorised agencies are not available would be procured on competitive basis on approval of CGRPS/overseeing authority. The spares procured through the refitting yard shipyard against NACs would be reimbursed at actuals plus overheads as per DPM in vogue. Taxes, duties etc. will be paid on production of documents. Procurement of spares through refitting yard will be authorised by CGRPS/Overseeing authority after ascertaining availability of sanction. The detailed procedure for procurement of spares against NAC from refit account is to be undertaken as per policy in vogue.
- (c) Unless, otherwise specified in defect List/Request For Information Conference minutes, spares for refit will be CG supply.

14. Trials

- (a) The refitting Yard to conduct pre-refit trials along with reps of nominated OEM/PAC firms before taking over the ship for refit. Yard is to conduct sea trials post successful completion of Harbour/Basin Trials.
- (b) DA's load trials are to be carried out on completion of major routines on engines and alternators with load tank. All DA's are to be proved on parallel operation also. However, no load tank trial is to be conducted, if no major repair/routines have been carried out.
- (c) The refitting yard is to provide Test and trials reports as per format. Ship is to hand over copy of format for test and trial reports.
- (d) On completion of refit, the refitting yard is to conduct Harbour/Basin Trials for all machinery and defects, if any, are to be liquidated prior to Sea Trials.

M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	RTO (Refit)	CO Rajratan	CGDHQ-1
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- 15. <u>Supply of Materials by Yard</u>. Following materials are considered as yard supply materials and the cost of the same would be deemed to have been included in the quotation for the respective defect list serials: -
 - (a) Lagging material for renewal of laggings.
 - (b) Joints for pipes & manhole covers.
 - (c) Rubber Coaming for doors and hatches.
 - (d) Nuts, Bolts, Washers and fasteners wherever required (Material –as per original fit).
 - (e) Material for all wood repair jobs.
 - (f) Pipes, flanges and fittings for pipe renewal jobs.
 - (g) Bearings for pumps and motors (except for pumps fitted on Main Engines and Gear Boxes).
 - (h) Gland packing including rudder gland packing & stabilizer gland packing.
 - (j) Material for furniture repair jobs (wooden as well as metal).
 - (k) Sacrificial anodes except for water jet system wherever renewal envisaged.
 - (I) Manufacture of shaft key during overhauling of pumps if required.
 - (m) Steel for Steel renewal jobs along with class certificate.
 - (n) Material for cleaning electrical contacts, electrical equipment and their accessories, which are to be overhauled.
 - (p) Tiles, underlay, chock fast, araldite, putties, etc.
 - (q) Industrial gases for testing/trials of systems, like Nitrogen for A/C /Ref plant pressure testing.
 - (r) Electrical items like Switch, plugs, cable, pin, fuse, terminal box, contacts, washers, nuts, split pins, wood polish, putties, teflon tape, seal tight, hold tight latches, blanks and flanges etc.
 - (s) Spares for batteries, water cooler, refrigerator, deep freezer, Photocopier machine (except drum), washing machine, air horn, motor horn, mixer, Iron box, TV, VCR/DVD, domestic fan, etc.
 - (t) All materials as indicated in remarks against individual defect serials.
- 16. **Dry Docking.** Dry docking of the ship to be done in both versions or as per latest approved version of docking plan within the final amount agreed during the CNC. The ship should generally be docked within four weeks of commencement of refit and under water hull survey and growth of underwater work package if any, be finalised. The entire underwater hull including areas covered by keel blocks are to be painted as per the approved paint scheme indicated in main defect list.

17. **Paints**.

(a) The refitting firm is to include supply of paints as per the scope of work and Request For Information Conference (RFIC) minutes. Representative of paint manufacturer to be involved for the supervision during surface preparation and

Chowgule		Shipyard	Engg Rajratan A	Electrical Rajratan	Hull Rajratan	(Srt) Rep		Rajratan	CGDHQ-1
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painting. The refitting yard to obtain back to back performance guarantee of 60 months from paint manufacturer and stand guarantee against failure. The failure is defined as appearance of visible macroscopic fouling or detachment of whole or part of film, amounting to 10% (ten percent) or more of the total surface area, within 36 months, from the date of final application of paint provided:-

- (i) Percentage of visible macroscopic fouling be established though Data plan (provided by paint manufacturer rep at site, in consultation with repair yard and CGRPS/ CG nominated rep).
- (ii) Failure of paint is not due to external cause like bacterial attack, mechanical damage, welding, heating, fairing or cleaning during guarantee period (in service).
- (iii) Fitted ICCP (Impressed Current Cathodic Protection) system or equivalent is working satisfactorily during guarantee period.
- (b) The paints are to be procured only from ICG authorised paint manufacturers/ suppliers. To maintain uniformity, complete quantities of paints should be procured from one of these firms only. **Paint used by this ship is of M/s Akzo Noble make.**
- (c) The guarantee towards painted surface is as follows:-
 - (i) The paint is to be procured from manufacturer who will agree to give guarantee towards painted surface in consonance with the "Product Performance Guarantee" (PPG) placed at Annexure-III to this minutes. No deviation from PPG placed at Annexure-III will be accepted.
 - (ii) The refitting yard will also to ensure that a confirmatory certificate from the site supervisor of the paint manufacturer is obtained and submit the same with second stage bill. In case of any objection recorded by the supervisor at site, the overseeing authority's decision would be final which shall be recorded on the confirmatory certificate.
 - *Note. Paint failure to be defined as visible microbiological growth (i.e. fouling, barnacles weeds etc.) visible corrosion marks, peeling and blistering of paint on underwater surface.
- (d) <u>Touch Up Paint Scheme</u>. The refit yard to cater for surface preparation (grit blasting or any other method advised by CGRPT/ class surveyor) of 30 % area and

M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	RTO (Refit)	CO Rajratan	DTO CGDHQ-1
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application of all inner coats of paint in the 30 % area followed by application of one final coat on the entire area.

- 18. <u>Disclaimer</u>. Name of any firm/agency/supplier other than OEM/PAC as mentioned in para 10 above is advisory/matter of reference and not binding on yard. The status of OEM/PAC firm as mentioned para 10 will remain unchanged.
- 19. <u>Noise and Vibration Trials</u>. Noise Level Measurement of the ship are to be undertaken as part of refit. The recommendations/information are to be utilised for undertaking routines/repairs on ship's equipment/fittings. The Noise and Vibration trials are also to be undertaken during pre-refit trials and also on completion of the refit as part of post refit trials. The vibration measurement of major machinery (Main Engines, DAs, Gear Boxes, Pumps Compressors, etc.) are to include frequency analysis in addition to all amplitude measurements in horizontal, vertical and axial directions.
- 20. **Entry of AIAMC firms during Refit duration.** Yard will not have any objection on working of reps of AIAMC contractor/ other local traders whose jobs are not related to refit package onboard ship during the period of refit and the yard service so rendered is to be absorbed with no extra cost. Yard will allow the reps of firms having AIAMC with ICG during the refit to work in their premises and will assist ship staff to arrange necessary security approvals/ gate pass etc. ICG will have the right to delete the work package for equipment for which the AIAMC has been under consideration at the time of issuing RFP and finalized later.
- 21. **Association of Surveyor.** ABS/IRS/LRA surveyor is to be associated, wherever applicable, for survey of hull / all steel renewal, shafting, Main Engines, Gear boxes and other shaft sub assembly jobs as listed below. Yard's quotation is to include surveyor's fees also.
 - (a) Survey of hull externally including decks, side shell and bottom.
 - (b) Complete survey of hull internally including tanks, cofferdams, longitudinal/ transverse frames, other structural members, void spaces, bilge spaces, watertight/non-watertight bulkhead.
 - (c) Review of hull gauging.
 - (d) Witnessing of air/hydro tests of all fresh water, ballast, fuel oil and lube oil tanks.
 - (e) Examination of water jet inlet ducts, shaft protection tubes and transom flanges renewal etc.
 - (f) Ranging and examination of Anchor and Chain cables.

M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	RTO (Refit)	CO Rajratan	DTO CGDHQ-1
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- (g) Examination of chain locker, hawse pipes, chain stoppers with testing of pumping arrangement of chain locker.
- (h) Examination of watertight doors and hatches for watertight integrity.
- (j) Examination of all openings in shell including overboard discharges, underwater valve openings etc., dry space, cofferdams, tanks, plating and framing, bilging, draining, sounding, venting and pumping.
- (k) Load testing of all lifting appliances and deck machinery for running and static load.
- (l) Only class approved and ASNT qualified USG surveyors are to be employed by yard and the same to be verified by CG Overseeing authority.
- 22. <u>Terms and Conditions.</u> In addition to above, following additional terms and conditions are to be accepted by all the refitting yards:-
 - (a) All defects/jobs marked in the defect list as DO and as agreed whether quoted or not are to be undertaken by the shipyard under this contract within cost agreed during the CNC.
 - (b) The refitting firm does not have privilege of offloading the 'Complete Refit Work Package' to a third party. In addition, shipyard is to furnish details of work load of refit of Coast Guard Ships during scheduled period of refit of ICGS Rajratan and the same should not exceed the capacity indicated in the Registration Certificate issued by Coast Guard Headquarters.
 - (c) If refitting firm fails to settle all payments of CG nominated PAC firms pertaining to this refit within 45 days of refit completion, CG holds the right to settle the payment directly to PAC firm from the refit sanction against work completion certificate authenticated by CG rep.
 - (d) Shipyard is to permit the vendors registered with Coast Guard authorities for carrying out jobs against work order issued by RHQ/ DHQ/ Ship under DFP.

23. Conclusion

(a) The scope of work of main defect list has been discussed in detail and all technical aspects have been clarified. The refitting firm's reps are to quote for complete work package including Main Defect List and scope of work as elaborated during RFIC. Yard is to ensure placing of requisite counter weights as and when major sub assemblies/ equipment are removed.

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- (b) Shipyards participating in tendering were advised to consult PAC firms for RFIC remarks (specified in Main Defect list) prior submission of bids for realistic charges of PAC firms towards undertaking defect list serials to avert any ambiguity at later stage.
- All the members have understood the work package, Minutes of RFIC and there are no further queries/clarifications. Clarifications sought by the refitting yards have been cleared in RFIC and same mentioned against each defect list serials in RFIC remarks column.

Further, the scope of work of Main Defect List has been discussed and all (d) technical aspects have been clarified in detail with CSO (Tech) in chair along with RTO (Refit), DTO/ CGDHO-1, Representative of CGRPT (Surat), Commanding Officer, all concerned department in-charges of ICGS Rajratan and representative of firms. All participants of the RFIC have agreed and confirmed that all points have been covered and included in the RFIC minutes.

(Mr. Pramod Patil) M/s Krasny Defence Technologies,

Mumbai

(Vinay Kumar) Adh (QA)

SO (Hull)

Rajratan

(J Singh) PSE (SW)

SSO(Refit) CGRHQ(NW) (Mr. Sunil Jain)

M/s Chowgule & Company Pvt Ltd

Goa

(Lakhvir/Singh)

SE (P)

Rajratan

SO (Elect)

(kk Kadam)

DY Comdt RTO (Refit)

Rajratan CGRHQ (NW)

(Mr.\Sr\nu) (Hardeep Singh)

M/s Shoft Shipyard SE (ER) SO(Enga) Pvt Ltd Rajratan Bharuch

(Samjay Kumar)

SE (ER) ASSO (Refit)

CGRHQ(NW)

(MR Singh) Comat (JG)

CO

(Raibir Dalal) Commandant

(S Gìreesh) PSÉ (SW)

CGRPT(Srt)

DTO

Rep

CGDHQ-1

(A Amarender Reddy) Deputy Inspector General CSO (Tech) CGRHQ(NW)

M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	RTO (Refit)	CO Rajratan	. DTO CGDHQ-1
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	ICGS RAJRATAN NORMAL REFIT (NR-1) MAIN DEFECT LIST- HULL	
DL NO	DESCRIPTION	FINAL RFIC REMARKS
YARD SERVICES	RVICES	
HA 1001	Pre and post refit trials to be carried out to assess the performance and status of all equipment and fittings. All PAC, yard reps from Hull, Engg, Electrical departments to embark onboard	DO. Yard to undertake pre and post refit trails as per sl (a) para 14 of RFIC minutes.
HA 1002	TRANSPORT The refitting yard is to provide transport for refit duration as follows for 100 Km/day or 12 hrs/day whichever is exhausted earlier (The transport usage commences and terminates at the gangway):- (i) Two mini buses (12-14 seater) for ship. (ii) One car for ship. (iii) One car for COA/ CGRPS. (iv) One mini truck to be provided twice a week or as and when required for store collection to the nearest railway station etc.	DO.
HA 1003	ACCOMMODATION The refitting yard is to provide accommodation for following crew as per the scale of accommodation indicated below: (i) Officers. Cabin accommodation for 05 officers with following Amenities: (aa) One single occupancy room with A/C (ab) 02 double occupancy rooms officers with A/C (ac) Attached toilet with bathroom. (ad) Basic room curtain and TV. (ae) Table and chairs. (af) Basic linen viz. mattress, bed sheets, pillow, covers, blankets to be provided. (ag) Dinning space and cooking area.	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.

RTO (Refit) DTO CGDHQ-1 ST CO Rajratan CGRPT (Srt) Rep SO I/C Hull Rajratan SO I/C Electrical Rajratan SO 1/C Engg Rajratan M/s Shoft Shipyard M/s Krasny M/s Chowgute

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Max	M/s Chowgule	HA1004	UND		
135	ule		ERWA		
Red	M/s Krasny	Ship is to be be entered complete wit	UNDERWATER WORK PACKAGE	facilities :- (iii) <u>Enroll</u> Enrolled Pers	(ii) <u>Subor</u>
Di	M/s Shoft Shipyard	Ship is to be dry docked in version I abe entered in docking form. Three complete with all data to be provided.	PACKAGE	s:- (aa) (ab) (ac) (ad) (ae) (ae) covers (af) Enrolled Personnel. d Personnel to be p (aa) circula (ab) bed sl (ac) (ad) TV, c unifor (ae) (af) covers	Subordinate Officer
Jan S	SO I/C Engg Rajratan	in version I a form. Three be provided	,	(aa) 04 nos. double be (ab) Attached toilet 8 (ac) Basic room curtai (ad) Table and chairs. (ae) Basic linen viz. I covers, blankets to be pe (af) Common dinning onnel. Dormitory type a be provided. The scale (aa) 28 in nos. single circulator. (ab) Each single bed, bed sheet, pillow cover. (ac) Six W/C and Six be (ad) Dormitory room to TV, curtains and day to day (ae) Dinning space are (af) Basic linen viz. I covers, blankets to be p	
38	SO I/C Electrical Rajratan	and II and no copies of o		(aa) 04 nos. double bedrooms with air (ab) Attached toilet & bathroom. (ac) Basic room curtain and TV. (ad) Table and chairs. (ae) Basic linen viz. mattress, bed s covers, blankets to be provided. (af) Common dinning space with TV. annel. Dormitory type accommodation be provided. The scale of accommodation be provided. The scale of accommodation be provided. The scale bed/cots. Roon circulator. (ab) Each single bed/cot to be provided sheet, pillow cover. (ac) Six W/C and Six bathrooms. (ac) Six W/C and Six bathrooms. (ad) Dormitory room to have basic up TV, curtains and easy chairs and wuniforms and day to days items. (ae) Dinning space and Cooking area (af) Basic linen viz. mattress, bed s covers, blankets to be provided.	Cabin accommodation for 08
Strate .	SO I/C Hull Rajratan	ecessary inform duly approved	-	facilities: (aa) 04 nos. double bedrooms with air cooler. (ab) Attached toilet & bathroom. (ac) Basic room curtain and TV. (ad) Table and chairs. (ae) Basic linen viz. mattress, bed sheets, pillow, pillovers, blankets to be provided. (af) Common dinning space with TV. (iii) Enrolled Personnel. Dormitory type accommodation with curtains for Enrolled Personnel to be provided. The scale of accommodation is as follows: (aa) 28 in nos. single bed/cots. Rooms to have air coolerculator. (ab) Each single bed/cot to be provided with mattre bed sheet, pillow cover. (ac) Six W/C and Six bathrooms. (ad) Dormitory room to have basic upholstery like teaporty, curtains and day to days items. (ae) Dinning space and Cooking area. (af) Basic linen viz. mattress, bed sheets, pillow, pillocovers, blankets to be provided.	n for 08 SOs
ath	CGRPT (Srt) Rep	Ship is to be dry docked in version I and II and necessary information/ details to be entered in docking form. Three copies of duly approved docking report complete with all data to be provided.		Attached toilet & bathroom. Basic room curtain and TV. Table and chairs. Basic linen viz. mattress, bed sheets, pillow, pillow, blankets to be provided. Common dinning space with TV. Dormitory type accommodation with curtains for 28 rovided. The scale of accommodation is as follows: -28 in nos. single bed/cots. Rooms to have air cooler tor. Each single bed/cot to be provided with mattress, neet, pillow cover. Six W/C and Six bathrooms. Dormitory room to have basic upholstery like teapoy, urtains and easy chairs and wardrobe for keeping ms and day to days items. Dinning space and Cooking area. Basic linen viz. mattress, bed sheets, pillow, pillow is bathrooms, blankets to be provided.	SOs with following
7	CO Rajratan	DO both version as per SI (h) of I SS to provide la docking report necessary document of the control of the con			
100	DTO CGDHQ-1	n docking aga Para 9 of RFI test docking of to be provi ments to be are to be	The second secon		
R	RTO (Refit)	inst yard services C minutes. C minutes. plan. Six copies of ided by ship. All attached with the provided by the			

HA 1005		DO. Material yard supply.
	followed by cleaning and thorough removal of sea growth with brushes from underwater hull and fittings including water jet, sea chest & grating to be carried out immediately after dry docking. (Underwater area: 320 sqm, boot top area:	
	100 sqm. Yard to cater for staging and crane facility). Then clean with fresh water thoroughly.	
HA 1006	After cleaning, examine the whole under water area paying particular attention	DO survey of underwater hull including
	to hull plate in the vicinity of water jet tube, zinc protectors, sea chest and all other fastenings areas for signs of corrosion defects and damage. Defect	appendages jointly by class surveyor and CGRPT, Class as per serial 21 of RFIC minutes.
	observed to be rectified. Class surveyor to be associated for inspections.	
HA 1007	Carry out UTG survey of underwater area paying particular attention to E/R,	DO. Yard to cater for robotic scanning of
	tanks, coffer dams, WB tanks, sludge tank and jet tube areas and sea chests	underwater including boot top area and 100
	immediately on commencement of refit/docking (for under water hull) and	UTG points, 02 tons of steel renewal of the
•	report is to be rendered at the earliest to enable assessment of work package.	plates/ stiffeners thinned down more than
	Those plates thinned down more than 10% to be cropped and renewed. Report	20% or as per class recommendations.
	of UTG survey to be given to ship and CGRPS in shell expansion drawing and	Payment for steel renewal on pro rata basis.
	tabular form along with photographs of underwater fittings.	Material yard supply. Steel Grade: AH-36. All in
		way job included. SS to provide shell
		expansion drawing. No underwater
		photography by yard.
HA 1008	Photography of underwater hull fitting/ damages appendages, fittings, openings	Delete. SS
	and major repair/renewal works etc. to be undertaken and 04 sets of album to	
	be submitted to ship.	-

s gule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Huli Rajratan	CGRPT (Srt) Rep	CO Rajratan	ото серио-1	RTO (Refit)
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	HA 1012 Remove, Cla	HA 1011 Remove, exception cleaning and	HA 1010 Anti Fouling docking. Pa	HA 1009 Area required paint damage letter for entire rep for entire AKZO NOBLE)
Main engine-03 nos DA - 03 nos Fire & GS Pump - 01 no Bilge & GS pump-01 no AC Condenser pump - 01 no RO plant - 01 no Magazine flooding valve - 01 no Oily water separator - 01 no	Remove, Clean and refit all Sea Chest grating (Qty-15 nos) (a) Water jet-03 nos	Remove, examine and overhaul all u/w storm valves. Carry out chemical cleaning and pressure testing after over hauling (1.5 times of WP).	Anti Fouling black on entire boot top area (100 sqm) to be applied during dry docking. Paint Yard Supply. (make: M/s AKZO NOBLE)	U/W hull to be vacuum/ grit blasted to SA 2.5 on completion of U/W inspection. Area required to be blasted be decided according to sea growth, fouling, blisters, paint damage and peel off area. Full paint to be carried out as per CGHQ policy letter for entire under water hull and boot top areas including U/W appendages. Yard to cater for full scheme painting by airless spray under supervision of paint rep for entire under water hull area (320sqm). Paint Yard Supply. (make: M/s AKZO NOBLE)
Grating size:- (a) Water jet-1200 x 504 mm aprox (b) Main engine-414 x 314mm approx (c) DA - 110 mm Dia (d) Fire & GS Pump - 110 mm Dia (e) Bilge & GS pump-110 mm Dia (f) AC Condenser pump - 90 mm Dia (g) RO plant - 60 mm Dia (h) Magazine flooding valve - 275 mm Dia (j) Oily water separator - 100 mm Dia Paint as per U/W paint scheme. Paint yard supply.	DO. All consumables including fasteners yard supply Renewal if any against AW/RF	DO. Yard to cater for 07 Nos Valves, Size-50mm. Test pressure 05 bar	Delete. Covered in HA 1009.	DO. Yard to cater for touch up paint scheme of M/s Akzo Noble (SPC scheme) as per existing paint scheme including boot top area. Paint yard supply. Application of Paint under supervision of paint manufacturer rep. Record of DFT to be submitted. Total under water area including boot top area is 410M ² .

M/s //Chowgule M/s Krasny M/s Shoft Shipyard SO I/C Engg Rajratan SO I/C Electrical Rajratan SO I/C Hull Rajratan CGRPT (Srt) Rep CO Rajratan DTO CGDHQ-1 RTO (Refit)

HA 1013	Examine sacrificial anodes fitted in all sea chests and renew. Anodes – yard Supply	DO. Renew all anodes. Yard to cater for renewal of 12 Nos sea chest anodes. Specifications of anodes: Candle type zinc anodes. Size - 25 mm X 125 mm.
HA 1014	Di-electric shield to be examined for wear and damaged layer of resin/araldite to be re-laid as per specification.	Delete. Covered in AMC.
HB 1015	Draught markings to be scraped to bare metal, thereafter cleaned and painted. Total 03 places either side. Apply white paint (U/W) and black paint (above W/L).	Delete, covered under HA-1009 and HA-1020
HB 1016	02 in no. U/W storm valves (size-65 NB) of galley to be overhauled. Pressure testing after overhauling (1.5 times of WP) to be carried out. Pressure test certificate to be submitted to ship. Remove, clean and refit all sea chest gratings.	Delete, covered under SI HA-1011.
STEEL DE	STEEL DECKS (EXPOSED)	
HA 1017	Carry out UTG survey of exposed steel deck area and reading to be taken at 300 points. Areas below portable fittings to be inspected for corrosion and paint	DO for DL serials HA-1017 to HA-1019.
	failure. Obscured structure to be removed and areas hidden behind to be inspected. All structures and portable fittings are to be refitted after inspection.	Yard to cater for survey, 300 UTG points (for ships sides and decks) and one ton steel
	Detailed report of class surveyor of assessed extent of corrosion/damage along with diagram to be forwarded to SS/ CGRPS in quadruplicate. Specific defects	renewal. Joint survey by class surveyor, SS and CGRPT.
	observed by above examination to be projected. Plates found thinned below 25 % or as recommended by surveyor to be renewed after UTG evaluation.	Touch up paint scheme (M/s Akzo Noble) to be undertaken by the yard. Total Area, steel
HA 1018	Bi-metallic joint on weather deck to super structure (AI) to be examined paying particular attention to joint where failure of structure may occur. Specific defects observed to be reported to ship.	deck -225 Sq mtrs. Paint CG supply. Material yard supply.
HA 1019	Examine structure paying particular attention to the deck plate. Inspect area below portable fittings for corrosion and paint failure. Complete deck to be UTG surveyed. Renew plating as required/recommended by surveyor/ CGRPS. Scrap,	Renewal of bimetallic joint if any, under AWRF.

M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	CO Rajratan	CGDHQ-1	RTO (Refit)	 ₽
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HA 1020 supervision of Paint rep and SS. Paint thickness report to be rendered to ship. number on sides as well as on stern to be painted. Painting to be done under on port side and "INDIAN COAST GUARD" in English on starboard side to be Blue strips marking by airless spray painting. "भारतीयतटरक्षक" lettering in Hindi Full coat of ship side to be applied on entire surface (approx area: 300 sqm). bridge glasses, canvas covers, RIB boats, electrical cables and equipment while deck (area: 350sqm). Yard to cover all scuttles/ port holes, ventilation openings, Paint yard supply (make: M/s AKZO NOBLE) inscribed. Ship's name (Red paint) in Hindi & English on both sides and pennant thickness report to be rendered to ship. Paint yard supply (make: M/s AKZO painting. Painting to be done under supervision of rep of paint manufacturer to inspect, monitor and obtain required paint thickness during painting. Paint blast the deck to bare metal. Full paint scheme of deck to be applied on entire

03 RU lockers from foxle and Q-Deck are required to be removed and refitted for UTG survey/ inspection.

Size of lockers: 3 X 2 X 2 feet Approx

DO. Touch up paint scheme. Scope includes painting of draft markings also.

Total area -205 Sq. Mtrs.

"INDIAN COAST GUARD" lettering in English on port side and "अगरतीय तटरक्षक" in Hindi on stbd side to be inscribed. Ship's name (Blue colour paint RAL code 5026, Pearl Night Blue) in Hindi & English on both sides and pennant number on sides as well as on stern to be painted. Blue band markings to be painted on both sides. Drawing will be provided by SS. Paint CG Supply. Material yard supply.

SUPER STRUCTURE AREA EXPOSED (ALUMINIUM) AND ALUMINIUM EXPOSED DECK / BULKHEAD Aluminum Structures are not to be blasted / hard tools not to be used for scraping or chipping.

NOTE: Entire structure to be examined paying particular attentions to all areas (including deterioration. Doubtful areas where obscured structure, portable fittings may be decks, Emergency DA compartment, bridge area and boundaries for corrosion and ships side (bimetallic joint) for paint failure, structural damage etc. Check flag exposed decks and bulkheads) where aberration is possible. Check bulkhead and removed for inspection.

DO. Survey and one final coat of paint on super structure including main mast and aluminium decks. Area of Super Structure 660 Sq Mtrs and area of aluminum deck 125 Sq Mtrs. Paint CG supply. Structural repairs if any under AWRF.

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	Thed	M/s Krasny
	Q;	M/s Shoft Shipyard
	JE .	SO I/C Engg Rajratan
	2 L	SO I/C Electrical Rajratan
	A. C.	SO I/C Hull Rajratan
	DAN.	CGRPT (Srt) Rep
``.	Jan J	CO Rajratan
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	X	RTO (Refit)

HA 1022	Super structure area including main mast to be washed with fresh water (announce)	V Dolotod CC
	area 550 sqm including fittings) and to be painted with final coat. (Paint scheme attached) Yard to cover all scuttles/ nort holes, ventilation openings, bridge	
	glasses, canvas covers, RIB boats, electrical cables and equipment, etc while	υ α
	painting. Painting to be done under supervision of rep of paint manufacturer &	·
	Ship staff. Paint thickness report to be rendered to ship. Paint yard supply	X
	(Make: M/s AKZO NOBEL)	
GENERA	GENERAL COMPARTMENTS DECK NO 2, 1 AND ABOVE/ACCOMMODATION A	AREA/ LOBBIES AND PASSAGES, ELECTRICAL
STORE,	AGE STORE	
HA 1023	Lagging/ paneling or deck covering to be removed for inspection at various places	
	covering is peeled cracked blistered lost adherence or structure is excessively	k class surveyor and CGKPT. Yard to cater for vi renewal of 15 So mtr MEMB lagging to
	corroded clean to bare metal dry the surface and recoat as per paint scheme.	facilitate inspection. All in-way jobs included
	Thickness to be checked and any specific defect be projected. Lagging/ paneling	
	to be relitted after hispertabil.	
GALLEY	GALLEY AND ASSOCIATED FITTINGS	The state of the s
HA 1024	HA 1024 02 Nos galley exhaust filters to be renewed as per sample. Mat- SS wire mesh	h DO. Material yard supply.
	with SS frames, size- $1.5 \times 1.5 \text{ ft}$.	
ACCOMI	ACCOMMODATION, LOBBIES AND PASSAGES	
HA 1025		e Delete. Covered in HA-1023.
	corrosion is likely to occur. Check the thickness, assess condition of lower portion	
-	of bulkheads boundaries and structures obscured by fittings. Specific defects if	¥
	any to be projected to undertake in AWRF.	
MACHIN	MACHINERY COMPARTMENTS (FWD AND AFT E/R, W/J COMPARTMENT)	
HA 1026		y DO. Yard to cater for 200 UTG points and
	for internal hull structure and fittings along with class surveyor. Inspect the	
	frames, girders and stiffeners. Remove flaked paint film to bare metal and area	
	where paint failure occurred. Carry out UTG at critical areas. Renew as per recommendation of class surveyor. Any damage/defect found to be noted and	
	salveyor. Any damage/defect found to be noted	and
M/s	M/s Krasny M/s Shoft SO I/C SO I/C SO I/C CGRPT (St)	CO DTO RTO (Refit)

RTO (Refit)	M
рто серно-1	Jan.
CO Rajratan	
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M/s Shoft Shipyard	3
M/s Krasny	D. A.
M/s Chowgule	STAGEN.

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MARSH MARSH	M/s Chowguie	HA 1032	НВ 1031	HA 1030	ватнгос на 1029	BOATSW/ HA 1028	ELECTRIO HA 1027
Prod	M/s Krasny	Renew all taps	05 in no con wood.	Examine structure no attention to deck bour side scuttles. Portable are to be removed for to be removed at successful storm valve and property to be reported to ship to be reported to ship	BATHROOMS/ WCS HA 1029 Remove all scuppers, drain pipes of ba Refit after pressure testing and paintin Length and size of pipelines as follows: Size (a) 50 mm (b) 40 mm (c) 32 mm (d) 65 mm 15 m	BOATSWAIN STORE HA 1028 Scrap, clean and remove all flaked paint films to paint failure occurred. Apply paint as per scheme.	projected for repair. Carry out one final capprox area 510 sqm) Paint yard supple ELECTRICAL STORE /BATTERY COMPARTMENT HA 1027 Examine all bulk heads, decks and bound area.
D.	M/s Shoft Shipyard	and	nmode uproo	structure not co to deck boundar tles. Portable or removed for exa noved at success n valve and pipes orted to ship.	all scuppers, drainer pressure testing and size of pipeling and 50 mm (a) 50 mm (b) 40 mm (c) 32 mm (d) 65 mm	and remove occurred. App	repair. Carn 510 sqm) Pa BATTERY C bulk heads, d
4 12 S	SO I/C Engg Rajrakan	isolating stop α	ted from bas	overed by la les lower are semi portabl amination of a sive examination of a sive examination of a	n pipes of bath g and painting. es as follows: Length 50 mtr 20 mtr 10 mtr	all flaked pa)y paint as p	out one fin aint yard sulecks and book
7	SO I/C Electrical Rajratan	cocks in Officers,	se to be fitter	gging or decay of bulkhea of bulkhea le fittings and le fittings and structure. Diffition. Strip exher seating a	th rooms and g. Defects if a g. Defects if a g. The strain of the strain		al coat on er pply. (make: :NT :undaries. Clea
J. Ser	SO I/C Hull Rajratan	ers, senior sailor's	05 in no commode uprooted from base to be fitted as per existing sample. wood.	Examine structure not covered by lagging or deck covering, paying partial attention to deck boundaries lower area of bulkhead and ship side's areas are side scuttles. Portable or semi portable fittings and soil pipe trunk access pare to be removed for examination of structure. Different section of pipelines to be removed at successive examination. Strip examine and pressure test ones storm valve and pipes, renew leather seating and rubber lips. Specific deto be reported to ship.	Remove all scuppers, drain pipes of bath rooms and toilets. Clean chemically Refit after pressure testing and painting. Defects if any to be projected (Mat: Length and size of pipelines as follows: Size (a) 50 mm (b) 40 mm (c) 32 mm (d) 65 mm 15 mtr (d) 65 mm 15 mtr (Soil/ Black water pipe)	be bare metal and area w	projected for repair. Carry out one final coat on entire bilge area as approx area 510 sqm) Paint yard supply. (make: M/s AKZO NOBLE) AL STORE /BATTERY COMPARTMENT Examine all bulk heads, decks and boundaries. Clean, scrap and paint area.
O par	CGRPT (Srt) Rep	ilor's and junior	ng sample. Mat-	Examine structure not covered by lagging or deck covering, paying particular attention to deck boundaries lower area of bulkhead and ship side's areas around side scuttles. Portable or semi portable fittings and soil pipe trunk access plates are to be removed for examination of structure. Different section of pipelines area to be removed at successive examination. Strip examine and pressure test 05 in nos storm valve and pipes, renew leather seating and rubber lips. Specific defects to be reported to ship.	Remove all scuppers, drain pipes of bath rooms and toilets. Clean chemically and Refit after pressure testing and painting. Defects if any to be projected (Mat: MS). Length and size of pipelines as follows: Size Length (a) 50 mm 50 mtr (b) 40 mm 20 mtr (c) 32 mm 10 mtr (d) 65 mm 15 mtr (Soil/ Black water pipe)	and area where	projected for repair. Carry out one final coat on entire bilge area as per scheme (approx area 510 sqm) Paint yard supply. (make: M/s AKZO NOBLE) AL STORE /BATTERY COMPARTMENT Examine all bulk heads, decks and boundaries. Clean, scrap and paint the rusted area.
	CO Rajratan	Delete.	DO. Material included.	DO survey by valves covered against AWRF.	DO 50% of pifor sl(d). Mate Inway jobs in AWRF.	DO. Material yard Area 50 Sq Mtr.	Deleted. SS
\$ 1 m	DTO CGDHQ-1		yard supply.	y class surveyor only. d in HA-1011. Renewal	pes for sl (a) t rial including p cluded. Renewa	ard supply.	
A	RTO (Refit)		supply. All in-way jobs	yor only. Storm Renewal if any	DO 50% of pipes for sl (a) to (c) and 100% for sl(d). Material including paint yard supply. Inway jobs included. Renewal if any against AWRF.	Paint CG supply.	

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	שמוועו ש טמניוו טעוווי	-
HB 1033	Renew all wooden gratings of Officer's and Sailor's bathroom as per sample. Area total – 50 sq ft Mat- wood.	Delete.
VOID SPACES	ACES	
HA 1034	Open and thoroughly clean 03 in nos, void spaces and carry out survey with class	DO survey by class surveyor and touch up
	surveyor for state of material and paint. Examine the structure paying particular	paint scheme. Paint CG supply. Total area of
	attention to the junction of framing with vertical plating, outer bottom plating and	three void spaces - 100 Sq. Mtr.
	especially area not readily visible such as the back of framing and stiffeners.	
	Surveyor report to be submitted. Specific defects after surveyor recommendation	
	to be projected. Renew four cover gaskets of manholes.	
DIRTY V	DIRTY WATER TANK AND DIRTY OIL TANK	
Note:	Note: Yard to issue gas free certificate from govt. agency before entering to the tank/ or	agency before entering to the tank/ confined space. Air pressure test of tanks to be
proved in	proved in case of any repair works.	
HA 1035	Dry out and inspect compartment structure for failure of paint coating. Remove	DO survey by class surveyor and touch up
	any loose or flaking paint and all signs of corrosion by scraping and wire brushing.	paint scheme. Paint CG supply.
	Ensure all strainers, limber holes and valves are clear and thoroughly dry before	
	applying paint. (Approx area 20 sqm) Paint Yard Supply.	
FRESH V	FRESH WATER TANK	
HA 1036	Dry out and inspect compartment structure of 01 in no. fresh water tank (14	DO survey by class surveyor and touch up
	Tons) for failure of paint coating. Remove any loose or flaking paint and all signs	paint scheme. Paint CG supply.
	of corrosion by scraping and wire brushing. Paint is to be applied as per scheme	
	area 95 sqm). Paint Yard Supply. Ensure all strainers, limber holes and valves	
	are clear and thoroughly dry before applying paint. Manhole gasket to be	
	renewed.	
HA 1037	Associate the class surveyor during internal inspection and project specific defect	Delete. Covered in HA-1036.
	for repair. Apply paint as per scheme. Ensure all manhole covers are free of	
	corrosion and intact at seating. Pressure test tank if steel renewal /repair carried	
	out. Paint as per scheme. Renew 04 in nos of taps and isolating stop cocks in	
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FUEL OIL	FUEL OIL / LUB OIL TANKS	
HA 1038	Following tanks are to be cleaned and inspected for material state by class	DO. Yard to cater for internal survey and
	surveyor.	touch paint scheme. Paint CG supply. Material
	(a) Fuel oil tank - 03 Nos (total volume-49.99 cu mtr)	yard supply.
	Fuel RU tanks - 02 Nos	
	(c) Lube oil tank 15 W 40 - 02 No (total volume-1.40 cu mtr	
	<u>Lube oil tanks</u> . Clean tank and examine interior surface for corrosion. Recoat	
	paint as per specification. Pressure test the tanks if any steel renewal/ repair	
	carried out. All 08 manhole gaskets and securing bolts to be renewed. Yard to	
	issue gas free certificate from govt. agency before entering into the tank/ confined	
	space. Air pressure test of all tanks to be carried out in case of any repair works.	
HB 1039	Overhaul 15 Nos tank breathers and renew wire meshes with frames, Area total-	DO. Material yard supply.
	15 sq feet. (Mat-SS). Spares yard supply .	
ATU COM	ATU COMPARTMENT	
HA 1040	HA 1040 Inspect structures not covered by lagging, (Area 11 X 7.4 Sq ft) paying particular	Delete, Covered in HA-1023,
	attention to decks boundaries, lower portion of bulkheads and structures	
	obscured by fittings. Where paint is peeled, cracked, blistered lost adherence or	
	structure is excessively corroded, clean to bare metal, dry the surface and re-coat	
	as per paint scheme.	

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MAGAZI	MAGAZINE SPRINKLING SYSTEM	
HA 1041	100% pipe lines to be dismantled chemically cleaned and defects if any to be rectified and pressure tested 1.5 times of working pressure. Mat- Cu Ni, Total Length 07 Mtrs. Dia- 50 MM and 04 Mtrs of 32 MM	DO. Material yard supply. Working pressure 04 Bar, Test pressure 06 Bar. Benevial of pines if any against AMDE.
HA 1042	02 in no Operating valves of magazine and CRN 91 gun to be overhauled and	DO. Material yard supply.
		Type of valves- SD Size- 50 mm valve – 01 no, 32 mm valve- 01 no. Working pressure 04 Bar, test pressure 06 Bar.
BAGGAG	BAGGAGE STORE	
HA1043	Examine all steel structure & chequered plate paying particular attention to the	DO touch up paint scheme. Paint CG supply.
	area under vertical support & boundaries. Clean scrap and paint the rusted area.	Area-50 Sq. mtr. Renewal of steel if any, to be catered against HA-1007.
CABLE L	CABLE LOCKERS (02 NOS)	
HA 1044	All Wooden grating in cable locker to be renewed as per sample. Cable to be	DO cleaning including suction strainer and box
	+	and survey (class surveyor) of cable locker.
	strainer and box to be cleared. Structure in vicinity of cable clench, shipside,	Undertake touch up paint scheme. Paint CG
	plates and bars, stiffeners to be examined. (Area 7.6 X 13.6 sq ft). Recoat after	supply.
	repair as per scheme.	
HA 1045	Cable to be fixed to the cable clench after applying XG 274 grease to D-shackle.	Delete.
	The fastening process be done in presence of SS, CGRPT rep and class surveyor. Same to be surveyed by a class surveyor and certificate to be provided.	

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Joseph .	DTO CGDHQ-1
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	DECK CRAINE (NED DECK MAKINE, 11PE; SCIT 10/2:8-4:0 S, SWL -999Kg)	
HA 1052	Survey and load test deck crane together with all associated fittings, ropes, blocks	DO only load testing.
	pulleys etc. Any defect to be projected (SWL-999Kg, Wire rope breaking	
	strength - min 50 kN Wire rope dia - 10 mm, Wire rope	
	length : 27m)	
	A. Proof test shall include	
	1. Hoist and lower the main hook	
	2. Auxiliary hook load and boom	
	3. Slewing and leafing	
	4. Test of safety	
	5. Fail safe and limit switches	
	6. Load movement	
	7. Boom angle indicators	
	B. After testing the following should be examined	
	1. Foundation	
	2. Sheaves and rope guides	
	3. Wire ropes and end connectors	
	4. Hoist, brakes and clutches	
	5. Hooks	
	6. Bolting arrangements	
HA 1053	Overhaul the electric motor, clutches and hydraulic system. Prove the hydraulic	Delete.
	system for 240 bar operating pressure. All hydraulic hoses are to be changed.	
	Replace hydraulic oil. Check the current rating (power pack). Open gearbox and	
	inspect the gears for any physical damage. Dismantle the fixed arm and telescopic	
	arm. Inspect the arms and bearings. Inspect the gliding plate units inside	
	system and prove for operation at specified SWL-999 Kg (Any defects observed to	
	be raised).	

SO 1/C Electrical Rajratan	Engg Rajratan	Shipyard Ea
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HA 1054 Inspect the chocks of Gemini and RIB for proper seating. Any defect be projected for rectification. HA 1055 Overhaul water scooter, Job includes following (a) Replacement of spark plugs (b) Adjustment of choke cable. (c) Re conditioning of battery (d) Lubrication of lubricating points (e) Engine tuning (f) Renewals of fuel filters (g) Change of lubroid points (e) Engine tuning (e) Engine tuning (f) Renewals of fuel filters (g) Change of lubroid points buoyancy chambers and chamber valves to be Delete. SS tested for air leak. Boat leak test to be carried out and proved. HA 1055 RIB and 02 in no Gemini boats buoyancy chambers and chamber valves to be Delete. SS tested for air leak goat leak test to be carried out and proved. HA 1057 O4 in nos. life rafts service due in the month of Nov. To be serviced. Contract. HB 1058 Stand of RIB and water scooter rusted and corroded to be renewed as per existing Delete. HB 1059 Stand of RIB stand size 5.4 x 2.9 x 2.1 ft), (Water Scooter stand size 5.4 x 2.9 x 1.9 ft) TOWING HOOK, BOILARD, BUIL RINGS CLEAT AND STAG HORN HA 1059 Die penetration test to be conducted on 09 bollards, 10 fair leads, 02 buil rings D0. DP test and visual survey only. and 08 stag horn as per standards specific defects to be reported to ship. Renewal if any under AWNF. HB 1060 Renewal of sl (a),(b),(c) and (d) with enlarged size to facilitate housing of Delete. (e) Towlind hook 01 in nos. SWIL: 1.5 tons SWIL: 1.

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Sain !	M/s Chowgule
700	M/s Krasny
D;	M/s Shoft Shipyard
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24	SO I/C Electrical Rajratan
Je Sich	SO I/C Hull Rajratan
Coper	CGRPT (Srt) Rep
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ANCHOR	ANCHOR CAPSTAN (GRSE, KOLKATA), CAPACITY: 2 TONS	
HA 1061	Dismantle 02 in nos. capstan, cable holder and gear box. Strip down for examination of all bearings, bushes, shafts, gears, clutch and brake lining. Holding bolts to be removed and examined. Assembly gear oil to be changed. Brake lining to be renewed. Grease all pins. Operation of both capstans after assembly without and with load to be proved in both modes. Load test certificate to be provided.	DO overhauling of two capstans. Material yard supply. Spares and oil CG supply. Load test certificate to be provided by yard. Test Load- 2 tons.
HB 1062	Anchor capstan control panel stand and cover deteriorated due to rusting. To be renewed as per sample. (Mat: Aluminum sheet Size: 1.5 feet x 1 feet, MS Frame 3.5 ft)	DO. Material yard supply.
MOORIN	MOORING CAPSTAN (GRSE, KOLKATA), CAPACITY: 1.5 TONS	
HA 1063	Dismantle mooring capstan and lower the gear box. Strip down for examination of all bearings, bushes, shafts, gears, clutch and brake lining. Holding bolts to be removed and examined. Assembly gear oil to be changed. Renew brake lining. Grease all pins. Operation of mooring capstan after assembly without and with load to be proved. Load test certificate to be provided.	DO. Oil and spares CG supply. Material yard supply as per RFIC minutes. Load test certificate to be provided by yard. Test Load-1.5 tons.
HB 1064	Capstan control panel stand and cover deteriorated due to rusting. To be renewed as per sample. (Mat: Aluminum sheet Size: 1 feet x 0.5 feet, MS Frame 3.5 ft)	DO. Material yard supply.
STRUCTI	STRUCTURAL FITTINGS (DOOR, HATCHES MANHOLES, SCUTTLES, BRIDGE OBSERVATION WINDOW)	TION WINDOW)
HB 1065	Rubber beadings of 9 weather deck doors and 06 hatches deteriorated and lost water tight integrity (approx, length 65 m, width 35 mm and thickness 20 mm) To be renewed and proven. (Chalk test). Renew rubber seating scuttles. Renew the rubber seating of toughened glasses and hose test to be conducted. As per sample.	and 06 hatches deteriorated and lost DO. EPDM rubber for external and Neoprene right 35 mm and thickness 20 mm) To rubber for internal doors, hatches and scuttles. We rubber seating scuttles. Renew the Material yard supply. Water tight integrity to hose test to be conducted. As per be witnessed by class surveyor. Repair/renewal of doors/ hatches if any against AWRF.
HA 1066	Renew rubber seating in 14 in nos windows seal and framing 10 in nos Port holes and hose test to be carried out. As per sample.	Delete.

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SO I/C Electrical Rajratan	264	-
SO 1/C Engg Rajratan	John J.	
M/s Shoft Shipyard		
M/s Krasny	ports.	
M/s ∬	French	

DO. All in-way jobs included. Material yard supply.	Metallic fender on stbd side bent to be renewed. Length:- 05 Mtrs	HB 1077
DO renewal of 20 Nos stanction shoes and 25 stanctions. All in-way jobs included. Material yard supply.	Stanchion 50 in nos and shoe 42 in nos as per existing sample along with nuts & bolts to be renewed. Mat-MS.	HB 1076
DO. Material yard supply.	150 in nos EMC bonding straps along with nuts & bolts (pvc coated) to be renewed. (Nuts & bolts mat: SS) Size (length-01 ft, breadth-01 inch, thickness-01mm	HB 1075
Delete.	Lagging in naval store damaged to be repaired. Approx area 1 X 3 sq ft.	HB 1074
Delete.	Spring loaded securing clips of 10 in no hatches defective. To be renewed (Mat: SS).	HB 1073
	TTINGS	DECK FITTINGS
Delete.	18 in nos. locks of cupboard & shoe lockers defective. To be renewed as per sample.	HB 1072
Delete.	05 in no. bunk uprooted from base to be fitted back. Location 18 rating mess.	HB 1071
	GENERAL COMPARTMENTS	GENERAL
	to be carried out. Painting of full system to be carried out as per paint scheme	
Delete. Covered in EA-3162.	Chemical cleaning of system pipelines to be carried out. Pressure testing of system	HA1070
THE PARTY OF THE P	FIRE MAIN/ SEAWATER SYSTEM	FIRE MAJ
Delete.	sample. Total – 25 nos.	па тову
1	portable aluminum trade. Trades where broken, defective to be re-welded.	1000
	jet compartment/Fwd engine room/Aft engine room) and renew necessary	
Delete.	Inspect 06 in nos ladder (Boatswain store/7-Rating mess/18-Rating mess / Water	HA 1068
	LADDER, RUNGS & STAIRS	LADDER,
Delete.	Examine awning stanchion and stays, cleats, eye bolts, eye plates and structures in immediate vicinity for distortion, corrosion and cracking of welds.	HA1067
	AWNINGS AND STANCHIONS	AWNING

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000	M/s Shoft Shipyard
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HB 1078	Deteriorated/rusted metallic coaming all around the upper deck to be renewed.	Delete.
HB 1079	Rope reel 04 in nos (02 each in q/deck & foxle) uprooted from base to be renewed as ner sample. Mat –Al	DO. Material yard supply.
HB 1080	Wooden flooring as per sample to be done in ward room and captain's cabin.	Delete.
HB 1081	Macrotek as per existing sample to be done in inner deck Bridge, MSO, Exo's Cabin, TO's cabin and NO's Cabin, Officers alleyway, MCR, ATU Compartment, & 7-Rating mess, 18-Rating mess, SO's Cabin, Officers Bathroom, Senior sailor's bathroom, Junior sailor's bathroom, Dining hall, Store Office, Ship's Office, Galley and Pantry, total area 241 Sq mtr. Queries: M/s Shoft Shipyard Pvt Ltd: Final coat colour to be specified in the defect list	DO only for final coat of Macrotek. Area- 241 Sq. mtr. Material yard supply. Existing grey colour to be maintained.
SEWAGE	SEWAGE TREATMENT PLANT	
HA-1082		Delete. Covered under AIAMC.
HA-1083	Basic overhauling of Vacuumerator pump and black and grey water transfer pump to be carried out.	Delete. Covered under AIAMC.
HB-1084	All three water jet transom flanges (integrated hull fitting) to be renewed. (transom flange CG supply)	DO. Renewal of three transom flanges. Scope of job to be undertaken by yard includes following: (a) Carry out shaft line sighting (LOS) before and after renewal of transom flanges with inspection of class surveyor and PAC firm. (b) Check the existing alignment of shaft seal and transom flanges before dismantling.

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	\$	M/s owgule	HA-1088	HA-1087	HA-1086	HA-1085	RD SE		-	
	Resid	M/s Krasny	Crane facility operations c	Shore supply to 500 un required with made at actu Shore supply provision of v	Garbage clearefit.	Fire main su invariably for sentries each fire sentry and clock fire ma all the times.	YARD SERVICES			
	D.	M/s Shoft Shipyard	Crane facility is to be provided as and when required. operations during the entire refit period. However,	Shore supply power conne to 500 units per day to 500 units per day required with feeder breal made at actuals. Ships sta Shore supply 415V, 50 Harding provision of voltage meter	arances and d	Fire main supply of 04 bar pressural invariably for full duration of refit. sentries each, wherever hot work is fire sentry as required. If the refitticlock fire main pressure, yard to mail the times.				
	SE TE	SO I/C Engg Rajratan	ided as and tire refit pe	ection (415V, and connection connection) and connection	isposal facili	ar pressure and of refit. Root work is in the refitting ard to make				
	J.	SO I/C Electrical Rajratan	when require riod. Howev	50 Hz, 3 Phaecting / discontraction / di	Garbage clearances and disposal facility to be provided for the entire duration of refit.	at the rate 4 efitting yard progress. S firm does r arrangement				
	Jeg .	SO I/C Hull Rajratan		ise) for consun onnecting cabl han 150 KW. for actual power for the durated to the consultations of the consultati		Fire main supply of 04 bar pressure at the rate 40 TPH to be supplied to invariably for full duration of refit. Refitting yard is to provide 02 qualified sentries each, wherever hot work is in progress. SS is also to provide their fire sentry as required. If the refitting firm does not have facility for round clock fire main pressure, yard to make arrangement for fire tender to be stan all the times.				
(CGRPT (Srt) Rep	Yard to cater for 70 hours Payment will be made at	Shore supply power connection (415V,50 Hz, 3 Phase) for consumption power up to 500 units per day and connecting / disconnecting cable as and when required with feeder breaker capacity of not less than 150 KW. Payment will be made at actuals. Ships staff to maintain a logbook for actual power consumption. Shore supply 415V, 50 Hz, 3 Phase to be provided for the duration of refit with provision of voltage meter.	ntire duration of	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 02 qualified fire sentries each, wherever hot work is in progress. SS is also to provide their own fire sentry as required. If the refitting firm does not have facility for round the clock fire main pressure, yard to make arrangement for fire tender to be stand by all the times.				
111	m'	CO Rajratan	DO.	DO. Payment rata basis.	DO.	DO.		PAC firm will providencessary document and spares CG supply Material and paint yar	(f) Yard to provide staging/ scaffolding required for carrying (g) All in-way jobs in	(c) Replace 1 (d) Check a renewal. (e) Carry o
	The state of the s	CGDHQ-1		made	Payment will be made at actual on probasis.			(e) Carry out chock fasting. Choc material yard supply. (f) Yard to provide all tools/ tackles staging/ scaffolding and lifting a required for carrying out all evolution (g) All in-way jobs included. PAC firm will provide technical supply. Material and paint yard supply.	Replace transom flanges. Check alignment of trans wal. Carry out chock fasting	
	H	RTO (Refit)		at actual on pro				PAC firm will provide technical support and necessary documentation. Transom flanges and spares CG supply. Material and paint yard supply.	(f) Yard to provide all tools/ tackles, fixtures, staging/ scaffolding and lifting appliances required for carrying out all evolution (g) All in-way jobs included.	Replace transom flanges. Check alignment of transom flanges post val. Carry out chock fasting. Chock fasting

	actuals. Ship staff to maintain a record/ logbook on this aspect	
HA-1089	Simply of frach water to he catered for O6 tone nor day, including DEO Ites of DO December 11.	
	drinking water per day. However, payment will be made at actuals and SS to keep	U. Payment will be made at actual on pro
	record of water received during refit.	ומנס טמטט.
HA-1090	All OEM/PAC and refitting firms 'H', 'E' and 'L' reps are to embark the ship for pre	DO.
	ny performance/acceptance of the	
	machinery by the ship.	
HA-1091	of suitability is to be issued by the	DO.
HA-1092	Keel blocks are to be arranged as per latest approved docking plan, and ship is to	DO both version docking against vard services
		as per SI (a) and (h) of Para 9 of RFIC
		minutes. SS to provide latest docking plan.
HA-1093	Tug for docking, undocking, berthing and un-berthing are to be provided as and	DO.
HA-1094	Pilot is to be provided while entering and leaving dock and harbour.	DO.
HA-1095	Shipyard is to provide 02 nos mobile phones with unlimited calling in India and	DO.
	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.	
HA-1096	nd unberthing at wet basin including basin hire charges are to be	DO,
	catered for.	
HA-1097	Provide temporary lights to ensure illumination at appropriate level.	DO.
HA-1098	Compressed air supply as and when required.	DO.
HA-1099	Refitting firm to extend fax/e-mail facility to COA/ Refit Overseeing Team on as	DO.
	and when required basis.	
	- Ind	

RTO (Refit)	A
CGDHQ-1	Type
CO Rajratan	The state of the s
CGRPT (Srt) Rep	Money
SO I/C Hull Rajratan	A STATE OF THE STA
SO I/C Electrical Rajratan	2
SO I/C Engg Rajratan	33
M/s Shoft Shipyard	
M/s Krasny	27
M/s Chowgule	KLE AND

DO. Sufficient ventilation to be provided when	Sufficient ventilation to be provided when ship's AC becomes non-ops.	HA-1108
C.	to provide suitable containers/space for storing the residual fuel. The Ship to collect fuel prior departing from the yard.	NA-1107
catered for.		107
visit of Inspector of Explosives are to be		
commencing survey/ not work. For this	of Inspector of Explosives are to be catered for.	
Certificate for all Fuel/ Lube oil tanks prior	commencing hot work. For this purpose provision of blowers with hoses and visit	
DO. The refitting firm to arrange Gas Free	The refitting firm to arrange Gas Free Certificate for all Fuel/Lube oil tanks prior	HA-1106
	the Galley should be provided by the refitting firm.	
DO.	At the time of de-ratting/ de-cockroaching, alternate necessary arrangement for	HA-1105
	when the ship's galley becomes non-operational.	
DO.	Shore galley facilities including gas burners and cost of cooking gas to be provided	HA-1104
	Approx store room size - 15 x 15 ft.	
DO.	Adequate storage space to be provided to ship during the major hull repair work.	HA-1103
and Officers.		
DO. Refit office to include WC facility for EPs	Appropriate refit office for overseeing team with necessary furniture and A/C.	HA-1102
deducted at actuals.	would be deducted at actuals.	
by ICG, the cost of the same would be	refit. In event of berthing and yard services provided by ICG, the cost of the same	
pasin nire charges are to be catered for in	firm is to ensure that there is no unnecessary shifting of ship during the ship's	
Berthing and unberthing at wet basin including	yard services for ship are to be provided for the entire period of refit. The refitting	
DO	Proper alongside berthing facility (not alongside pantoon/ floating dock, etc.) and	HA-1101
	cabin, ward room, dining hall when ship's AC is rendered non operational.	
	system operational. Three split ACs of adequate capacity to be provided in CO	
	alternate seawater cooling lines are to be provided whenever feasible to keep	
DO.	A/C system is to be kept operational for maximum duration of the refit and	HA-1100

Legain	M/s Chowgule
tred	M/s Krasny
	M/s Shoft Shipyard
Se mal	SO I/C Engg Rajratan
July 8	SO I/C Electrical Rajratan
Bek	SO I/C Hull Rajratan
000	CGRPT (Srt) Rep
Y'	CO Rajratan
1000	DTO CGDHQ-1
H	RTO (Refit)

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		ship's AC becomes non-ops.
HA-1109	Yard to provide facilities for DP testing/load testing of Capstan/towing hook / Davits etc.	
DECK FI	FITTINGS	
HB 1110	Jack staff and Ensign staff deteriorated. To be renewed as per sample. Mat: MS	DO renewal including supporting shoes. Material yard supply.
HB 1111	Spring Loaded securing clips of 03 in number hatches defective along with supporting frame. To be renewed as per sample. Mat: MS	DO. Material yard supply
GENERA	GENERAL COMPARTMENTS	
HB 1112	04 nos Shoe locker in 18 rating mess damaged to be repaired.	Delete.
HB 1113	Lagging deteriorated in Dining Hall, 18 Rating mess, 7 Rating mess, Ships Office, Jr Sailors Washroom. Approximate area 100 Sqm. Type of Lagging- MFMB	
		All in way jobs included.
HB-1114	Renewal of 15 Mtrs, 60 mm Dia, water-jet guards pipe (MS) and 08 Mtrs X 300	DO.
	mm X 05 mm aluminium chequred plate platform.	Material including pipe and plates yard supply.
		All in way jobs included.
HB-1115	Load test of towing hook (SWL-05 tons)	DO. All in-way jobs included.
		Yard to provide load test certificate through
		authorised agency.
HB-1116	Pressure testing and internal painting of spray rails (04 nos) to be undertaken.	
HB-1117	06 Nos Mushroom hoods to be overhauled and wire mesh to be renewed. Size of Mushroom hood: 500 mm- 06 Nos.	
HB-1118	03 Nos goose neck to be overhauled and wire mesh to be renewed. Size: 180 mm X 150 mm.	DO. Material yard supply.
HC-1119	The existing FO tank (Fr 22-25) and FW tank (Fr 28-30) to be modified as per "Modification of Tank Extend Drawing" Drg No. 2072-79/110221 [attached] under	DO.
	supervision of class surveyor.	(a) Yard to undertake modification as per
	(a) The other drawings to be refered are as follows:-	Modification of Tank Extend Drawing" Drg No. 2072-79/110221
		supervision and prove pressure test. SS to
M/s	M/s Krasny M/s Shoft SO 1/C SO 1/C GGRPT (Stt)	
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CO DTO RTO (Refit) Rajratan CGDHQ-1	A Section of the sect
CGRPT (Srt) Rep	
SO I/C Hull Rajratan	Jes !
SO I/C Electrical Rajratan	70
SO 1/C Engg Rajratan	Mars (
M/s Shoft Shipyard	S. S
M/s Krasny	2000 A
M/s Chowgule	

					 (b) The job involves introduction of new tank bulkheads frame structures/ out board girders etc and omission of certain existing tank bulkheads. The scope of work and bill of material are specified in the drawing. Steel grade-AH36. (c) Scope includes pressure tests post modification.
			supply luded	(b) All Material yard supply (c) All inway jobs included	No. 2072-79/110201-20 re for taking the materials/ plates are shown in the drawing 79/160101.
ည္က	yard	ਰ	drawings	provide reference	(i) Details of scallops/notches/snips/collar plates & welding as per Drg No provide reference drawings to yard as

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,	Car.	Chowgule
	The d	M/S Krasny
		M/s Short Shipyard
	SE SE	SO I/C Engg Rajratan
	727	SO I/C Electrical Rajratan
	Be	SO I/C Hull Rajratan
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1		CGDHQ-1
	H	RTO (Refit)

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ICGS RAJRATAN NORMAL REFIT (NR-1) MAIN DEFECT LIST: ENGINEERING

EA-3001 Clean and inspect Water Jet buckets (03 Nos) including following:- (i) Impeller shaft (ii) Impeller Blade (iii) Steering and Reversing unit EA-3002 Check for any mechanical damage of impeller and guide van chamber. EA-3003 Remove micro-organism and marine growth inside the inlet duct, tunnel area, steering nozzle and guide vane. EA-3004 Sacrificial Zinc anodes on all three impeller shaft protection tubes along with securing bolts to be replaced. Total Qty – 06 Nos, Size: 200 mm x 50 mm x 22 mm, Make: M/s Rolls-Royce, Part No. R101454A (Spares CG supply, Mat – Yard Supply) EB-3005 All three water Jets shaft protection tube sacrificial Zinc anodes fitted base corroded (.) To be renewed as per sample. (Qty – 03, Mat- MS) EA-3006 Following under water and sea chest/sea suction line valves to be overhauled and pressure tested, Test pressure-06 bar. Renewal of spindle, disk and lid if required and painting to be carried out. All nut and bolts to be renewed with SS during fitment. (Material Yard Supply) SIZE OXY I. Main Engine Sea chest valves(Gate Vv) SIZE OXY SIX MAN SIX OX NOS SIX OXY	XK ROUTINES Clean and inspect Water Jet buckets (03 Nos) including following :-	
	Jet buckets (03 Nos) including following:-	
		Delete covered under water jet five yearly
	Impeller shaft (ii) Impeller Blade (iii) Steering and Reversing unit	routines.
	damage of impeller and guide van chamber.	Deleted, Covered in EA -3015
	Remove micro-organism and marine growth inside the inlet duct, tunnel area, steering nozzle and guide vane.	a, Deleted. Covered in HA-1005
	Sacrificial Zinc anodes on all three impeller shaft protection tubes along with	a with Deleted. Covered in EA-3026
	securing bolts to be replaced. Total Oty – 06 Nos, Size: 200 mm x 50 mm x 22	
	mm, Make: M/s Rolls-Royce, Part No. R101454A (Spares CG supply, Mat - Yard	- Yard
	aft protection tube sacrificial Zinc anodes fitted base	d base Delete.
	corroded (.) To be renewed as per sample. (Qty - 03, Mat- MS)	
and painting to be carried of fitment. (Material Yard Supply) SI Description 1. Main Engine Sea chest ve 2. Main Engine Sea suction 3. DA's sea chest valves(Ga 4. GS pump's sea chest valves) 5. GS pump's sea chest valves of Spump's sea chest valves of Spump's sea chest valves of Spump's sea suction literatures.	Following under water and sea chest/sea suction line valves to be overhauled and	led and DO overhauling of valves as per Para 11 sl(e) of
and painting to be carried of fitment. (Material Yard Supply SI Description 1. Main Engine Sea chest vo. 2. Main Engine Sea suction 3. DA's sea chest valves (Ga Pumpl's sea chest valves of S pumpls sea surtion little sea surtion sea s	Source of the series of spilling, also alla li	
fitment. (Material Yard Supply SI Description 1. Main Engine Sea chest ve 2. Main Engine Sea suction 3. DA's sea chest valves(Ga 4. GS pump's sea chest valves of Sea chest valveling sea chest valveling sea surtion li	ed out. All nut and bolts to be renewed with 55 during	during minutes, lest pressure; up bar
	Size Oty	
 Main Engine Sea suction DA's sea chest valves(Ga' GS pump's sea chest valv GS nump's sea suction lit 	150 MM	
3. DA's sea chest valves(Gai 4. GS pump's sea chest valv 5. GS mimp's sea surtion lit	e Vv) 150 MM	
4. GS pump's sea chest valv	65 MM	
F GS immo's sea surtion lir	80 MM	
	e w) 80 MM	
6. AC condenser Pump sea chest valve(Gate N	sea chest valve(Gate vv) 65 MM 01 No	
7. AC condenser Pump sea		
8. RO Plant sea chest valve	alve 32 MM 01 No	

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RTO (Refit)	A
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CGRPT (Srt) Rep	July 1
SO I/C Hull Rajratan	the
SO I/C Electrical Rajratan	A A
SO I/C Engg Rajratan	3/2
M/s Shoft Shipyard	8
M/s Krasny	Don't
M/s Chowgule	Mar-

DO. Material yard supply. Renewal, if any, under AWRF.		d tear.	Check the Cooper roller bearings for wear and tear.	EA-3010
		out as follows:	Inspection of the Plummer blocks (05 Nos) to be carried out as follows:	Inspection
DO only inspection of Lami disc coupling Alignment checks covered in HB-1084. Spares CG supply. Repairs, if any, under AWRF.	using stroboscopic	any misalignment	Inspect the Lamidisc coupling disc packs for any misalignment using stroboscopic method as enumerated in the user manual.	EA-3009
Do visual inspection. Spares CG supply. Repairs/ renewal if any against AWRF.	and investigate the	failure, replace it	Check for any disc pack failure. If found any failure, replace it and investigate the cause of failure.	EA-3008
	(C), QTY-03 NOS)	' (P & S), 11256	SHAFTING (M/S KOPFLEX JAURE, S.A. TYPE-11257 (P & S), 11256 (C), QTY-03 NOS)	SHAFTING
DO. Material yard supply as per RFIC minutes. Test pressure- 06 bar	lled and pressure lid if required and SS during fitment. Qty 03 Nos 03 Nos 02 Nos 01 No	nt to be overhau indle+, disk and label renewed with be renewed with 150 MM 65 MM 80 MM 32 MM 32 MM 32 MM 32 MM 32 MM 40 MM 65 MM 40 MM	Overboard valves of the following equipment to be overhauled and pressure tested. Test pressure-06 bar. Renewal of spindle+, disk and lid if required and painting to be carried out. All nut and bolts to be renewed with SS during fitment. (Material Yard Supply) SI Description Size Oty Main Engines (Angle SD Vv) DA's (Angle SD Vv) A C condenser Pump (Angle SD Vv) RO Plant (Angle SD Vv) BO MM 03 Nos Sewage Treatment Plant(Angle SD Vv) BOWS(Angle SD Vv) Calley (Angle SD Vv) Sewage Treatment Plant(Angle SD Vv) Beductors (Angle SD Vv) Calley (Angle SD Vv) Ca	EA-3007
	01 No 01 No	32 MM 125 MM	9. OBWS sea chest valve 10. Magazine Flooding valve	

M/s Chowgule

M/s Krasny

M/s Shoft Shipyard

SO I/C Engg Rajratan

SO I/C Electrical Rajratan

SO I/C Hull Rajratan

> CGRPT (Srt) Rep

CO Rajratan

DTO CGDHQ-1

RTO (Refit)

EA-3011	Renew the lubricating grease. (Grease type: Lithium based type 2 grease with extreme pressure additives) (Material Yard supply)	DO. Material yard supply
EA-3012	All three shafts to be cleaned with soft pad and polished. Shafts to be applied antirust chemical coating (Rust keeper 999).	Delete. SS.
EA-3013	Calibrate 05 Nos Plummer block temperature sensors.	Delete covered under LA-5047.
EA-3014	All three shaft inflatable seals air lines to be flushed with compressed air (Dia: 12 mm, total length: 60 m, Mat: Copper).	DO. Material yard supply. All in way jobs included.
MATED 1	MATED JETS & SVSTEM (MAVE, M/S VAMENA) DOLLS BOVCE SWEDEN TYPE 62 S2 ND OTV 02 NOS	ON CO VIO ON
PAC: M/S	WALER JEIS & STSTEFF (MARLE 14) S NAME ROLLS-ROTCE, SWEDEN, TIFE 63 53 NF, OTT - 0 PAC: M/S ROLLS ROYCE MARINE INDIA, MUMBAI/ M/s Kongsberg Maritime CM India Pvt Ltd.	la Pvt Ltd.
5 Yearly r		as follows:-
EA-3015	Carry out in-situ visual inspection of impeller, guide van chamber and transom flange assembly.	guide van chamber and transom Delete covered under EA-3029 to EA-3038.
EA-3016	Carry out in-situ visual inspection of shaft, flange bolts, shaft seal, shaft coupling and split cone ring. If required, carry out readjustment of shaft seal.	Delete covered under EA-3029 to EA-3038 .
EA-3017	Carry out in- situ inspection of bulkhead seals (Total :05 Nos for three water jets).	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
EA-3018	Carry out functional test of counter balance valve of steering and reversing system.	Delete. Covered in EA-3040.
EA-3019	Carry out functional test of PTO pump and electric motor driven lub oil pump.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
EA-3020	Replace filters in hydraulic and lub oil system.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
EA-3021	Carry out functional test and adjustment of W/J alarm switches, pressure gauges and remote control system.	Delete covered under LA-5046 and LA-5047.
EA-3022	Carry out functional test/adjustment of hydraulic power pack tank with valve manifold.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
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hoperated or Sin sold into Oppo the Coli	M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	CO Rajratan	DTO CGDHQ-1	RTO (Refit)
	Non-	Dord H	8	3/2	A STATE OF THE PROPERTY OF THE	A A	ONTO	Am j	Char	A

Made	M/s Chowgule	EA-3030		EA-3029	EA-3028	EA-3027	EA-3026	EA-3025	EA-3024	EA-3023
Rod	M/s Krasny	Replace the hub seal.	•	Replace the hub bearings	Check out pr	Carry out cal	Replace the (01 set per verseal (01 set)	Replace all th	Replace feed	Carry out pre of all three w
J.	M/s Shoft Shipyard	nub seal.		າub bearings.	Check out pressure test of hub seal	bration of lev	Replace the anodes of shi (01 set per water jet), dis seal (01 set per water jet).	Replace all the cylinder seals	back protection	assure and cra ater jets and
SE SE	SO I/C Engg Rajratan				hub seal.	/ers, Feedbac	Replace the anodes of shaft protection tube (01 set per water jet), disk type anodes on seal (01 set per water jet).	als	on hoses (02	Carry out pressure and crack test of hydraulion of all three water jets and replace if required.
A An	SO I/C Electrical Rajratan		·			k units and re	n tube (05 poles on the jet		nos per W/J)	draulic hoses quired.
Josep.	SO I/C Hull Rajratan					Carry out calibration of levers, Feedback units and re adjust indicators	(05 per water jet), hanging he jet (07 per water jet) ar		Replace feedback protection hoses (02 nos per W/J).Total 06 Nos.	Carry out pressure and crack test of hydraulic hoses of steering and reversing unit of all three water jets and replace if required.
2000	CGRPT (Srt) Rep					rs.	Replace the anodes of shaft protection tube (05 per water jet), hanging anodes (01 set per water jet), disk type anodes on the jet (07 per water jet) and shaft seal (01 set per water jet).			d reversing unit
	CO Rajratan	DO through PAC I Maritime CM India Spares CG supply.	removal/ refi covered work yearly water jets covered clearance of removal of water	DO through PAC fi Maritime CM India Spares CG supply.	Delete covere	Delete. Covered in LA-5047 and LA-5048	DO through PAC fi Maritime CM India Anodes CG supply.	DO through PAC fi Maritime CM India Spares CG supply. Cylinder seals to b	DO through PAC f Maritime CM India Spares CG supply.	DO renewal of hyo M/s RRMI (M/s M/s Pvt Ltd.). Spares CG supply.
7	DTO CGDHQ-1	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.	removal/ staging required, all in-way jobs for removal/ refitment of water jets, provision of covered work shop space for undertaking five yearly water jet routines and painting of water jets covered in yard's scope of work. Stern clearance of 8-10 Mtrs is to be catered for removal of water jets in the dry dock.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.	Delete covered under EA-3030.	Covered in LA-5038, and LA-5048.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Anodes CG supply.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply. Cylinder seals to be replaced and pressure tested	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.	DO renewal of hydraulic hoses through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
A	RTO (Refit)	I (M/s Kongsberg	ets, provision of undertaking five painting of water of work. Stern be catered for dock.	I (M/s Kongsberg		, LA-5046 and	[(M/s Kongsberg	(M/s Kongsberg	[(M/s Kongsberg	through PAC firm

EA 2021	Boolean 'v' rings in milt	DO through DAC form M/c BBMT (M/c Voncathous
5	יייים ליייים	Maritime CM India Pvt Ltd.).
EA-3032	Replace bolts of impeller/stud shaft in pump unit.	Spares CG supply. DO through PAC firm M/s RRMI (M/s Kongsherg
		Maritime CM India Pvt Ltd.). Spares CG supply.
EA-3033	Renew shaft seal assembly along with inflatable seal.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
EA-3034	Replace the split cone ring.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
EA-3035	Inspect mechanical interface between impeller shaft and impeller shaft journal	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
EA-3036	Replace the bushings.	Delete. Replacement of bushings only during alternate 5 Yrly routines.
EA-3037	Replace the locking plates,	Delete,
EA-3038	Carry out thorough inspection of complete plate areas.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spare locking plate CG supply.
EA-3039	Renew the complete hydraulic oil of the system.	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Oil CG supply.
EA-3040	Replace the counterbalance valve (V41, V42 and V18).	DO through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.). Spares CG supply.
EMERGE	EMERGENCY DIESEL ALTERNATOR (MAKE:M/S FIELD MARSHAL, TYPE:FH 786, QTY:01 NO)	1 NO)
EA-3041	Test Injectors of engine.	Delete.
EA-3042		Delete. SS.
EA-3043	Kange: U – 600 C)	Delete. S&D
M/s Chowgule	M/s Krasny M/s Shoft SO 1/C SO 1/C CGRPT (Srt) Shipyard Engg Electrical Hull Rep Rajratan Rajratan	CO DTO RTO (Refit) Rajratan CGDHQ-1
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RTO (Refit)	DTO CGDHQ-1	CO Rajratan	CGRPT (Srt) Rep	SO I/C Hull Rajratan	SO I/C Electrical Rajratan	SO I/C Engg Rajratan	M/s Shoft Shipyard	M/s Krasny	M/s Chowgule
e provided.	DO. Calibration certificate to be provided	DO. Calibration		iu bar)	Calibiation of Titler cooler salety valve. (Set point: 10 bar)	salety valve	ii III lei coole	Calibration	LA-202/
ply.	Renewal it any against CG supply.	Renewal it any			1.0		h Tatau anala		E > 20E 7
e provided.	DO. Calibration certificate to be provided	DO. Calibration		30 bar)	Calibration of High pressure safety valve (Set point: 30 bar)	ıre safety val	f High pressi	Calibration o	EA-3056
e provided.	DO. Calibration certificate to be provided	DO. Calibration	1117111	, Qty: 01 no)	Calibration of Digital Temp. Gauge (Range: 0-200 C,	p. Gauge (Ra	f Digital Tem	Calibration o	EA-3055
e provided.	DO. Calibration certificate to be provided	DO. Calibration		y: 01 no)	Calibration of Pressure Gauge (Range: 0-20 bar, Qty: 01 no)	auge (Range:	f Pressure G	Calibration o	EA-3054
e provided.	DO. Calibration certificate to be provided	DO. Calibration		r: 01 no)	Calibration of Pressure Gauge (Range:0-40 bar, Qty: 01 no)	auge (Range:	f Pressure G	Calibration o	EA-3053
l yard supply.	DO. Spares CG supply. Material yard supply.	DO. Spares Co	rn out parts. e.	Overhauling of Air compressors to be carried out and renew the worn out particles overhauling compressor to be proved for optimum performance.	carried out ar oved for optin	essors to be prossor to be pro	of Air compruiling compres	Overhauling Post overhau	EA-3052
		9)	, QTY: 02 NOS)	MAIN HP AIR COMPRESSOR (MAKE:M/S INGERSOLL RAND, TYPE: 7T2, QTY:	SERSOLL RA	KE:M/S INC	ESSOR (MA	AIR COMPR	MAIN HP
				FOT pump)	Discharge gauge (Range: 0 to 10 bar, Qty: 02 nos, FOT pump)	0 to 10 bar,	auge (Range:	Discharge ga	
e provided.	DO. Calibration certificate to be provided.	DO. Calibration		mp: Toumn)	Carry out calibration of following gauges of FOT pump; Suction gauge (Range: -1 to 1 har Obv: 02 nos FOT numn)	Mowing gaug to 1 har Ot	libration of to lie (Range: -1	Carry out ca	EA-3051
			verhauling.	and mechanical seal. Alignment with motor to be carried out post overhauling.	notor to be ca	nment with r	ical seal. Alig	and mechan	1
I yard supply.	DO. Spares CG supply. Material yard supply.	DO. Spares Co	uding bearings	Overhaul the FOT pump and renew the defective components including bearings	he defective	and renew t	e FOT pump	Overhaul the	EA-3050
		TY: 02 NOS)	E: RGB-4MT, C	TRANSFER PUMP (MAKE: M/S ROYSONS ENGG (P) LTD, TYPE: RGB-4MT, QTY: 02 NOS)	SONS ENGO	E: M/S ROY	PUMP (MAK	TRANSFER I	FUEL OIL
oly.	Renewal if any against CG supply.	Renewal if any		•					
o be provided.	DO calibration and certificate to be provided.	DO calibration		es if required.	Carry out calibration and renewal of pressure gauges if required	renewal of p	libration and	Carry out cal	EA-3049
Laval d supply	DO through PAC firm M/s Alfa Laval Spares CG supply. Material yard supply	DO through PA Spares CG sup				rator motor.	Replace bearings of separator motor	Replace bear	EA-3048
d supply	Spares CG supply. Material yard supply	Spares CG sup			Supplied.	cicali and hispect planes and incubil coupling.	spect piakes	מומ	L 2001/
u suppiy	Spares to supply, Placellal yallu supply	Spares ou sup				and friction	code de la color	Close and in	EA_20/17
Laval	DO through PAC firm M/s Alfa Laval	DO through PA				bowl spindle.	Check radial wobbling of bowl spindle	Check radial	EA-3046
bo ullough PAC IIIIi Mys Alid Laval. spares co supply. Material yard supply	al yard supply		ig nousing, on	sump and Oil filling device.	iilp, bowi spii	e.	sump and Oil filling device.	sump and Oi	[A-50+5
PUNE	NO) PAC: M/S ALFA LAVAL, BANER, PUNE	⊣ [<u>₽</u>		FUEL OIL CENTRIFUGE (MAKE:M/S ALFA LAVAL, TYPE:MMB 304S-11, OTY:01 Overhauling of fuel oil centrifuge to be carried out. Job includes following:-	AL, TYPE:N	e carried out	E (MAKE:M entrifuge to b	Overhauling of fuel oil centrifuge to be carried out. Job includes following:-	Overhaulin
		Delete.		ated. To be re	perished/deteriorated.	lagging found peri	line lagging	DA exhaust line sample.	EB-3044
CALL TAX AND ALL ALL ALL ALL ALL ALL ALL ALL ALL AL		ન		ı			- 1	-	

EA-2059	Chock sinflys	ac Allegaotai	יי סק+ מרטןט ש	1 0 xi			
מרחר ען	כוופנצ שוווסא	CHECK AILLIOW INTERNALLY AND CHEAN UNE AN COMS.	a creati ute a	II COIIS.			DO. Material yard supply.
EB-3059	Automatic m	Automatic moisture drain valves of STBD HP ai	alves of STB	D HP air con	r compressors malfunctioning	inctioning	Delete. Undertake under DFP.
	intermittently	intermittently. To be overhauled and proved.	nauled and pr	oved.		1	
EMERGEI	NCY AIR COM	IPRESSOR (1	MAKE:M/SE	LGI, COIM	BATORE, TYP	EMERGENCY AIR COMPRESSOR (MAKE:M/S ELGI, COIMBATORE, TYPE: HP 05 300, OTY: 01 NO)	TY: 01 NO)
EA-3060	Compressor	loading/unload	ding valve to	be overhaule	Compressor loading/unloading valve to be overhauled and proved.		
EA-3061	Inspect the v	Inspect the valve plates and replace worn out valve plates.	nd replace wo	orn out valve	plates.		
EA-3062	All the pipel	ines should	oe checked	for leaks at	All the pipelines should be checked for leaks at joints and replace packing	olace packing if	
	necessary.					-	
EA-3063	Dismantle N	RV, examine	the spring fo	or stiffness,	check valve se	Dismantle NRV, examine the spring for stiffness, check valve seat. Replace the	
	spring and valve seat.	alve seat.	l	•		•	Delete.
EA-3064	Decarbonizes	Decarbonizes the after cooler pipe and intercooler.	er pipe and	intercooler.			
EA-3065	Lubricate the	Lubricate the electric motor bearings.	r bearings.				
EA-3066	Following gar	Following gauges to be calibrated	ibrated	:			
	(a) Pressu	(a) Pressure Gauge (Range: 0-100 bar, Oty	inge: 0-100 b	var, Qty: 01 no)	(01		
	(b) Pressu	(b) Pressure Gauge (Range: 0-100 bar, Qty: 03 nos)	inge: 0-100 b	var, Qty: 03 r) 10S)		
EMERGEI	NCY AIR COM	PRESSOR E	NGINE (MA	KE:M/S GR	EAVES, COIM	BATORE, TYPE:	EMERGENCY AIR COMPRESSOR ENGINE (MAKE:M/S GREAVES, COIMBATORE, TYPE: 1510, OTY: 01 NO)
EA-3067	Check fastenings.	ings.					
EA-3068	Check valve	Check valve clearance, adjust if necessary.	ust if necessa	ary.			Delete,
EB-3069	Compressed	air system lin	e relief valve	to be service	Compressed air system line relief valve to be serviced and proved.		
RO PLAN	RO PLANT (MAKE: M/S ROCHEM SEPARATION SYS (S ROCHEM S	EPARATION	N SYS (I) P	VT LTD, TYPE	I) PVT LTD, TYPE: DT 5S, OTY: 01 NO),	1 NO),
PAC: M/S	PAC: M/S ROCHEM SEPARATION SYS (I) PVT LTD.	PARATION	SYS (I) PVT				
EA-3070	Overhauling	Overhauling of HP pump suction and discharge valves.	uction and dis	scharge valv	es.		DO through PAC firm M/s Rochem Separation
							systems (India) Pvt Ltd., Mumbai. Spares CG
							supply.
EA-3071	Renew the so	Renew the seal kit of HP pump.	ump.				DO through PAC firm M/s Rochem Separation
							systems (India) Pvt Ltd., Mumbai. Spares CG
							supply.
EA-3072	Overhaul the	PK-20 and Ph	<-30 Pumps a	and renew th	Overhaul the PK-20 and PK-30 Pumps and renew the defective components	nponents	DO through PAC firm M/s Rochem Separation
							systems (India) Pvt Ltd., Mumbai.
							Sparca ca supply.
M/c	M/c Kraenv	M/e Shoff	2/1/5	SO 1/C	3/105	CCDDT (C.4)	CTG CTG

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DTO CGDHQ-1	400
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CGRPT (Srt) Rep	Office
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SO 1/C Engg Rajratan	The last
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M/s Chowgule	Kalain

M/s M/s Krasny Chowgule	EA-3084 O	EA-3083	EA-3082	EA-3081			$\dot{\omega}$	ł								7			ji l				الليا							1.1
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M/s Shoft Shipyard	r pump and h	oration/renew	ivity meter p	place PT60 ar	/ meter, 01 n	ge (Range: 0-	pration of following			neter probe t			ometer to be			te in DA filte			PS 51, PS 71,	length: 600 n	length: 800 n	length:1000 r	jh pressure fl	mm, Part no	nm, Part no.	v pressure ho				e wrench an
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		systems (India) Pvt Ltd., Mumbai. Spares CG supply. Material yard supply.
EA-3085	Replace HP pump manifold heads.	DO through PAC firm M/s Rochem Separation systems (India) Pvt Ltd., Mumbai. Spares CG supply. Material yard supply.
EA-3086	Replace DT modules with service exchange modules.	DO through PAC firm M/s Rochem Separation systems (India) Pvt Ltd., Mumbai. Material yard supply.
EA-3087	Replace circuit breakers and contractors as required.	Delete. Covered under LA-5057
AC PLANT	AC PLANT {MAKE: M/S BOCK (I) LTD, TYPE: HG6 1240 4S, OTY: 02 NOS,	
EA-3088	Overhaul the AC compressors and renew the defective components.	DO complete overhauling of both compressors
EA-3089	Withdraw piston and inspect for wear down and scoring marks. Measure wear and	
	tear of pistori, pistori migs and oil scraper migs. Replace il not within tolerance.	FVL LLU, Vadudala 101 DL 313 EA-3000 LO
EA-3090	Inspect small end bushes and gudgeon pins and replace if not within tolerance.	EA-3095, EA-3098. Spares CG supply. Material
EA-3091	Inspect all bearings for wear down and renew the bearing if required.	yard supply. All in-way jobs included.
EA-3092	Inspect unloading device for correct working.	
EA-3093	Inspect crank shaft, undertake measurement, polish and refit if not within tolerance	
	IIIIL	
EA-3094	Strip and examine lub oil pump of compressor	
EA-3095	Clean all motor bearings inspect for wear and tear.	
EA-3096	Overhaul condenser pump and renew the required spares. Post overhauling pump	
	and motor to be aligned	Material yard supply as per RFIC minutes.
EA-3097	AC condenser to be cleaned and inspect for corrosion and fouling. Perform the	DO. Material including anodes yard supply.
	pressure test to 1.5 times of working pressure for 24 hrs. Replace condenser cover	
	gasket/ 'O' ring and anodes on end covers. (Material yard supply)	
EA-3098	Carry out Pressure test. Vacuum test, leak test of complete plant. Inspect cooling	DO. Material including nitrogen gas yard supply
	coil and return bends and check weak spots, glands of valves etc. by hydrostatic	as per RFIC minutes. All in way jobs included.
	testing. Cleaning of cooling coil to be carried out by brush. (Material yard supply)	
EA-3099	AC compressors suction and discharge valves to be overhauled. Renew the gland packing and bushing. (Mat- Brass, Size- 50 MM, Qty- 04 Nos)	DO. Material yard supply as per RFIC minutes.
	ממנות מיות במיות ליותר בו מיותר ביותר ביות	

M/s Showgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	CO Rajratan	рто С б рнQ-1	RTO (Refit)
S. A.	Jan 20	8	2	The state of the s	St.	Cotto	Jan	Tag !	PR

Man.	M/s Chowgule	EB-3108	EB-3107	EB-3106	EA-3105	EA-3104	EA-3103			EA-3102	EA-3101		EA-3100
Red	M/s Krasny	AC plant pressure gauge shut off va (size: 1/4", Qty- 06 Nos, Mat- Brass)	Both AC compressors oil system interconnecting copper I To be renewed(Mat- Copper, Dia- 6 MM, Length- 03 Mtr)	AC compressors suction, discharge and oil pressure places. Line along with adaptors to be renewed as per Mat- Copper, Line mat- Copper, length- 10 Mtrs)	Calibrate all p	Entire duct of	Recharge (oil and Freon) the system vacuum/pressure tests and undertake trials of all safeties and cutouts. (Material yard supply)	(e) Low pressure cutout(f) High pressure cutout(g) Oil pressure cutout(h) Sea water pressure cutout	(b) Freon Pressure Gauge (Range:-1 to 20 bar, Qty: (c) Pressure Gauge (Range:-1 to 1 bar, Qty: 01 no) (d) Pressure Gauge (Range: 0 to 10 bar, Qty: 03 no	Carry out calibration of following gauges and safety cutout: (a) Freon Pressure Gauge (Range:-1 to 30 bar, Qty:02 nos)	Overhaul air handling unit and renew the bearing. (Make: Mindustries (I) Pvt Ltd. Model-ZDS-80) (Material yard supply)	Globe valve (Bras somatic) (size:2 1/8"): 02 nos Globe valve (Bras somatic) (size:1 3/8"): 04 nos Globe valve (Bras somatic) (size:1 5/8"): 02 nos NR valve (size:1 5/8"): 02 nos Shut off valve (size: 1/4"): 20 nos (Material yard supply)	Overhaul following Freon system valves and replace valve stem glands:
Q.	M/s Shoft Shipyard	sure gauge s /- 06 Nos, Ma	pressors oil s d(Mat- Copp	ors suction, along with ad Line mat- Co	ressure gaug	conditioned	oil and Frests and cutouts. (M	Low pressure cutout High pressure cutout Oil pressure cutout Sea water pressure cut	ssure Gauge Gauge (Range Gauge (Range	oration of foll ssure Gauge	nandling unit Pvt Ltd. Mod	Bras somatic) Bras somatic) Bras somatic) Sras somatic) S:1 5/8"): 02	wing Freon s
ymy w	SO I/C Engg Rajratan	hut off valve at- Brass)	ystem interco er, Dia- 6 MM	discharge an aptors to be pper, length-	le and renew	air of the ship	Freon) the sand undertake to (Material yard s	out	(Kange:-1 to e:-1 to 1 bar, e: 0 to 10 bar	owing gauge (Range:-1 to	and renew thel-ZDS-80) (N	(size:2 1/8") (size:1 3/8") (size:1 5/8") nos nos (Mate)	ystem valves
Make	SO I/C Electrical Rajratan	not holding.	nnecting cop , Length- 03	nd oil pressurenewed as particular 10 Mtrs)	ed all temper	to be cleane	system on trials of plant supply)		(b) Freon Pressure Gauge (Range:-1 to 20 bar, Qty: 04 nos) (c) Pressure Gauge (Range:-1 to 1 bar, Qty: 01 no) (d) Pressure Gauge (Range: 0 to 10 bar, Qty: 03 nos)	Carry out calibration of following gauges and safety cutout: (a) Freon Pressure Gauge (Range:-1 to 30 bar, Qty:02 nos)	e bearing. (Naterial yard	: 02 nos : 04 nos : 02 nos	and replace
Took	SO I/C Hull Rajratan	AC plant pressure gauge shut off valve not holding. To be renewed as per sa (size: ¼", Qty- 06 Nos, Mat- Brass)	oer line dent a Mtr)	re gauge line per sample (Adi	re gaug	Entire duct of conditioned air of the ship to be cleaned with compressed air.	satisfactory including fund	•	υ4 nos))	cutout: 2 nos)	Overhaul air handling unit and renew the bearing. (Make: M/s Zeco Aircon Industries (I) Pvt Ltd. Model-ZDS-80) (Material yard supply)	<u>v</u>)	valve stem gla
STAN STAN	CGRPT (Srt) Rep	d as per sample	Both AC compressors oil system interconnecting copper line dent at many places. To be renewed(Mat- Copper, Dia- 6 MM, Length- 03 Mtr)	AC compressors suction, discharge and oil pressure gauge line dent at many places. Line along with adaptors to be renewed as per sample (Adaptors- 08 Nos, Mat- Copper, Line mat- Copper, length- 10 Mtrs)	the system.	essed air.	Recharge (oil and Freon) the system on satisfactory completion of vacuum/pressure tests and undertake trials of plant including functional checks of all safeties and cutouts. (Material yard supply)				o Aircon		ınds:
7,	CO Rajratan	DO. Material	DO. Material included.	included. Pres EA-3098.	Delete. Calibrati in EA-3102. S&L defective if any.	Delete. Cover				DO. Calibration to be provided.	DO. Material Nos) yard sup		DO. Material
6	DTO CGDHQ-1	DO. Material including valves yard supply.	DO. Material yard supply. All in way jobs included.	DO. Material yard supply. All in way jobs included. Pressure/ vacuum test covered in EA-3098.	Delete. Calibration of pressure gauges co in EA-3102. S&D for temperature gauges defective if any.	Delete. Covered in HA-1046.	DO. Oil and Freon gas CG supply. Material yard supply. All in way jobs included.			on certificate from the certif	DO. Material including pedestal bearings Nos) yard supply. All in way jobs included.		ard supply as p
A	RTO (Refit)	yard supply.	in way jobs	in way jobs est covered in	Delete. Calibration of pressure gauges covered in EA-3102. S&D for temperature gauges defective if any.		pply.			DO. Calibration certificate from certified agency to be provided.	lestal bearings (02 lobs included.		DO. Material yard supply as per RFIC minutes.

BTI GE AN	BILGE AND GS PUMP (MAKE: M/S BE PUMPS, TYPE: SRV 50-200M, OTY: 01 NO), OFM: M/S RE PUMPS	1. M/S RF DIIMDS
EA-3109	Overhaul the pump completely, clean and inspect each item thoroughly and renew	oect each item thoroughly and renew DO. Spares CG supply. Material yard supply as
EA-3110	Check and flush all tube work and suction and delivery piping.	DO. Material vard supply.
EA-3111		DO. Material yard supply.
EA-3112	Renew all mountings showing any sign of deterioration of rubber, lacquer of bond (Type: Resistoflex FM-50A/40)	DO. Material including mountings (04 Nos. of rubber and lacquer bond type mounting) yard supply. All in way tobs included.
EA-3113	Carry out calibration and renewed if required of following pressure gauge. Compound Gauge (Range: -1 to +1 bar, Qty: 01 no) Pressure Gauge (Range: 0 to 10 bar, Qty: 01 no) pressure switch (Type: RT200, qty: 01 no)	DO renewal of gauges and pressure switches. Gauges and pressure switches yard supply.
FIRE AND	FIRE AND GS PUMP (MAKE: M/S BE PUMPS, TYPE: SBV 50-200M, QTY: 01 NO), OEM: M/S BE PUMPS	M/S BE PUMPS
EA-3114	Overhaul the pump completely, clean and inspect each item thoroughly and	DO. Spares CG supply. Material vard supply as per REIC minutes
EA-3115	Check and flush all tube work and suction and delivery piping.	DO. Material yard supply.
EA-3116	Overhaul and prove float control unit	DO. Material yard supply.
EA-3117	Renew all mountings showing any sign of deterioration of rubber, lacquer of bond(Type: Resistoflex FM-50A/40)	DO. Material including mountings yard supply. All in way jobs included.
EA-3118	Carry out calibration and renewed if required of following pressure gauge. Compound Gauge (Range: -1 to +1 bar, Qty: 01 no) Pressure Gauge (Range: 0 to 10 bar, Qty: 01 no) pressure switch (Type: RT200, qty: 01 no)	DO renewal of gauges and pressure switches. Gauges and pressure switches yard supply.
DOMESTI	DOMESTIC FRESH WATER PUMP (MAKE: M/S BE PUMPS, TYPE: AO 3120K-1E-WCF-MS5, OTY-02 NOS),OEM: M/S BE PUMPS	S5, QTY-02 NOS), OEM: M/S BE PUMPS
EA-3119	Overhaul the pump completely, clean and inspect each item thoroughly and renew DO. Spares and material yard supply as per RFIC the worn out components.	DO. Spares and material yard supply as per RFIC minutes.
EA-3120	Check and flush suction and discharge pressure gauge lines	DO. Material yard supply.
EA-3121	Carry out calibration of following gauges: Pressure Gauges (Range: -1 to +1 bar, Qty: 02 no) Pressure Gauge (Range: 0 to 10 bar, Qty: 02 no)	DO. Calibration certificate to be provided.

RTO (Refit)	A
DTO CGDHQ-1	Clerk
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CGRPT (Srt) Rep	Oppor
SO I/C Hull Rajratan	
SO I/C Electrical Rajratan	7
SO I/C Engg Rajratan	3/2
M/s Shoft Shipyard	8
M/s Krasny	De Color
M/s Chowgule	Magair

EA-3127 Complete over	片	EA-3126 Carry out call (a) Pressure (b) Pressure (c) Safety val		EA-3125 Overhaul folk (a) Ball valve	EA-3124 HP air bottles pressure test	EA-3123 Carry out cali (a) Pressure (b) Safety va) (c) Pressure (c) Pressure (d) Overhaul (e) Sight glass leaking.To be	yard supply) coat)
Complete overhauling of the plant to be carried out and to be proved for optimum performance. Defective components to be renewed during overhauling.		Carry out calibration of following gauges and relief valves: (a) Pressure Gauge (Range: 0 to 40 bar, Qty: 01 no) (b) Pressure Gauge (Range: 0 to 10 bar, Qty: 02 nos) (c) Safety valve (Set point: 32 bar, Qty: 02 nos)	(b) Ball valve (Size: 1", Qty: 02 nos): TP 45 bar (c) Ball valve (Size: ½", Qty: 02 nos): TP 45 bar (d) Ball valve (Size: ¼", Qty: 02 nos): TP 45 bar	Overhaul following air system valves: (a) Ball valve (Size: 1 3/8", Oty: 02 nos): TP 45 bar	EA-3124 HP air bottles (02 nos.) are to be cleaned internally with compressed air and pressure tested upto 1.5 times more than working pressure.	I ~ ==	yard supply) (Paint scheme Interline 850 Grey: 01 coat, Interline 850 white: 01 coat)
DO. Spares CG supply. Material yard supply.	PE: GRS-03 EB, QTY: 01 NO)	DO. Calibration certificate to be provided.		DO. Spares and material yard supply as per RFIC minutes.	DO. Material yard supply. Repair/ renewal if any against AWRF. Working pressure: 30 Bar Test pressure: 45 Bar	DO. Material yard supply. Calibration certificate to be provided.	Material yard supply.

	Contract of the last of the la	
r	Romin .	M/s Chowgule
	Rica	M/s Krasny
	3.	M/s Shoft Shipyard
	on of	SO I/C Engg Rajratan
	And Andrew	SO I/C Electrical Rajratan
	Joek .	SO I/C Hull Rajratan
\	O BOO	CGRPT (Srt) Rep
	\$ 3°	CO Rajratan
		DTO CGDHQ-1
:	A	RTO (Refit)

FA-3128	Epllowing valves fitted on OBWS to be overhanged and proved:-	s fitted on (DRWS to be	overhanled	and proved:-		00		
	(c) (c)	inction (Chris		DH. 01	P: 01 Cd.		Charles and material	or Marie Paris	נו
	(a) Sed Walel Suction Valve (Size; 20 IND, Qty; 01 IIO)	sacalori varv	- (Size: 20 i	VD, Cty. 01.1	(<u>o</u>		Spares and material	Spares and material yard supply as per Kric	7 7 7
	(b) Sea water discharge valve (Size: 20 NB, Qty: 01 nos))	lischarge va	alve (Size: 20	O NB, Qty: 0	((sou)		minutes.		
	(c) Ball valve (Size: 3/4", Qty: 02 nos)	Size: ¾", Ql	by: 02 nos)						
<u></u>	(d) SDSL valve (Size: 20 NB, Oty: 02 nos)	(Size: 20 N	B, Qty: 02 n	(SOI					
	(e) Shut off valve (Size: 1/4". Ohy: 03 nos)	ve (Size: 1/4	" Otv: 03 n	(SO					
	(f) Fresh water shut off valve (Size: 1/2". Otv:	shut off va	Ve (Size: 1/2		(50				
EA-3129	Bilde pump (Piston type) to be overhauled and proved	ston type) t	o be overha	uled and pro	ved.		DO, Spares CG supply.		
FA-3130	Inspection of safety valve to be carried out.	afety valve	to be carried	out.			Delete, Covered under EA-3127.	r EA-3127.	
	io lionopalcius	21.							
EA-3131	Inspect coalescer filter and clean by backwashing.	er tilter and	i clean by ba	ackwashing.			Delete. Covered under EA-312/.	r EA-312/.	
EA-3132	Carry out calibration of following gauges:	ation of foll	lowing gaug	es:			DO. Calibration certificate from authorised	cate from authorised	
	(a) Pressure Gauge (Range: 0-6 bar, Qty: 01	auge (Range	e: 0-6 bar, C	2ty: 01 no)		-	agency to be provided.	- i	
	(b) Pressure Gauge (Range: -1 to +1 bar, Oty: 01 no)	auge (Rang	e: -1 to +1 k	oar, Qty: 01	(ou				
	(c) Pressure Gauge (Range: 0 to 5 bar, Qty: 01 no)	auge (Range	e: 0 to 5 bar	, Qty: 01 no					
FA-3133	Test the function of Oil level detector and solenoid valve.	on of Oil lev	el detector a	and solenoid	valve.		DO in conjunction with DL SI EA-3127.	h DL SI EA-3127.	
EM-200 N	ATOR FIRE FI	CHTTINGS	YSTEM (MA	KE: M/SS	IPER FIRE EN	GG PVT LTD. TY	PE: FIRE SUPPRES	EM-200 MAIOR FIRE FIGHTING SYSTEM (MAKE: M/S SUPER FIRE ENGG PVT LTD. TYPE: FIRE SUPPRESSION SYSTEM (KIDDE	<u> </u>
FENWAL	FENWAL, USA, OTY: 02 NOS)	NOS)							1
EA 2134	Carry out tact of all procesure envitches (0) in	of all proces	re cwitched) on ni (0)	no Operating pressure 50 DST)	re 50 DST)	DO through authorize	On through authorized firm Spares CG supply	Nuali
+CTC-41	cally out test t	אככיות ווש ור	II C SWILLCIES.	.01 11 20	יייים שליים אינים	(10.100.01)	Material vard supply.	Material vard supply. All in way jobs included.	֡֝֝֝֝֝֡֓֜֝֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֡֓֓֓֓֡֓֓֡֓֓֡֓֡֓֡֓֡
1 7 7		of last	1 V V	و ما امتا		J 600 TM 200	DO through authorize	of firm Chargo Co	1
EA-3135	lest electrical	control ne	ads. All con	troi neads r	iust de remove	lest electrical control heads. All control heads must be removed from PM-200	DO UNOUGH AUUNONE	DO UIIOUGII aUUIOIIZEU IIIIII. Spales os suppiy.	ř Nddn
	cylinders and nitrogen pilot cylinders	nitrogen	ollot cylinde	<u>prio</u>		to prevent accidental	Material yard supply.	Material yard supply. All in way jobs included.	Ġ.
	discharge. Electric control heads must	ctric contro	I heads mu	<u>pe</u>	reset before connec	connecting to cylinder			
	valve(Total heads- 06 Nos)	soN 90 -spe							
PORTABI	LE SUBMERSIB	SLE PUMPS	(MAKE: M	/S KIRLOS	KAR BROTHER	IS LTD., TYPE: I	PORTABLE SUBMERSIBLE PUMPS (MAKE: M/S KIRLOSKAR BROTHERS LTD., TYPE: NS20/10, QTY: 05 NOS)	(50	
EA-3136	Overhaul the a	II submersit	ole pumps an	nd renew the	Overhaul the all submersible pumps and renew the defective components as	onents as	DO overhauling and	DO overhauling and external painting of 03	of 03
	required. (Material yard supply)	erial yard s	upply)				pumps only. Spares (pumps only. Spares CG supply. Material including	luding
EA-3137	Paint pump casing internally and externally. (paint yard supply)	sing interna	lly and exter	nally. (paint	yard supply)		paint yard supply.		:
50 HP O	BM (MAKE: M/	S YAMAHA	, ТҮРЕ: 6Н	5K, OTY: 0	1 NO. PAC FIF	50 HP OBM (MAKE: M/S YAMAHA, TYPE: 6H 5K, QTY: 01 NO. PAC FIRM- M/S FIBROPLAST)	PLAST)		
EA-3138	Complete over	hauling of C	BM to be co	arried out an	Complete overhauling of OBM to be carried out and renew the worn out	n out	Delete		
	components. R	eplace water	er pump imp	celler and fue	components. Replace water pump impeller and fuel pump. All bearings to be	rings to be			
	greased, bushes and seals to be renewed.	es and seals	to be renev	ved.					
M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO 1/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Huli Rajratan	CGRPT (Srt) Rep	CO Rajratan CG	DTO RTO (Refit) CGDHQ-1	Đ
N. S. C.	port	8	3	No. C.	Joseph Contraction of the Contra	Open	The way	A The state of the	١
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in way jobs included. Size of valve: Spring loaded 15 mm valve.	and valves to be carried out. (Qty — Sight glass- 05 nos, valves- 10 Nos, Material in way jobs included. Size of valve: Spring yard supply) yard supply)	
DO renewal of valves and sight glasses.	EB-3146 Sight glass of both fuel and lub oil storage tanks and hydraulic oil storage tank is	EB-3
TTY - 700 LTRS, QTY - 03 NOS)	FUEL RU TANK(CAPACITY- 6.0 KL, OTY- 02 NOS) AND OIL STORAGE TANKS, (CAPACITY – 700 LTRS, QTY – 03 NOS)	FUE
DO. Spares CG supply. Material yard supply.	EA-3145 Overhaul the air whistle and change the parts if necessary. Prove the unit for smooth operation.	EA-3
	AIR WHISTLE (MAKE: M/S ZOLLNER, TYPE: M75F, QTY: 01 NO)	AFR
	ţ	
Delete.	EA-3144 Overhaul the pump including renewal of mechanical seal and alignment with	EA-3
QTY: 01 NO)	PORTABLE LUB OIL PUMP (MAKE: M/S ROYSONS ENGG (P) LTD, TYPE: RGB-1, QTY	POR
	(b) Pressure gauge: 0 to 10 bar, Qty: 01 no	
	(a) Pressure gauge: -1 to +1 bar, Qty: 01 no	••••
Delete.	EA-3143 Carry out calibration of following gauges:	EA-3
	motor post overhauling.	
Delete.	EA-3142 Overhaul the pump including renewal of mechanical seal and alignment with	EA-3:
	DIRTY OIL PUMP (MAKE: M/S ROYSONS ENGG (P) LTD, TYPE: RGB-1, QTY: 01 NO)	DIR
	04 Nos)	
DO. Anode yard supply.	EB-3141 Anodes fitted on OBM found worn out. To be renewed as per sample(Mat- Zinc,	EB-3
	greased, bushes and seals to be renewed.	
	components. Replace water pump impeller and fuel pump. All bearings to be	
Delete	EA-3140 Complete overhauling of OBM to be carried out and renew the worn out	EA-3:
	SECUNDARABAD.	SECU
PAC: M/S ESMARIO EXPORT ENTERPRISES	HP OBM (MAKE: M/S MERCURY MARINER, TYPE: 25M, QTY: 02 NOS,	25 H
DO. Anode yard supply.	EB-3139 Anodes fitted on OBM found worn out. To be renewed as per sample(Mat- Zinc,	EB-3

	4	
	Mary	M/S Chowgule
	Theod	M/s Krasny
	J.	M/s Short Shipyard
	1 E	SO I/C Engg Rajratan
	A STATE OF THE STA	SO I/C Electrical Rajratan
	Took	SO I/C Hull Rajratan
	(Ad)	CGRPT (Srt) Rep
-	Jan ?	CO Rajratan
	Tet de la constitución de la con	DTO CGDHQ-1
	A	RTO (Refit)

BILGE ED	BILGE EDUCTORS (QTY 06 NOS)	
EA-3147	Carry out servicing and chemical cleaning of bilge Eductors at following compartments and check for their performance (a) Paint Store (b) Magazine (c) Victual ling and baggage store (d) Fwd Engine Room (e) Aft Engine Room (f) Water Jet compartment	DO. Material yard supply. All in way jobs included.
OUICK SH	OUICK SHUT OFF VALVES - 10 NOS	
EA-3148	Overhauling of following Quick shut off valves to be carried out: (a) Fuel Storage Tanks – 03 Nos (b) Main Engines – 04 Nos (c) Diesel Generators – 03 Nos	DO. Material yard supply.
EB-3149 Quick service	shut off valves are hard to operate view jammed pulleys. Pulleys to be and wire rope to be renewed and system to be proved.	Delete.
EA-3150	Overhauling of following A/C sea water system valves to be carried out: Description of valve Size Oty TP (i) Condenser pump suction/discharge(SD Valve) 65 MM 02 Nos 06 Bar (ii) Condenser Inlet/out let valve(Butterfly valve) 65 MM 02 Nos 06 Bar (iii) Emergency cooling vv(SDNR Valve) 65 MM 01 No 06 Bar	DO overhauling of following valves. Si Type Size Qty (i) Condenser pump suction/ 65 02 Nos discharge (SD valve) MM (ii) Emergency cooling vv 65 01 No (SDNR valve) MM Spares and material yard supply as per RFIC minutes.

Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	CO Rajratan	ото ссрие-1	RTO (Refit)
Lacin-	200	8	3/2	SAR	St.	Coppe		Cent	A

	S. S	M/s Chowgule																						EA-3152								EA-3151
1	The	M/s Krasny	(XIX) Ball valve	(xviii)Ball valve	(xvii)Pressure	(xvi)SDNR valve	(xv)Fire hydrant valve	With strainer	(xiv)Non return foot valve	(xiii)Pressure relief valve	(xii)Ball valve	(xi) SD valve	(x) NR vertical lift valve	(ix) SD valve	(viii)Gate valve	(vii)SDNR valve	(vi)SD valve	(v) SD valve	(iv)SDNR valve	(iii)SDSL valve	(ii) SDSL valve	(i) Gate valve	Type of	Overhauling of following	(vi)SDNR valve	(v) SDNR valve	(iv)SD Globe valve	(iii)SD Globe valve	(ii) SD Globe valve	(i) SD Globe valve	Type of valve	Overhauling of following
	Pro	M/s Shoft Shipyard		Ф	xvii)Pressure reducing valve 65NB	Ve .	nt valve		n foot valve	relief valve			al lift valve		(D	ě			(D)		Ų				רט	Ф	alve .	alve	/alve	/alve	læ.	
c	Se	SO I/C Engg Rajratan	65NB	80NB	e 65NB	80NB	65NB		50NB	50NB	50NB	50NB	50NB	25NB	65NB	40NB	65NB	32NB	50NB	100NB	20NB	100NB	valve Size	lge and Fire	32NB	25NB	32NB	25NB	15NB	12NB	Size	esh water l
	Jan	SO I/C Electrical Rajratan	01	01	01	01	90		01	01	03	02	03	01	02	02	05	01	01	01	01	01	Oty	Bilge and Fire main system valves	01	01	01	01	01	05	Qty	Hydrophore
1	Je Seller	SO I/C Hull Rajratan	05 bar	05 bar	05 bar	05 bar	06 bar		05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	06 bar	Test Pressure	to be	05 bar	05 bar	05 bar	05 bar	05 bar	05 bar	Test Pressure	Fresh water Hydrophore system valves to be carried
8	080	CGRPT (Srt) Rep																						carried out:								be carried out:
	3	CO Rajratan							minutes.	Spares and	\square	(ix) SDNR valve	valve	_	valve with	(vii) Non re	(vi) SD valve		(v) NR vertical		ļ	(i) Gate valve	SI Type	DO overhauling of following valves.	U)	res			(iii) SD Globe valve	-	Sl Type	DO overhauling of following valves
128		DTO CGDHQ-1								material ya					vith	ι foot			⋾				Size	ng of followi		terial		Č	H Valve 27NB			ng of follow
\		-								yard supply as		80NB 01 No				50NB 01 No	50NB 02 Nos		SONB OF NO			B	ze Qty	ing valves.	:	ro			NB OI NO		e Qty	ing valves.
1		RTO (Refit)	·							s per RFIC																s per RFIC						

Type of valve (i) SD valve (ii) SDNR valve (RA) (iii) SDSL valve (iii) SDSL valve (iv) Air hydrant valve (v) Relief valve (6-10 bar) (v) Relief valve (6-10 bar) (vi) Pressure reducing valve (vii) Pressure reducing valve (viii) Pressure reducing valve (viii) Pressure reducing valve	04 02 02 01 01 01	Type of valve Size Qty Test Pressure Size Qty Test Pressure Size Qty Test Pressure Qty Test Pressure Size Qty Test Pressure Qty Test Par (i) SDNR valve(RA) 15NB 01 Qty 12 bar (ii) Air hydrant valve 15NB 01 ISNB 01 ISNB	Si Type Size Qty (i) SDNR valve(RA) 15NB 02 Nos (ii) SDSL valve 10NB 01 No (iii) Air hydrant valve 15NB 01 No (iv) Relief valve (6-10 15NB 02 Nos bar) (v) Pressure reducing 15NB 01 No valve (vi) Pressure reducing 15NB 01 No valve (vi) Pressure reducing 15NB 01 No valve Spares and material yard supply as per minutes.	Size Qty 15NB 02 Nos 10NB 01 No 15NB 01 No 15NB 02 Nos 15NB 01 No 15NB 01 No 15NB 01 No 15NB 01 No
15NB 15NB 10NB 10NB alve 15NB 5-10 bar) 15NB cing valve 15NB ucing valve	04 02 02 01 01	bar to 8 bar) bar to 4 bar)	(i) SDNR valve(RA) (ii) SDSL valve (iii) Air hydrant valve (iv) Relief valve (6-10 bar) (v) Pressure reducing valve (vi) Pressure reducing valve (vi) Pressure and material yai	15NB 02 Nos 10NB 01 No 15NB 01 No 15NB 02 Nos 15NB 01 No
24) 15NB 10NB alve 15NB 15NB cing valve 15NB acing valve	04 02 02 01 01	bar to 8 bar) bar to 4 bar)	(ii) SDSL valve (iii) Air hydrant valve (iv) Relief valve (6-10 bar) (v) Pressure reducing valve (vi) Pressure reducing valve (vi) Pressure and material yai minutes.	10NB 01 No 15NB 01 No 15NB 02 Nos 15NB 01 No 15NB 01 No 3rd supply as per F
10NB alve 15NB 5-10 bar) 15NB cing valve 15NB ucing valve 15NB	02 02 01 01	bar to 8 bar) bar to 4 bar)	(iii) Air hydrant valve (iv) Relief valve (6-10 bar) (v) Pressure reducing valve (vi) Pressure reducing valve valve Spares and material yar minutes.	15NB 01 No 15NB 02 Nos 15NB 01 No 15NB 01 No ard supply as per F
alve 15NB 5-10 bar) 15NB cing valve 15NB ucing valve 15NB	02 02 01	bar to 8 bar) bar to 4 bar)	(v) Reliet valve (6-10 1) bar) (v) Pressure reducing valve (vi) Pressure reducing valve valve Spares and material yai minutes.	15NB 02 Nos 15NB 01 No 15NB 01 No ard supply as per F
5-10 bar) 15NB cing valve 15NB rcing valve 15NB	02 01 01	(30 bar to 8 bar) (8 bar to 4 bar)	(v) Pressure reducing valve (vi) Pressure reducing Spares and material yar minutes.	15NB 01 No 15NB 01 No ard supply as per F
cing valve 15NB	01 01		(vi) Pressure reducing valve Spares and material yar minutes.	15NB 01 No ard supply as per F
ucing valve 15NB	01		(vi) Pressure reducing valve Spares and material yar minutes.	15NB 01 No ard supply as per F
;		<u> </u>	Spares and material yar minutes.	ird supply as per R
:			minutes.	
		-		
Overhauling of following Main engine starting		air system valves to be carried out:	DO overhauling of following valves.	ing valves.
Size	Otv	Test Pressure	SI Type	Size Qty
(i) Isolating valve 32NB	03	45 bar	Isolating valve	
32NB	03	45 bar	(ii) SDNR valve	32NB 01 No
	÷		parcs and marchal yard supply as per minutes.	ald supply as pell r
Overhauling of following Main engine sea war		ter system valves to be carried out:	DO overhauling of following valves.	ing valves.
Size	Qty	Test Pressure	SI Type	Size Qty
150NB	03	5 bar	SDNR valve	
esnB	03		(ii) SDNR valve	
40NB	02		Spares and material yar minutes.	ard supply as per RFIC
	150NB 65NB 40NB	~	03 03 3 02	03 5 bar (ii) (iii) 2 bar 5 bar 6 bar 6 bar 6 bar 6 bar 7 bar 7 bar 7 bar 7 bar 7 bar 8 bar 7 bar 8 ba

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SO I/C Electrical Rajratan	A A
SO 1/C Engg Rajratan	
M/s Shoft Shipyard	٨
M/s Krasny	the sea
M/s Chowgule	Angain-

						EA-3158											EA-3157										EA-3156
(vi) SDSL valve	(iii) SDNR valve	(ii) SDSL valve	(i) Gate valve	Type of valve	valves to be carried out:	Overhauling of following	(viii)Ball valve	(vii)Swing check valve	(vi)Ball valve	(v) SDNR Globe valve	(iv)Ball valve	(iii)SD Globe valve	(ii)SD Globe valve	(i) Ball valve	Type of valve	valves to be carried out:	Overhauling of following	(viii)Swing check valve	(vii)Ball valve	(vi)Shut off valve	(v) Shut off valve	(iv)SD Globe valve	(iii)Ball valve	(ii)Ball valve	(i) Ball valve	Type of valve	Overhauling of following Main engine fuel system valves
50NB	50NB	50NB	50NB	Size		Sea water sy	25NB	40NB	15NB	32NB	40NB	40NB	25NB	50NB	Size		Fuel transfer	32NB	25NB	32NB	15NB	15NB	10NB	50NB	32NB	<u>Size</u>	Main engine t
01	01	01	01	V10		stem for	01	02	02	01	02	02	02	02	OTV		and fillir	02	ឩ	02	2	02	02	01	01	V 10	fuel syste
5 bar	5 bar	5 bar	5 bar	Test Pressure		Sea water system for auxiliary equipments	6 bar	6 bar	6 bar	6 bar	6 bar	6 bar	6 bar	6 bar	Test Pressure		Fuel transfer and filling system including DG system	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	Test Pressure	em valves to be carried out:
	minutes.	spares and material yard supply as per KHIC	(II) SUSE VAIVE	<u> </u>	Sl Type	DO overhauling of following valves		minutes.	Spares and material yard supply as per RFIC	(vii) Swing check valve	\square		(ii) So Clobe valve	(iii) SD Globe valve	_	Sl Type	DO overhauling of following valves		minutes.	Spares and material yard supply as per RFIC		_[_	(iii) Ball Valve		Sl Type	DO overhauling of following valves
		yard supply as p	ONI TO GRIDE	_	Size Qty	wing valves.			yard supply as po	40NB 01 No	ļ	\rightarrow	+	JONE Of No			wing valves.			yard supply as pe	\vdash			10NB 01 No	+		wing valves.
		er KFIC							ar RFIC											# RFIC							

	The state of the s	M/s Chowgule
	thing	M/s Krasny
(Zo	M/s Shoft Shipyard
	SE 5	SO I/C Engg Rajratan
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	Lev 2	SO I/C Hull Rajratan
	OM)	CGRPT (Srt) Rep
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CVCTEM L	SYSTEM DIDE I INES	777				
FA-3159	Chemical clean	Chemical cleaning and prescure tecting of DO	tocting of DC			
	Pine line	nig dila pressure Size	e tesuing of RC I enaith		piant pipelines to be carried out: Material	DO. Material yard supply.
	(i) Product water line		1 mtrs	SS	5 har	renewal II aliy against AWKF,
	(ii)Brine line		1 mtrs	SS	5 har	
	(iii)Raw water line			Cu-Ni	5 bar	
EA-3160	Chemical clean	Chemical cleaning and pressure testing of AC	testing of AC	1	sea water pipeline to be carried out:	DO. Material vard supply.
	Pipe line	Size	Length		Th	Renewal if any against AWRF.
	(i) Suction line		n 2 mtrs	Cu-Ni	5 bar	
	(ii)Discharge line	e 50mm	n 2 mtrs	Cu-Ni	5 bar	
EA-3161	Chemical cleaning		testing of Fre	esh water hy	and pressure testing of Fresh water hydrophore system pipelines	DO 50% only. Material yard supply.
	to be carried out:					Renewal if any against AWRF.
	Size	Length	Material		집	
	(i) 50 mm	5 mtrs	Copper		5 bar	
	(ii) 32 mm	5 mtrs	Copper		5 bar	
	(iii) 25 mm	20 mtrs			5 bar	
	(iv) 15 mm	05 mtrs			5 bar	
:	(v) 12 mm	25 mtrs			5 bar	
EA-3162	Chemical cleani	ing and pressure	testing of Fir	e main and t	Chemical cleaning and pressure testing of Fire main and bilge system pipeline to	DO 50% only. Material yard supply.
	be carried out:				•	Renewal if any against AWRF.
	Size	Length	Materi	la l	TP	
		05 mtrs	J-nO S	7	6 bar	
-,		35 mtrs	-Cu-l	罗	6 bar	
· 1-2-	_	10 mtrs			6 bar	
	_	10 mtrs			6 bar	
		05 mtrs			6 bar	
		02 mtrs		Cu-Ni 6	6 bar	
		05 mtrs			4 bar	
	(viii) 65 mm	15 mtrs	SS		4 bar	
		20 mtrs			4 bar	
	(x) 40 mm	05 mtrs	SS		4 bar	
M/s	M/s Krasny				CGR	
	•	Simpyanu Raj	Rajratan Rajr	Rajratan Ra	nuli Rep Rajratan	Rajratan CGDHQ-1
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	EA-3166								EA-3165					EA-3164						EA-3163		
<u>Size</u> (i) 32 mm	Chemical cleaning and pressure testing of Starting air system for Main engine pipelines to be carried out:	(v) 10 mm		(iii) 25 mm	(ii) 32 mm	(i) 50 mm	Size	be carried out:	Chemical cleaning and pressure testing of Fuel system for main engine pipelir	(ii) 15 mm	(i) 20 mm	Size	to be carried out:	Chemical cleaning and	(iii) 8 mm	(ii) 12 mm	(i) 15 mm	Size	engine pipelines to be carried out:	Chemical cleaning and pressure testing of Compressed air system other than	(xii) 20 mm	(xi) 25 mm
Length 12 mtrs	d pressure testing of out:	10 mtrs	10 mtrs	10 mtrs	10 mtrs	10 mtrs	Length		d pressure testing	05 mtrs	10 mtrs	<u>Length</u>		and pressure testing of Lub oil system pipelines	10 mtrs	05 mtrs	15 mtrs	Length	e carried out:	d pressure testing o	5 mtrs	03 mtrs
Material SS	of Starting air syst	SS	SS	SS	SS	SS	<u>Material</u>		of Fuel system for	SS	SS	<u>Material</u>		of Lub oil system p	Copper	SS	SS	<u>Material</u>		of Compressed air	SS 4	
TP 45 bar	em for Main engine	5 bar	5 bar	5 bar	5 bar	5 bar	P		main engine pipelines to	4 bar	4 bar	Ħ		oipelines	12 bar	12 bar	12 bar	<u>∏</u>		system other than main	4 bar	4 bar
	Renewal if any against AWRF.							Renewal if any against AWRF.					Renewal if any against AWRF.	DO 50% only. Material yard supply.					Renewal if any against AWRF.	DO 50% only. Material yard supply.		

	S	T -
١	Non-	M/S Chowgule
	Prod	M/s Krasny
	Q,	M/s Short Shipyard
	June 3	SO I/C Engg Rajratan
	AND D	SO I/C Electrical Rajratan
	Les y	SO I/C Hull Rajratan
•	J. R. J.	CGRPT (Srt) Rep
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	A	RTO (Refit)

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EA-510/	Chemical cleaning are to be carried out:	nd pressure testing (of Main Engine :	Chemical cleaning and pressure testing of Main Engine sea water system pipelines to be carried out:	DO 50% only. Material yard supply.
	נט מכי כמוווכם טמני	1			Kenewal II any against AWKF.
	Size	Length	Material	립	
		10 mtrs	Cu-Ni	5 bar	
	_	15 mtrs	Cn-Ni	5 bar	
	_	10 mtrs	Cn-Ni	5 bar	
	(iv) 40 mm	15 mtrs	Cu-Ni	5 bar	
	(v) 15 mm	05 mtrs	Cu-Ni	5 bar	
	(vi) 12 mm	10 mtrs	Cu-Ni	5 bar	
EA-3168	Chemical cleaning and pressure testing of Fuel	d pressure testing		oil transfer and filling system	DO 50% only. Material vard supply.
	including DG pipelines to be carried out:	es to be carried out:		•	Renewal if any against AWRF.
	Size	Length	Material	4L	
•	(i) 50 mm	15 mtrs	SS	6 bar	
	(ii) 40 mm	10 mtrs	SS	6 bar	
		05 mtrs	SS	6 bar	
	(iv) 15 mm	10 mtrs	SS	6 bar	
	(v) 08 mm	10 mtrs	SS	6 bar	
EA-3169	Chemical cleaning and pressure testing of Sea	nd pressure testing		water system for auxiliary	DO 50% only. Material yard supply.
	equipments pipelines to be carried out:	s to be carried out:			Renewal if any against AWRF.
	Size	Length	Material	Ial	1
	(i) 50 mm	ח 10 mtrs	Cu-Ni	Ni 6 bar	
EA-3170	Chemical cleaning ar	nd pressure testing (of sprinklers of r	zine compartment and	DO. Material yard supply.
	CRN 91 gun to be carried. (Qty - 11 Nos, Mat - Yard Supply)	irried. (Qty – 11 Nos	2. Mat - Yard Su	(Alddi	Renewal if any against AWRF.
EA-3171	Carry out calibration of following gauges fire an	of following gauges	ifire and bilge system:	ystem:	DO. Calibration certificate from authorised firm
	Pressure gauge: -1 to +1 bar, Qty: 06 Nos	o +1 bar, Qty: 06 N			to be provided.
	Pressure gauge: 0 to 7 bar, Qty: 06 Nos	7 bar, Qty: 06 Nos			
GEAR BO	K MAKE :M/S ZF MA	RINE MODEL : ZE	7600 (TOTAL	GEAR BOX MAKE :M/S ZF MARINE MODEL : ZF 7600 (TOTAL QTY:-03 NOS), PAC ; M/S DYNATRON SERVICES.	S DYNATRON SERVICES,
EB-3172	All three gear box co	olers (heat exchang	ers) to be chem	All three gear box coolers (heat exchangers) to be chemically cleaned and pressure Delete.	Delete.
	tested. (Test pressure-06 bar) material yard supply	e-06 bar) material y	ard supply		

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A CANA	M/s Chowgule			- 13																									·		EA-3173
Rock	M/s Krasny	(V) HI	(E)	(t)			(q) S	(p)	(n) E	(m) C		R S	(j)	(h) A	(g) A		_	(d) P	(c) M		(a) M	signatures.	actions to	analysis is	case the v	bottom of	horizontal d	be taken o	carried out	Noise and	NOISE AN
Zo	M/s Shoft Shipyard	Fire and G5 pump	Bilge and GS pump	Engine room blowers	MCR Compartment	Anchor and Mooring Capstan	STP and vacuum toilet system	RO Plant	Emergency DA	Condenser Pump	Centrifuges	HP Air Compressor	Main AHU	A/C Compressor	AC Foundation	Water Jets	Diesel Alternators	Plummer block	Main shaft	Gear box	Main Engines	•	be taken based	to be carried	ibration levels	equipment's ar	directions. Also	taken on the equipment bearing points in	carried out during pre-refit and post-refit trials.	and vibration analysis of the	NOISE AND VIBRATION ANALYSIS
\subsection \text{\frac{1}{2}} \text{\frac{1}} \text{\frac{1}{2}} \text{\frac{1}{2}} \text{\frac{1}{2}} \tex	SO I/C Engg Rajratan		ಕ	vers	nt	ring Capstan	າ toilet system			0		ör					O,							out to find the	are more th	nti-vibration p	the vibration	nent bearing	fit and post-r	lysis of the	NALYSIS
J. J.	SO I/C Electrical Rajratan	ON 10-	-01 No	-06 Nos	-01 No	-03 Nos		-01 No	-01 No	-01 Nos	-01 Nos	-02 Nos	-01 Nos	-02 Nos	-01 Nos	-03 Nos	-03 Nos	-05 Nos	-03 Nos	-03 Nos	-03 Nos		on recommendations	ne cause of	an the acce	pads to know	s readings a	points in the		following M.	
The state of the s	SO I/C Hull Rajratan																						s after analysis of	analysis is to be carried out to find the cause of excessive vibration.	case the vibration levels are more than the accepted level detailed	bottom of equipment's anti-vibration pads to know the level of attenuation. In	horizontal directions. Also the vibrations readings are to be taken on the top and	the axial, radial	Vibration measurements are to	Machineries/Equipments	
000	CGRPT (Srt) Rep																						s of vibration	tion. Remedial	iled frequency	attenuation. In	on the top and	axial, radial, vertical and	ements are to	pments to be	
7	CO Rajratan																							-					para 19 of RFIC minutes.	undertake nois	DO except sl (f
	DTO CGDHQ-1																												C minutes.	undertake noise and vibration analysis as per	DO except sl (f), (k), (p), (q) and (r). Yard to
A	RTO (Refit)																													analysis as per	nd (r). Yard to

Exhaust gas leakage obserdeteriorated/ corroded. Bello 100 NB,114.3 x 6 mm (OD x (a) Removal and refitting (b) Renewal of HT bolts r (c) Renewal of HT bolts r (d) Post completion of tria Chequered plate supporting spaces. supporting frames (Approx)). Plate to be sec Aluminium. Total no of SS sc PME and CME Paint Pealed scheme of OEM. TERNATOR, MAKE:- CUMP H-1. Test engine on load and H-1. Test engine major overhaulir H-3. Engine major overhaulir H-5. Clean and check all disn H-5. Check crankshaft dimen H-7. Check condition of con in the condition of condition and check condition of	Exhaust gas leakage observed from Centre DA exhaust bellow. Bellow is found deteriorated/ corroded. Bellow to be manufactured as per sample (Mat- MS, size- 100 NB,114.3 x 6 mm (OD x THK) 01 No) In way job includes following:- (a) Removal and refitting of exhaust bellow from position. (b) Renewal of HT bolts nuts of both flange gaskets. (c) Renewal of both flange gaskets. (d) Post completion of trials lagging to be done as per sample.	Chequered plate supporting frames found broken at various places in machinery DO. Material yard supply. All in way jobs spaces. supporting frames to be fabricated. (Total length of frame: 20 Mtrs included. (Approx.)). Plate to be secured with SS screws. Supporting Frame Material: Aluminium. Total no of SS screws: 150 Nos (Approx.)	PME and CME Paint Pealed off at many places. To be Spray Painted as per paint DO. Material including heat resistant paint yard scheme of OEM.	4INS INDIA LTD PUNE, TYPE:- 6 CTA 8.3 D(M) 120 KW	to be carried out. Jobs for each DA le, Type:- 6 CTA 8.3 D(M) 120 Kw]	record all complaints and engine parameters. Spares CG supply	ig (engine to be removed from base rail)	cale cooling system	nantiled components.	sion and regrind if required.	H-7. Check condition of connecting rod and main bearing in line with crankshaft
	haust gas leakage observed from Centre Iteriorated/ corroded. Bellow to be manufact 0 NB,114.3 x 6 mm (OD x THK) 01 No) In w Removal and refitting of exhaust bellow Renewal of HT bolts nuts of both flange Renewal of both flange gaskets. Post completion of trials lagging to be d	Chequered plate supporting frames found broken at spaces. supporting frames to be fabricated. (Tota (Approx)). Plate to be secured with SS screws. Aluminium. Total no of SS screws: 150 Nos (Approx)	PME and CME Paint Pealed off at many places. To scheme of OEM.	DIESEL ALTERNATOR, MAKE:- CUMMINS INDIA LTD PUN	12000 hourly routines on Port and Centre DA to be are as follows:-[Make:- Cummins India Ltd Pune, Ty	H-1. Test engine on load and record all complaints and engine parameters.	H-3. Engine major overhauling (engine to be removed from base rail)	H-4. Dismantle engine. De-scale cooling system	H-5. Clean and check all dismantled components.	H-6. Check crankshaft dimension and regrind if required.	H-7. Check condition of connecting rod and main size, replace if required.

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SO I/C Engg Rajratan	3/2
M/s Shoft Shipyard	8
M/s Krasny	to all
M/s Chowgule	Lagain

	D-13. Check the condition of engine mounts, renew if required.	EA-3198
	D-12. Replace fresh water pump.	EA-3197
	D-11. Replace thermostat along with seal	EA-3196
	D-10. Check fuel tubings. Replace ferules and rubber gaskets	EA-3195
	D-9. Check all engine mounted safeties for functionality and calibrate gauges. Replace if required.	EA-3194
	D-8. Clean heat exchangers and pressure test.	EA-3193
	D-7. Calibrate fuel injecton pump (fip), PT pump and injectors.	EA-3192
	D-6. Overhaul turbocharger.	EA-3191
	D-3. Replace all rubber hoses/clamps of fuel, coolant lub oil and air system.	EA-3190
	H-13. Start engine and carry out load trials. Record all parameters.	EA-3189
	H-12. Mount engine on the base rail and couple to alternator after checking coupling alignment.	EA-3188
	H-11. Replace all engine related wiring harness.	EA-3187
EA-3189 to be carried out in conjunction with LA-5022. Spares CG supply	H-10. Check cylinder head, clean/de-carbonize and reassemble with all valves, guides, spring and related parts.	EA-3186
DA through PAC firm/authorized dealer of M/s Cummins.	H-9. Check and recondition or replace starting motor and battery charger alternator.	EA-3185
DO EA-3184 to EA-3188 & EA-3190 to EA-3198 as part of 12000 hrly routine on port and centre	H-8. Replace sleeves/liners on cylinder block if required.	EA-3184

,	Colon 1	M/s Chowgule
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DO EA-3199 to EA-3200 as part of 12000 hrly	routine on port and centre DA through PAC	firm/authorized dealer of M/s Cummins.	Spares CG supply.	
EA-3199 C-7. Check vibration dampers.		EA-3200 C-10. Check sea water pump and replace it if required.		
EA-3199		EA-3200		

	
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M/s Shoft Shipyard	8
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UNDERWATER PACKAGE (LA-5001 to LA-5018) ICCP SYSTEM, MAKE: M/S CATHELCO, TYPE- I, LA-5001 Clean and inspect ICCP anodes and damage. Record insulation of anodes at LA-5002 Peeled off shield paint and paste aroun			MAIN	MAIN DEFECT LIST	-ELECTRICAL			
INDERWATER P ICCP SYSTEM, M LA-5001 Clean dam LA-5002 Peek			DESCI	DESCRIPTION			ETNA! DET	FINAL RETC BEMABKS
LA-5001 Clean dam LA-5002 Peek	ACKAGE (LA-	5001 to LA-	5018)					
	1AKE: M/S CA	THELCO, TY	PE- I/P-23	/P-230V AC & O/P-24V DC		20 AMPS, PAC FIRM	: M/S CATHELCO. MUMBAT	CO. MUMBA
1	Clean and inspect ICCP anodes and	ICCP anodes	and refere	reference electrodes	(02 each) for a	any mechanical		under AMC.
	od off chiold no	Sulation of an	odes and rei	electrodes wit	Dooled off chiefd point and most and relief electrodes with respect to hull.			
.0002	atod The cuite	illic alid paste	s around une	anodes and re	recied on smeld paint and paste around the anodes and reference electrodes of ICCP to be	s or ICCP to be		
	ated, life suite	ace piepaiauc	on tor recoal	ing is required	recoated. The surface preparation for recoaung is required as same as that of new coating	or new coating		
(are	a uz sq Mitr ap	ıprox). Meas∟ ≓ed ent en b	ire the resist	rance between	(area UZ 59 Mrt approx). Measure the resistance between hull and anode after drying up.	after drying up.		
Seep	nose test to be callied out oil boll all seepage in junction boxes/cofferdams	hoxes/coffer	our arrones o	ina born relere	riose test to be carried out oil both anoues and both reference electrodes to find any water Seepage in junction boxes/cofferdams	rind any water		
LA-5003 Rene	Renew shaft grounding Ag/ AgCl brushes (Otv 06 nos)	Jing Ag/ AgCl	brushes (Ot	v 06 nos).		;		
LA-5004 Over	Overhauling of control	ontrol panel.	. Check all	Il the circuit	and thoroughly	/ inspect the		
wirin	wiring/unit/sub-unit.					<u>_</u>		
LA-5005 Clear	n and preserve	all anodes ar	d reference	electrodes afte	Clean and preserve all anodes and reference electrodes after docking and ensure cleaning of	sure cleaning of	,	
same	same before undocking.	king.		•)	ה		
LA-5006 Porta	able ICCP refere	ence electrod	e be calibrat	ed and issued	Portable ICCP reference electrode be calibrated and issued calibration certificate.	ate.	Delete.	
ECHO SOUNDER (MAKE: SKIPPER, NORWAY,	(MAKE: SKI	PPER, NOR		EL: GDS 101	MODEL: GDS 101) PAC FIRM: M/S NORINCO PRIVATE LTD, MUMBAI.	S NORINCO PE	SIVATE LTD, MI	JMBAI.
LA-5007 Chec	Check condition of transducer mounts	transducer mo		tets for corrosic	brackets for corrosion and repair if needed	seded.	Do through	PAC
LA-5008 Carn	y out depth cal	libration of ec	tho sounder	during dry do	Carry out depth calibration of echo sounder during dry docking by simulation through PAC	on through PAC	M/s Norinco Private Ltd, Mumbai	vate Ltd, Mu
firm.	firm. Calibration certificate to be produced.	tificate to be	produced.			ł	for SL. LA 5007,	007, LA-5009
LA-5009 Chec	Check external transducer condition of	sducer condit	ion of senso	sensor pins for build up or wear.	up or wear.		EA-5012. Delete	
LA-5010 Oper	Open output distribution junction box	ution junction	n box and cl	neck all termin	and check all terminal block connections and tighten	ons and tighten	LA-5013. Material	_
-	all connections. Check the insulation of cables and record.	sck the insular	tion of cable	s and record.			Spares CG supply.	ıly.
LA-5011 Over	Overnaul the equipment and replac accuracy of readings to be checked.	ment and rep s to be check	vlace defectiv ed.	e components	Overhaul the equipment and replace defective components. Performance of equipment and accuracy of readings to be checked.	equipment and		
LA-5012 On c	On dry docking of vessel, after seating on blocks, clean and	vessel, after	r seating or	blocks, clean		preserve transducers and		
befo	before undocking ensure preservation thoroughly cleaned. Clean and inspect	ensure preser	vation mate	rial to be remoduled		icers are to be		
sounder	ider.		The production	ממככו מוווא		Store) of early		
M/s M/s Krasny Chowgule	ny M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	CO Rajratan	DTO CGDHQ-1	RTO (Refit)
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	makerial and an in way Jobs direct yand scope)
	to be checked. Ensure that the alternator shaft is properly aligned with prime mover. (All
All lit-way Jobs Hiciarca.	through potified agencies and shown to ship staff prior replacement. Rotor-stator clearance
Check the insulation of certified bearings yard supply.	windings, cleaning, varnishing and baking of windings to be done. Check the insulation of
DO. Material including OEM	LA-5019 Overhaul complete generator including starter motor and dynamo. Thoroughly inspect the DO. Material including
	(120 KW - 02, 80 KW - 01)
HZ, QTY 03 NOS	DIESEL ALTERNATORS (PORT, CENTER & STBD) MAKE: NEWAGE STAMFORD, 415 V, 3 PH, 50 HZ, QTY 03 NOS
	undocking ensure preservation material is removed and transducers are thoroughly cleaned.
	LA-5018 On dry docking of vessel, after sitting on blocks, clean and preserve the sensor and before
	procedure with minimum three calibration points.
	LA-5017 Overhaul the equipment and carry out calibration of EM Log by measured distance run
	them wherever necessary and check the insulation of same and record.
	loose. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew
supply. Spares CG supply.	LA-5016 Open output distribution junction box and check all terminal block connections and tighten if supply. Spares CG supply.
5014 to EA-5018. Material yard	water.
Integrated system for SL. LA	LA-5015 Check external transducer condition of sensor pins for build up or wear and clean with fresh
Do through M/s Elcome	LA-5014 Check condition of transducer mounts / brackets for corrosion and repair if needed.
	PAC FIRM : M/S TRANSAS MARINE, MUMBAI
	ELECTRO MAGNETIC SPEED AND DISTANCE LOG, (MAKE:WALKER, MODEL:P110 7080)
	record.
	LA-5013 Check insulation and continuity of cables from both transducers to electronic unit and

	<u> </u>			
d	11 m	-	Chowgule	M/s
	Rica	=		M/s Krasny
			Shipyard	M/s Shoft
	(wingh	Rajratan /	Engg	SO I/C
	Fall,	Rajratan	Electrical	3/I 0S
,	La inex	Rajratan	Hull	S0 I/C
	(Jach))	Rep	CGRPT (Srt)
1	Jan J	-	Rajratan	8
	1	O	CGDHQ-1	DTO
	X)		RTO (Refit)

LA-5020		DO. Heat resistant paint yard supply.
LA-5021	Complete overhaul of DA starting control panel and alternator circuits to be carried out including governor, governor motors, AVR, battery circuit, control /monitoring PCBs, wirings and exciter by stripping thoroughly. (All material and all in way jobs under yard scope)	DO through authorised firm. Material yard supply as per RFIC minutes
LA-5022	110% Parallel Is and	DO. Yard to carry out load trials on maximum sustainable ships load for stbd DA and external load for port & center DAs.
LA-5023	ole of	DO through PAC /authorized dealer of M/s Cummins. PAC firm report to be submitted. Spares CG supply. Material yard supply.
LA-5024	Calibrate following meters in Generator control panel and provide calibration certificate. a) RPM meter - 03 Nos b) Exhaust temp - 03 Nos c) Fresh water temp - 03 Nos d) Sea water pressure - 03 Nos e) Lub oil temp - 03 Nos f) Lub oil pressure - 03 Nos	DO only calibration. Yard to provide calibration certificate. Renewal if any against CG supply.

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RTO (Refit)	B
DTO CGDHQ-1	· val
CO Rajratan	dus,
CGRPT (Srt) Rep	
SO I/C Hull Rajratan	28
SO I/C Electrical Rajratan	She
SO I/C Engg Rajratan	33
M/s Shoft Shipyard	8
M/s Krasny	porte
M/s Chowgule	Kerten

DO. Material yard supply.	All indications of outgoing feeders to be checked & proved.	LA-5029
	incoming power supply cables. Check the incoming power supply and take corrective action to regulate the supply if required.	
A Company of the Comp	serviced and proved. Insulation test of complete MSB to be carried out including main	
DO. Material vard supply.	Earth lamp circuitry, interlocking, space heater circuits & synchronizing circuits to be	LA-5028
	defective components.	
	deteriorated wiring to be renewed (Mat yard supply). Auto motorized mechanism to be	
DO. Material yard supply.	Overhaul 03 in no ACBs. Rating 350VA, 415 V 250 Amps. All fixed and moving contacts and	LA-5027
	(k) Double voltmeter (0-500V) - 01 No	
	(j) Double frequency meter (45-55 Hz) - 01 No	
	ĭ	
	(g) Frequency meter (45-55 Hz) - 04 Nos	
	(f) Volt meter (0-500 V) - 04 Nos	
spares.	(e) Volt meter (0-300 V) - 01 No	
Renewal if any against NA	(d) Ammeter (0-200 Amps) - 02 Nos	
firm. Spares CG supply.	(c) Ammeter (0-300 Amps) - 02 Nos	
certificate through authorized	(b) KW meters (0-100 KW) - 01 No	
Yard to provide calibration	(a) KW meters (0-150 KW) - 02 Nos	
DO calibration only.	Calibrate all meters of MSB. Calibration certificate to be issued.	LA-5026
	(d) Insulation monitor relay - 01 no.	
	(c) Reverse power tripping relay - 03 nos	
three DAs.	(b) Under voltage protection relay - 08 nos	
Prove paralleling operation for all	(a) Over current protection/short circuit relay - 03 nos	
Repairs if any against AWRF.	material and all in way jobs under yard scope)	
certificate. Spares CG supply.	calibrated and proved or replaced if found defective. Calibration certificate to be issued. (all	
Yard to provide calibration		
DO.	Overhaul Complete MSB, clean all the contacts, switches, relays and ACR and replace all	LA -5025
	MAIN SWITCH BOARD (MAKE: LARSON & TUBRO LTD) OEM FIRM: M/S LARSON & TUBRO LTD	MAIN SWI

	6	
•	Region	M/s Chowgule
	The state of the s	M/s Krasny
,		M/s Shoft Shipyard
	√£.	SO I/C Engg Rajratan
	9/2/	SO I/C Electrical Rajratan
	Sex	SO I/C Hull Rajratan
	Monday	CGRPT (Srt) Rep
7	Jan C	CO Rajratan
1		DTO CGDHQ-1
	R	RTO (Refit)

EMERGE	EMERGENCY DA (MAKE: M/s ELMOT, TEFC, 2.5KW 230V 1Ph 50Hz, 0.8 LAG)	4/s ELMOT, TE	FC, 2.5KW ;	230V 1Ph 50	1z, 0.8 LAG)		
LA-5030	Overhaul the alternator completely including starter motor. Bearings to be renewed. Bearings should be quality control cleared through notified agencies and shown to ship staff prior replacement.	ernator complete y control cleare	ely including state of through no	tarter motor. B stified agencies	Overhaul the alternator completely including starter motor. Bearings to be renewed. Bearings should be quality control cleared through notified agencies and shown to ship staff prior replacement.	ewed. Bearings ship staff prior	DO. OEM certified bearings and material yard supply.
LA-5031	Check the performance of AVR and HVR. DA to be proved with ships load	mance of AVR al	nd HVR. DA to	be proved wi	th ships load.		DO.
LA-5032	Complete spray painting of the DA using international marine equipment paint. (Paint yard supply)	painting of the (Paint yard su	e DA using pply)	international		standard heat resistant	Delete.
LA-5033	Calibrate following meters of emergency DA (a) Voltmeter (0-300 V) - 01 (b) Ammeter (0-50 Amps) - 01 (c) Frequency meter (45-55 Hz) - 01 (d) KW meter digital - 01	ig meters of eme 300 V) 50 Amps) ster (45-55 Hz) jital		anel and calibration of the control	panel and calibration certificate to be issued. No No No No	be issued.	DO only calibration. Yard to provide calibration certificate. Spares CG supply.
LA-5034	Carry out complete overhauling of panel. All connectors to be renewed as per rating.	lete overhauling renewed as per	of panel. A rating.		Battery charging circuits to be proved. All	be proved. All	DO. Material yard supply.
LA-5035	Calibration of OLRs (10-16 Amps-01 no, certificate to be issued.	Rs (10-16 Amp: Issued.		0.4-0.63 Amps- 01 no.) using	5	set. Calibration	DO only calibration. Yard to provide calibration certificate.
LA-5036	Painting of panel by using international m paint.	by using internation	ational marine	standard equ	arine standard equipment paint after scrapping old	r scrapping old	Delete.
MAIN ENGINE C Pvt Ltd, Mumbai	INE CONTROLS	(MTU GERMAI	ΝΥ, ΤΥΡΕ 16	V 4000 M90)	PAC FIRM M/s	MTU, PUNE/ N	MAIN ENGINE CONTROLS (MTU GERMANY, TYPE 16V 4000 M90) PAC FIRM M/s MTU, PUNE/ M/s Yeoman Marine Services Pvt Ltd, Mumbai
LA-5037	rate in the function of the fu	Calibrate following sensors for safeties cutor proper functioning for permissible limit. Pressure sensors: (a) Lube oil Trip (1.2 bar) (b) Lube oil Alarm (1.5 bar) (c) S/W Alarm (0.4 bar) (d) Fuel oil Alarm (3.0 bar) (e) Gear box lube oil Alarm(0.2 bar) (f) Cooling water Alarm(0.5bar) (g) Gear box control oil Trip (15.5 b		ut /alarm and)	cutout /alarm and parameters to be recorded for	be recorded for	DO through PAC firm M/s MTU/M/s YMPL. PAC firm report to be submitted. Spares CG supply.
-	M/s Krasny M/s Shoft		SO I/C	SO I/C	CGRPT (Srt)	03.	DTO RTO (Refit)
Chowgule	Shipyard	d Engg Rajratan	Electrical Rajratan	Hull Rajratan	Rep	Rajratan	CGDHQ-1
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Mayor -	M/s Chowgule	LA-5041	LB-5040	LA-5039	LA-5038
Trock	M/s Krasny				
	M/s Shoft Shipyard	nal checks o and calibrate Desc i Boatsv	nk sensor (for satisfact	vel sensors of 05 ion certificate to be	(h) Gear box cor (j) Starting air Al: (k) Stern tube flo Temperature se (k) Stern tube flo Temperature se (a) Exhaust gas / (b) Gear box lube (c) Gear box lube (d) Engine lube of (e) Engine coolin (f) Charge air ter Speed sensors: (a) Engine speed (2415 rpm) (b) Shaft speed sertificate to be issued by Performance to be proved.
Say Mrs	SO I/C Engg Rajratan	lecks of bilge level alibrated. Calibrati Description Boatswain store	Fuel Tank sensor (19-22) found proved for satisfactory operation.	<u></u> .	(h) Gear box control oil Alarm(1) (j) Starting air Alarm(20 bar) (k) Stern tube flow water (alarm) Temperature sensors: (a) Exhaust gas Alarm (750°c) (b) Gear box lube oil Alarm (90°c) (c) Gear box lube oil Alarm (92°c) (d) Engine lube oil Alarm (92°c) (e) Engine cooling water Alarm(9) (f) Charge air temperature Alarm(9) (f) Charge sensors: (a) Engine speed sensors Alarm (2415 rpm) (b) Shaft speed sensors Alarm (2) control levers in ECR and whee to be issued by OEM. Reading once to be proved.
A ST	SO I/C Electrical Rajratan	sensors (14 on certificate	5	•	h) Gear box control oil Alarm(16.5bar) j) Starting air Alarm(20 bar) k) Stern tube flow water (alarm) [emperature sensors: a) Exhaust gas Alarm (750°c) b) Gear box lube oil Alarm (90°c) c) Gear box lube oil Alarm (92°c) d) Engine lube oil Alarm (92°c) f) Charge air temperature Alarm(90°c) f) Charge air temperature Alarm(90°c) Speed sensors: a) Engine speed sensors Alarm 2415 rpm) b) Shaft speed sensors Alarm (2100 rpm) control levers in ECR and wheel house to be issued by OEM. Reading of all control to be be proved.
Sign	SO I/C Hull Rajratan	Functional checks of bilge level sensors (14 nos) at following location MCS-5 and calibrated. Calibration certificate to be produced by OEM. S.no. Description Qty (a) Boatswain store 01	be non-operational. To	and 01 no t	5.5bar) 90°c) 00 rpm) house to be all control le
	CGRPT (Srt) Rep	<u> </u>	be renewed	01 no fresh water tank to be	(h) Gear box control oil Alarm(16.5bar) - 03 (j) Starting air Alarm(20 bar) - 03 (k) Stern tube flow water (alarm) - 03 Temperature sensors:
	CO Rajratan	to be carried out with	and system to be	to be calibrated.	03 03 03 48 48 03 03 03 03 ibrated. Calibration ronized and record.
To.	DTO CGDHQ-1	M/s YMPL. PAC firm report to Spares CG supply		DO through PAC fi M/s YMPL. PAC firm report to Spares CG supply.	DO functional test system and carry adjustment. Jobs undertaken through M/s MTU/ M/s YMPL PAC firm report to be Spares CG supply.
M	RTO (Refit)	DO through PAC firm M/s MTU/M/s YMPL. PAC firm report to be submitted. Spares CG supply.	CG supply.	DO through PAC firm M/s MTU/ M/s YMPL. PAC firm report to be submitted. Spares CG supply.	DO functional test of control system and carry out readjustment. Jobs to be undertaken through PAC firm M/s MTU/ M/s YMPL. PAC firm report to be submitted. Spares CG supply.

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	<u>)</u>	VINDVIK IIIESS	SSE	ı	ī			
	(၁)	Magazin	Magazine compt	1	01			
	ਉ	Baggag	Baggage compt		01			
	(e)	Provisio	Provisional store	ı	01			
	Œ	Jr sailors WC	s WC	1	01			
	<u>(6)</u>	FER fwd port	l port	I	01			
	Œ	FER fw	Istbd	ı	01			
-	Œ	FER aft port	port	1	01			
	3	FER aft stbd	stbd	ı	01			
-	\odot	AER fwd	7	ı	01			
	(m)	AER aft		ı	01			
	Ξ	Water jet fwd	et fwd	ı	01			
	<u>(a</u>	Water jet aft	et aft	ı	01			
LA-5042	Functiona	I checks of	14 out of 1	.7 In Nos Do	ors/Hatch sens	Functional checks of 14 out of 17 In Nos Doors/Hatch sensors (Position Monitors) are to be	itors) are to be	DO through PAC firm M/s MTU/
	carried or	and certil	carried out and certificate to be issued.	ssued.		•	•	M/s YMPL. PAC firm report to be
								submitted.
								Spares CG supply.
LB-5043	on ui 60	os door/Ha	door/Hatch sensor	found defe	defective. Defect	to be rectified a	and proved for	DO through PAC firm M/s MTU/
	satisfacto	satisfactory operation.	'n.					M/s YMPL. PAC firm report to be
								submitted. Spares CG supply.
MCR AND WHEEL HOUSE CONSOLE	WHEEL H	OUSE CON	SOLE			!		
LA-5044	Overhau	il complet	Overhaul complete Engine control	_	Is in MCR and	panels in MCR and wheel House. All indication lights,	indication lights,	Delete.
	dimming	circuits to l	be proved fo	or proper ope	eration. Clean	dimming circuits to be proved for proper operation. Clean all the contacts, switches, relays,	witches, relays,	
	MCBs and	d replace o	MCBs and replace damaged contacts ii	ntacts if any	. Check for th	f any. Check for their proper operation. Check the	tion. Check the	
	insulation	of all the	internal wiri	ng cables, m	onitor all outp	insulation of all the internal wiring cables, monitor all outputs and all parameters are to be	eters are to be	
	recorded	for proper	functioning	of same w	ith permissible	recorded for proper functioning of same with permissible limits. All safeties/cutout to be	es/cutout to be	
	calibrated	proved an	d calibration	n certificate c	of PAC firm (M _/	calibrated proved and calibration certificate of PAC firm (M/S MTU, Pune) to be issued.	be issued. (All	
	material	and all in	way jobs	material and all in way jobs under yard scope	scope)		•	
LA-5045	Check the	mounting =	base for pro	pper function	ing / any corro	Check the mounting base for proper functioning / any corrosion and renew if required.	required.	Delete.
LA-5046	Functiona	I test and	calibration (of following	meters in MCR	Functional test and calibration of following meters in MCR and Wheel House to be carried	se to be carried	DO through PAC firm M/s MTU/
	out. Calib	ration certi	ficate to be	produced by	out. Calibration certificate to be produced by PAC Firm (M/s MTU, Pune):-	MTU, Pune):-		M/s YMPL.
-	M/s Krasny	M/s Shoft	S0 I/C	SO 1/C	S0 I/C	CGRPT (Srt)	8	DTO RTO (Refit)
Chownile		Shinvard	Fnan	Flortzinal		Ren	Dairatan	CEDHO-1

DTO CGDHQ-1 CO Rajratan CGRPT (Srt) Rep SO I/C Hull Rajratan SO I/C Electrical Rajratan SO I/C Engg Rajratan M/s Shoft Shipyard M/s Chowgule

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Ran	M/s Chowgule	LA-5050	LA-5049	LA- 5048	WATER JET LA- 5047
The Do	M/s Krasny M/s Shoft Shipyard	LA-5050 Following checks of 18 in no. distribution panels (415 V/230V AC and 24 V DC) to be carried out. (all material and all in way jobs under yard scope) a) Clean all contacts, switches, MCBs, transformer and relaysand check the proper operation of MCBs, switches & control units and replace the defective components with correct ratings. b) Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. c) Scrap old paint and apply new paint using international marine standard equipment paint.	LA-5049 Check the proper operating of MCBs, switches & control units, contactors and OLRs. Replace all contacts in contactor by using contactor kit. Check the insulation of the cable. Replace all the defective components. Repaint the control panel using international marine equipment standard paint after scrapping old paint. Check the functioning of MPU card (02 Nos) for overload, short circuit, and under voltage. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope)	Calibration and functional test of Feedback units for steering and reversing (total 06 Nos) to be carried out.	(M/S Carry c
Sing.	SO I/C Engg Rajratan	FOWER SYS f 18 in no. dis and all in wa s, switches, N s control units rcuit and tho y and check th y and apply new	perating of Mactor by using soments. Repair scrapping or	ctional test of	a) Shaft Speed indicator b) Reversing Position Indicator c) Engine Speed Indicator d) Bucket Position Indicator MEWA, SWEDEN), PAC FIR functional test of alarms, switc
Dagh.	SO I/C Electrical Rajratan	stribution pand tribution pand ay jobs under MCBs, transforms s and replace roughly insperioughly insperioughly insperioughly insperioughly insperioughly insperioughly insulation of the insula	KOLKATA 41 CBs, switches J contactor kit J contactor J con	Feedback un	ndicator ator cator AC FIRM M/ ns, switches an
Tres	SO I/C Hull Rajratan	els (415 V/23) els (415 V/23) er yard scopo rmer and rela the defective ct all wiring/ of same and r nternational n	L5/230 V AC & control un & control un & control using t. Check the is ol panel using elect the funct heck all the is heck all the is erever necess	its for steerin	: 06 Nos : 06 Nos : 06 Nos : 06 Nos S ROLLS ROY
John John Mary	CGRPT (Srt) Rep	OV AC and 24 V Doe) ysand check the posterior with components with unit/sub-unit/cable ecord. narine standard ecord.	its, contactors and its, contactors and its, contactors and insulation of the call international male international male international male included and thorous circuit and thorous any and check the ith included and check ith included and its and	ng and reversing (t	(a) Shaft Speed indicator : 06 Nos (b) Reversing Position Indicator : 06 Nos (c) Engine Speed Indicator : 06 Nos (d) Bucket Position Indicator : 06 Nos KAMEWA, SWEDEN), PAC FIRM M/S ROLLS ROYCE, MUMBAI but functional test of alarms, switches and pressure gauges.
	CO Rajratan	V DC) to be carried ne proper operation with correct ratings. ables, renew them d equipment paint.	and OLRs. Replace all e cable. Replace all marine equipment card (02 Nos) for roughly inspect all the insulation of	otal 06 Nos) to	
	DTO	DO as per Para 1 minutes. Material yard supply.	DO. Material v RFIC minutes.		PAC firm report to Spares CG supply. Do through PAC (M/s Kongsberg India Pvt Ltd.) . F
R	RTO (Refit)	Para 11 of RFIC	DO. Material yard supply as per RFIC minutes.	to be submitted. Spares CG supply. Do through PAC firm M/s RRMI (M/s Kongsberg Maritime CM India Pvt Ltd.) PAC firm report to be submitted. Spares CG supply.	PAC firm report to be submitted. Spares CG supply. Spares CG supply. Do through PAC firm M/s RRMI (M/s Kongsberg Maritime CM (M/s Kongsberg Maritime CM India Pvt Ltd.) . PAC firm report

	d) Check the corroded mounting platform and take corrective action	
LA-5051	Calibrate following meters of distribution board and replace if found defective. Calibration	DO calibration only. Yard to
	certificate to be issued.	·
	(a) Volt meter (0-30 Volt)-02 nos	Renewal if any against CG
	(b) Ammeter (0-01 Amps)- 01 no	
	(c) Ammeter (0-75 Amps)- 01 no	
A/C CONT	A/C CONTROL PANEL: MAKE; SWITCH AND CONTROL GEARS, MUMBAI	
LA-5052	Servicing of complete control / starter panel is to be carried out including following:-	DO as per Para 11 of RFIC
	(a) Clean all switches, MCBs, transformer and relays and check the proper operation of	minutes.
	MCBs, switches & control units. Renew all defective components with correct ratings.	Material yard supply.
	(b) Check all the power and control circuits and thoroughly inspect all the wiring/unit/sub-	
	unit/cables. All Control cables to be properly laid out. Cable insulation to be checked and	
	wherever necessary to be renewed.	
	(c) Check the corroded mounting platform and take corrective action.	
	(d) Renew all earthing straps. (All material and all in way jobs under yard scope)	
LA-5053	Calibrate 06 in no. OLRs (Capacity- 12-18 Amps -01 no, 30-37 Amps - 02 no, 16 – 24 Amps -	Delete.
*****	02 nos, 07 - 10 Amps - 01 no.) and replace the same if found defective. Calibration	
	certificate to be issued.	
LA-5054	Scrap old paint and apply new paint using international marine standard equipment paint	Delete.
	(Paint Yard supply).	
LA-5055	Renew all the contacts in contactor by using contactor kits (Make: Schneider Electric,	Delete.
	Model: LC1D18 - 02 Nos, LC1D38 - 04 Nos, LC1D12 - 02 Nos).	
LA-5056	Calibrate following meters. Calibration certificate to be issued.	DO calibration only. Yard to
	(a) Ammeter (0-30 Amps)-01 no	provide calibration certificate.
	(b) Ammeter (0-10 Amps)- 01 no	Renewal if any against CG
	(c) Ammeter (0-75 Amps)- 02 nos	supply.

M/s Krasny	M/s Short Shipyard	SO 1/C Engg Rajratan	SO 1/C Electrical Rajratan	SO 1/C Hull Rajratan	CGKP1 (Srt.) Rep	CO Rajratan	ССБРНО-1	KIO (Kefit)
	O	75	Je d	John State	Opport	Ams.	Cont	E.
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Lagar	M/s Chowgule	LA-5058	RO PLANT LA-5057
	M/s Krasny		4.
000	M/s Shoft Shipyard	Following Motors to be overhal of motors includes following: (a) Removal of motors (b) External and international marine stand (c) Re-impregnation (d) Re-balancing of Renewal of bear (e) Renewal of term (f) Checking of rotors (g) Renewal of corrulation (h) Renewal of corrulations. (i) Baking, bench to	ROCHEM, t control pate (control pand 0) wed) and 0 Potentiome o be checked arbour/sea arbour/sea arial and all
San Ja	SO I/C Engg Rajratan	Following Motors to be overhauled compl of motors includes following:- (a) Removal of motor from ship (b) External and internal bo International marine standard anti co (c) Re-impregnation / varnishir (d) Re-balancing of rotor and co (e) Renewal of bearings, bushe (f) Checking of rotor shaft and (g) Renewal of terminal box an (h) Renewal of corroded nuts a (i) Baking, bench trials after as (k) Starting and running curspecifications. (i) Preparation of the foundation (m) Running test after assemblic (m) Replace all earthing straps Bearings being renewed shall be quality of to ship's staff prior replacement.	MUMBAI Nel to be over a fin nos over ter, conducted and 3/2 wayed servo mothers. Replacin way jobs
Visa	SO I/C Electrical Rajratan	cors to be overhauled completely. (<u>all matures</u> udes following:- Removal of motor from ship and strip thouse the standard anti corrosive and equal marine standard from the seals, gasked the standard of terminal box and lugs. Renewal of corroded nuts and bolts. (Mature Baking, bench trials after assembling. Starting and running currents to be ons. Preparation of the foundation of motor and Running test after assembling & installation replace all earthing straps.	MAKE: ROCHEM, MUMBAI MODEL: ROCHEM RO plant control panel to be overhauled complete be renewed) and 03 in nos over load relays to ssued). Potentiometer, conductivity meters with switch to be checked. 3/2 way solenoid valve, pland pure water and servo motor control valve during harbour/sea trials. Replace the all defective All material and all in way jobs under yard scope) NOS
Local	SO I/C Huli Rajratan	Following Motors to be overhauled completely. (<u>all material under yard sco</u> of motors includes following:- (a) Removal of motor from ship and strip thoroughly (b) External and internal body of motor to be scraped International marine standard anti corrosive and equipment color pain (c) Re-impregnation / varnishing of windings. (d) Re-balancing of rotor and cooling fan. (e) Renewal of bearings, bushes, seals, gaskets and fan covers. (f) Checking of rotor shaft and bearing housing for flaws, cracks (g) Renewal of terminal box and lugs. (h) Renewal of corroded nuts and bolts. (Material SS) (g) Renewal of corroded nuts and bolts. (Material SS) (g) Renewal of the foundation of motor and re-fitment. (m) Starting and running currents to be measured and sepecifications. (i) Preparation of the foundation of motor and re-fitment. (m) Running test after assembling & installation onboard ship (n) Replace all earthing straps.	RO plant control panel to be overhauled completely. Contact strips of corbe renewed) and 03 in nos over load relays to be calibrated (calibratic issued). Potentiometer, conductivity meters with switch, flow switch to be checked. 3/2 way solenoid valve, pressure switch for raw and pure water and servo motor control valve to be serviced and sysduring harbour/sea trials. Replace the all defective components. (All material and all in way jobs under yard scope)
(DAR)	CGRPT (Srt) Rep	Following Motors to be overhauled completely. (all material under yard scope) Overhauling of motors includes following:- (a) Removal of motor from ship and strip thoroughly (b) External and internal body of motor to be scraped and painted w International marine standard anti corrosive and equipment color paint. (c) Re-impregnation / varnishing of windings. (d) Re-balancing of rotor and cooling fan. (e) Renewal of bearings, bushes, seals, gaskets and fan covers. (f) Checking of rotor shaft and bearing housing for flaws, cracks and corrosion. (g) Renewal of terminal box and lugs. (h) Renewal of corroded nuts and bolts. (Material SS) (j) Baking, bench trials after assembling. (k) Starting and running currents to be measured and should be as pecifications. (l) Preparation of the foundation of motor and re-fitment. (m) Running test after assembling & installation onboard ship (n) Replace all earthing straps.	RO plant control panel to be overhauled completely. Contact strips of contactors (03 nos to be renewed) and 03 in nos over load relays to be calibrated (calibration certificate to be issued). Potentiometer, conductivity meters with switch, flow switch, flow meter and level switch to be checked. 3/2 way solenoid valve, pressure switch for raw water, brine water and pure water and servo motor control valve to be serviced and system to be proved during harbour/sea trials. Replace the all defective components. (All material and all in way jobs under yard scope)
And the second	CO Rajratan	and painted with t. sand corrosion. should be as pergencies and shown	ps of contactors (03 nos to calibration certificate to be vitch, flow meter and level for raw water, brine water and system to be proved and system to be proved spares CG su
F	DTO DTO		EM, MUMB DO throu Rochem (India) Pvi Yard to certificate. Spares CG
A	RTO (Refit)	·	Jajh PAC firm M/s Separation systems Ltd., Mumbai. provide calibration Material yard supply. supply.

S	Motor description	Rating	Nos. Fitted	Location	
(I)	Galley supply / exhaust fan Motor	0.37 KW	02	Galley	DO. Scope of work for motor overhauling will be as per Para
(II)	Anchor capstan motor	5.5 KW	02	Foxle	11 SI (t) of RFIC minutes.
(III)	Emergency DA compt. Exhaust fan motor	0.157 KW	0.1	Emergency DA compt.	Delete.
(IV)	AHU motor	9.3 KW	01	ATU Compt	DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
S	Exhaust fan motor for CO's bathroom	0.062 KW	01	CO's bathroom	DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
(VI)	Naval store exhaust motor	0.157 KW	01	Naval Store	Delete.
(VII)	Baggage store supply fan motor	0.157 KW	01	Baggage store	Delete.
(VIII)	STP exhaust fan motor	0.318 KW	01	STP Compt	DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
(X)	STP supply fan motor	0.318 KW	01	STP Compt	DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
8	FM 200 Compt Supply Fan	0.157 KW	01	ATU Compt	Delete.
(R)	Water Jet compt. Supply fan motor	3.7 KW	01	Jet Compt	DO. Scope of work for motor overhauling will be as per Para
(XII)	Exhaust fan motor for SO'S & Navik bathroom	0.314 KW	01	Navik bathroom	DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
(IIIX)	Dirty oil pump motor	1.5 KW	01	FER	DO. Scope of work for motor

		
RTO (Refit)	Af	
DTO CGDHQ-1	Ta Ta	
CO Rajratan	James?	1
CGRPT (Srt) Rep	Dong	\
SO 1/C Hull Rajratan	Joseph .	
SO I/C Electrical Rajratan	A SULLEY OF THE PROPERTY OF TH	econe eco
SO I/C Engg Rajratan	yma (n)	
M/s Shoft Shipyard	Š)
M/s Krasny	bords	•
M/s Chowgule	ugan	

A BR	M/s Chowgule				, , , •••												
The state of the s	M/s Krasny	(XIX)	(III/XXX)	(II/XXX)	(IVXX)	(////	(VXXV)	(XXIII)	(IIXX)	(IXX)	(%)	(XBX)	(III/XX)	(II/XX)	(I/XX)	(XV)	(VIX)
Q	M/s Shoft Shipyard	Fwd E/R sup	Fwd E/R ventilation fan motors	Fuel oil trans	AC compressor motor	Exhaust fan bathroom	AC sea water pump motor(main)	Air compressor motor	Fuel oil purif	Fuel oil purif pump motor	HP pump mo	Cleaning pur plant)	Low pressure boomotor (RO plant)	Oily bilge wa	Fresh water Hydrophore pump motor	Bilge & fire pump motor	Bilge & GS pump motor
35	SO I/C Engg Rajratan	Fwd E/R supply fan motors	ıtilation fan	Fuel oil transfer pump motors	sor motor	Exhaust fan motor officer's bathroom	r pump	sor motor	Fuel oil purifier pump motor	Fuel oil purifier separator pump motor	HP pump motor(RO plant)	Cleaning pump motor(RO plant)	Low pressure booster pump motor (RO plant)	Oily bilge water separator motor	Hydrophore	oump motor	ump motor
7	SO I/C Electrical Rajratan	7.5 KW	3.7 KW	ors 2.2 KW	27 KW	0.318 KW	3.7 KW	7.5 KW	0.75 KW	2.2 KW	2.2 KW	0.33 KW	p 0.37 KW	1.1 KW	1.5 KW	15 KW	15 KW
too	SO I/C Hull Rajratan	02	02	02	02	01	01	02	01	01	01	01	01	01	02	01	01
THE X	CGRPT (Srt) Rep	Q/deck	Q/deck	FER	THR.	Officer's Bathroom	FER	FER	景	FER	Æ	ÆR	FER	FER	FER	AER	FER
7	CO Rajratan Î)					Bathroom									:		
West A	DTO RTO (Refit)		11 SI (t) of RFIC minutes.	DO. Scope of work for motor overhauling will be as per Para	Delete covered in EA-3088.	DO. Scope of work for motor overhauling will be as per Para			11 SI (t) of RFIC minutes.	DO. Scope of work for motor overhauling will be as per Para			Delete. Covered under EA-3084			— II SI (L) OI REIC IIIIIIULES.	overhauling will be as per Para

	(xxx)	Aft E/R ven	Aft E/R ventilation fan motors		3.7 KW	01	Q/deck		
	(DXXX	Aft E/R sup	Aft E/R supply fan motors		7.5 KW	01	O/deck		DO. Scope of work for motor overhauling will be as per Para 11.5l (t) of RFIC minutes.
	XXXII)	Electric mot	Electric motor for crane	7	7.5 KW	01	Quarter deck	×	DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
	(IIDXXX	Mooring cap	Mooring capstan motor	4.	4.0 KW	10	WJ Compt		DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
	(VIXXX	Paint store supply fan	supply fan	0	0.37 KW	01	Paint store		Delete, Undertaken under DFP.
¥	()XXX	Priming pur pump	Priming pump for bilge & GS pump		0.75 KW	01	FER		
	(IVXXVI	Priming pur pump	Priming pump for fire & GS pump		0.75 KW	01	AER		
	(vxxx	Portable Lul motor	Portable Lub oil transfer motor	Ö	0.55 KW	01	WJ Compt		
	XXXVI)	Hydraulic po	Hydraulic power pack motor		2.2 KW	03	02 – Fwd E/R 01 – Water Jet	/R Jet	DO. Scope of work for motor overhauling will be as per Para 11 SI (t) of RFIC minutes.
	(II/XXX	Garbage Dis	Garbage Disposal Motor	0.	0.55 KW	01	Galley		Delete.
SHORE CO	NNECTI	ON BOX(SC	SHORE CONNECTION BOX(SCB) 02 NOS (MAKE: M/S AIM ENGG)	(MAKE:	M/S AIM	ENGG)			
LA-5059	Comple (a) Ch comple (b) Cle	ete overhaulir neck conditior ete panel with	Complete overhauling of the shore connection box including following:- (a) Check condition of mounting bases and insulation of the cable an complete panel with equipment international marine paint. (b) Clean all contacts, switches, MCBs, relays, and check the property.	e connections and passes a passes are retributed in the connection and the connection are retributed in the connection are retribute	ction box ir and insulati inal marine	ncluding foll ion of the control paint.	ction box including following:- and insulation of the cable and record. Repaint the anal marine paint. relays, and check the proper operation of MCRs	. Repaint the	DO. Material yard supply as per RFIC minutes.
	switche correct (c) Ch	switches, control ur correct ratings. (c) Check the insula	switches, control units & Phase sequence me correct ratings. (c) Check the insulation of cables and record.	sequence s and rec	meter. Record.	splace all th	switches, control units & Phase sequence meter. Replace all the defective components with correct ratings. (c) Check the insulation of cables and record.	ponents with	
M/s M	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan		SO I/C Hull Rajratan	CGRPT (Srt) Rep	CO Rajratan	DTO RTO (Refit)
700	Do V	Ĉ	3/2	St.	8	18	John John J.	Just	A The state of the

Carryout complete overhauling/servicing of following: (a) Calibration of OLRs to be carried out by using CIT set (calibration certificate to be issued). (b) Check the corroded mounting bases and take corrective action if necessary. (c) Clean all contacts, switches, MCBs, relays & re-varnishing of transformer and check the proper operating of MCBs, switches, control units, contactors, transformer and check the proper operation of MCBs, switches, control units, contactors, transformer and OLRs, Replace all the defective components with correct ratings. (d) Check the insulation of cables, transformer and record. Repaint the complete panel with equipment international marine paint. Rubber gaskets to be renewed. Control/starter panel operation to be proved. Replace all earthing straps. (e) Check all the circuit and thoroughly inspect all the wiring/unit/sub-unit/cables, renew them wherever necessary, Check the insulation of same and record. (all material and all in way jobs under yard scope). Functional checks of MPU (Motor Protection Unit) card (10 Nos). SI Equipment Mys Rolls A15 V AC 3phase 03 Water jet power pack starter Royce panel operation by pump (III) DOL starter for Mys ECC Portable type 01 Loose Item (10 no.) FER (02) (III) DOL starter for Mys ECC DOL 01 FER (02) Incs) Water jet Fabricons Star delta 01 FER (02) Replace Spump Replace Spump Replace Spurp Replace	1		3					ĺ	
60 M _{/s}			B	June!	1 Sept	Mark	Z	The state of	\$ \$ 1
		CO Rajratan	RPT (Srt) Rep		SO I/C Electrical Rajratan	SO I/C Engg Rajratan	M/s Shoft Shipyard	M/s Krasny	M/s Chowgule
			:		7-101				
		TER	01	Star delta	M/s Fabricons	GS pump	Bilge & starter	(IV)	
		FER	01	DOL	M/s ECC	arter for pump	DOL sta	(III)	
	_	Loose item	01	Portable type	M/s ECC	arter for e lub oil	DOL sta portable pump	(11)	
	7 0	compartme nt (01 no), FER (02 nos)			Royce	back starter	power panel	3	
	1	Location	1	1ype	M/s Dolls	nent	Equipn	<u> </u>	
		Motor	િ	cope). Functional ch	s under yard s	all in way job ard (10 Nos).	erial and a	(all mat	
	èΚ	cables, ren		pect all the wiring/upect all the wiring/upect all the wiring/upectors	ck the insulation	circuit and t	ck all the herever ne	(e) Che	
	तुः ह्य	implete pa Control/stai	epaint the coe renewed. C	rmer and record. R Rubber gaskets to b	ables, transfol marine paint. I	sulation of c iternational r	eck the in	with equ	
		: : : : :		rrect ratings,	onents with co	ective compo	all the def	Replace	
Carryout complete overhauling/servicing of following control/starter panels. following: (a) Calibration of OLRs to be carried out by using CIT set (calibration cerissued). (b) Check the corroded mounting bases and take corrective action if necessary.	ัก	and check the	transformer a	's & re-varnishing of rol_unitscontactor	s, MCBs, relay witches, cont	of MCB's, s	an all cont operating	(c) Clea	
Carryout complete overhauling/servicing of following control/starter panels. following:- (a) Calibration of OLRs to be carried out by using CIT set (calibration cer		•	n if necessary	take corrective action	ing bases and	roded mount	ck the con	issued). (b) Che	
Carryout complete overhauling/servicing of following control/starter panels.	Ō	tificate to b	alibration cer	by using CIT set (c	e carried out	f OLRs to bo	ibration of	(a) Cal	
	ດິນ	Job includes	7		g/servicing of	e overhauling	: complete		LA-5060

AER	FER	Æ	FER	FER	AER	FER, AER	Water jet compartme nt	Quarter deck	Fwd mess	Foxle
01	02	01	01	02	0.1	90	01	01	02	01
Star delta	415 V, 1.5 –KW	415 V AC	415 V AC	415 V, 2.2 KW	415 V AC	415 V AC	415 V AC	415 V AC	415 V AC	415 VAC
M/s BE pump	M/s ECC	M/s KMC, Korea	M/s ROCHEM	M/s ECC	M/s Marine Electricals	M/s Switch n control gears	M/s ECC	M/s ECC	M/s L &T	M/s L &T
Bilge & fire pump starter	FW Hydrophore pump starter	Oily water separator control panel	ant Control	FO Transfer Pump Starter	Fuel oil purifier control cabinet	Engine Room Ventilation Fan Starter	Mooring capstan starter panel	Control Pedestal For Mooring Capstan	Anchor capstan control panel	Control Pedestal for anchor capstan
<u>S</u>	(VI)	(VII)	(VIII)	(XI)	8	(XI)	(XII)	(XIII)	(XIV)	(xx)

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RTO (Refit)	A
DTO CGDHQ-1	(lee!n)
CO Rajratan	The state of the s
CGRPT (Srt) Rep	(July)
SO I/C Hull Rajratan	The state of the s
SO I/C Electrical Rajratan	2
SO 1/C Engg Rajratan	3/2
M/s Shoft Shipyard	8
M/s Krasny	Do Ch
M/s Chowgule	1000 A

ŕ	2	Q								Ś										7
	Now A	M/s N	LA-5062						LA-5061	EWAGE T										
	12	M/s Krasny	STP/EV/	(IV)	(II)	Œ	(I)	<u>S</u>	Followin	REATME	(IIXX)	(IXX)	(%)		(XIX)		(XVIII)	(XVII)	(XVI)	2 2 4
	The surface of the su	M/s Shoft Shipyard	STP/EVAC Control Panel to be overhauled	Vacumrator pump motor - 2	Vacumrator	STP overboard pump motor	Sewage transfer pump motor	Motor description	g motors to b	NT PLANT (N	UPS for Main Engine Controls	Power supply unit for TVRO	supply unit & Auto change over power supply unit.	(IFF)	Power supply unit	(CRN-91)	Power supply unit	Garbage disposal unit	control panel & remote control	! !
	8 W W 1	SO I/C Engg Rajratan	nel to be c	pump mo	pump motor -	rd pump	sfer pump	ription	e overhau	MAKE: ON	ain ntrols		t & Auto er ply unit		ply unit		ply unit	sposal	rane nel & ntrol	-
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	SO I/C Electrical Rajratan			1			R	iled as per def	INI PURE MA	OLM S/M	M/sFuruno, Japan	M/S AZDEC Ltd, England	Hyderabad	M/s HAL,		M/s APLAB	M/s IMC	M/s NED- deck marine	
1	Jan Sand	SO I/C Hull Rajratan	as per defect SI.	2.2 KW	2.2 KW	0.75 KW	0.75 KW	Rating	Following motors to be overhauled as per defect sl. LA-5058	SEWAGE TREATMENT PLANT (MAKE: OMNI PURE MARINES) PAC FIRM: M/S	415V/230V/24VDC	230VAC/24VDC	1ype: 060701/141 & 970306/210		IFF 1410 NV		L3299s	415 V AC	415V,3Ph,50Hz, 7.5 KW	1
	9	CGRP R	LA 5060	01	01	01	01	Nos. Fitted	3	FIRM:							01	01	Hz, 01	
- /	B	CGRPT (Srt) Rep		STP Compt	STP Compt	STP Compt	STP Compt	Location			02	01	OI (eacn)		01		1	Ē		•
	3	CO Rajratan		pt	Þ	lpt	pt	-		HI-POINT, MUMBAI	Fwd E/R MCR	Ward room	Office	(Radio room)	MSO	rating mess	18 Navik	Galley	Mounted on crane	-
	59	DTO CGDHQ-1	Delete. Cov				_	Delete. Cov		BAI				1						
A.	X	RTO (Refit)	Delete. Covered under AIAMC.					Delete. Covered under AIAMC												

Scope of work of yard includes supply and fitment of items as per hill of material given below:		Channel or, Model:	c Audio visual 02 Alarm, Model: YL sets 40 (1 red and 1 orange)	d Cable 3x1.5 Sq 150 mm Mtrs e 1 KVA UPS-01 01 no, 12V 42 Ah set SMF Battery-03 nos and suitable	Rack-01 Visual	Alarm, Model-YL set 40 (01 Red and 01 Orange)	DTO RTO (Refit)	Cartin A
LC-5063 H ₂ S sensor to be installed in STP Compartment. Inway Jobs as follows:- (a) 02 sensor to be installed in STP compartment (b) Main control panel to be fitted in Dining Hall with suitable brackets. (c) Casing to be fabricated for storage of batteries and UPS. (d) One Audio Visual alarm to be provided in inside the STP compartment and one	to be provided Main alleway (e) Job includes laying out and securing of associated cables (Approx 150 Mtrs) [As & As approved by CGHQ vide TS/300/63/STP/RC E CLASS dated 04 May 18. Permanent Identification no. PIN NE/fh-01/2017-B/029]						M/s M/s Krasny M/s Shoft SO I/C SO I/C SO I/C CGRPT (Srt) CO Chowgule Shipyard Engg Electrical Hull Rep Rajratan Rajratan Rajratan Rajratan	gustered of winh Dap Don't Am?

X-			
alan A	M/s Chowgule	LA-5065	BATTERY LA-5064
Road	M/s Krasny		CHARGE Overha include (a) to be ir (b) (c) MCB's, compoi (d) renew (e) defectir
MC)	M/s Shoft Shipyard	te of following meters Voltmeter (0-50 V) Voltmeter (0-40 V) Voltmeter (0-75 Amps) Ammeter (0-15 Amps) Ammeter (0-40 Amps) Ammeter (-100- +100 Ammeter (0 - 100 Am	CHARGER, 30 AMPS (03 NOS) / Overhauling of 04 in nos. Batter includes following. (a) Transformers varnishing to be improved. (b) Securing of battery charg (c) Clean all contacts, switch MCB's, switches, control units components with correct ratings (d) Check all the circuit an renew them wherever necessary (e) Check all safety trips for defective components. (f) Renew all earthing straps
12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SO I/C Engg Rajratan	wing meters and (0-50 V) (0-40 V) (0-75 Amps) (0-15 Amps) (0-40 Amps) (-100- +100 A) (0 - 100 Amps)	IARGER, 30 AMPS (03 NOS) All Overhauling of 04 in nos. Battery includes following. (a) Transformers varnishing are to be improved. (b) Securing of battery charging (c) Clean all contacts, switches MCB's, switches, control units, components with correct ratings. (d) Check all the circuit and renew them wherever necessary and the components. (e) Check all safety trips for defective components. (f) Renew all earthing straps.
J.	SO I/C Electrical Rajratan	d calibration cer - 02 Nos - 06 Nos - 02 Nos - 02 Nos - 02 Nos - 02 Nos - 02 Nos - 02 Nos	R. 30 AMPS (03 NOS) AND 60 AMPS (0 auling of 04 in nos. Battery chargers and coss following. Transformers varnishing and take insulation mproved. Securing of battery charging panel cable. Clean all contacts, switches, rectifier units, switches, contactors and nents with correct ratings. Check all the circuit and thoroughly insp them wherever necessary and check the ins Check all safety trips for proper function we components. Renew all earthing straps.
Exercise 1	SO I/C Hull Rajratan	Calibrate of following meters and calibration certificate to be issued (a) Voltmeter (0-50 V) - 02 Nos (b) Voltmeter (0-40 V) - 06 Nos (04 in Nos fitted will will will will will will will wil	IARGER, 30 AMPS (03 NOS) AND 60 AMPS (01NO.) (MAKE: M/S ROVERHAULING OF 04 in nos. Battery chargers and control panel (01 no.) to includes following. (a) Transformers varnishing and take insulation before and after varn to be improved. (b) Securing of battery charging panel cable. (c) Clean all contacts, switches, rectifier units, relays and check the MCB's, switches, control units, contactors and transformer. Replace components with correct ratings. (d) Check all the circuit and thoroughly inspect complete wiring/renew them wherever necessary and check the insulation of same and refective components. (e) Check all safety trips for proper functioning and if not carry defective components.
0) DEC	CGRPT (Srt) Rep	ion certificate to be issued. 02 Nos 06 Nos (04 in Nos fitted with MCS-5 UPS) 02 Nos 02 Nos 02 Nos 02 Nos 02 Nos 02 Nos	ARGER, 30 AMPS (03 NOS) AND 60 AMPS (01NO.) (MAKE: M/s RAD) Overhauling of 04 in nos. Battery chargers and control panel (01 no.) to be includes following. (a) Transformers varnishing and take insulation before and after varnishin to be improved. (b) Securing of battery charging panel cable. (c) Clean all contacts, switches, rectifier units, relays and check the propence of the circuit and thoroughly inspect complete wiring/unit/senew them wherever necessary and check the insulation of same and record (e) Check all safety trips for proper functioning and if not carry out defective components. (f) Renew all earthing straps.
	CO Rajratan	5-5 UPS)	R. 30 AMPS (03 NOS) AND 60 AMPS (01NO.) (MAKE: M/S RADIANT ELECTRONICS, KOLKATA) uiling of 04 in nos. Battery chargers and control panel (01 no.) to be carried out. Job prove the system mproved. Securing of battery charging panel cable. Clean all contacts, switches, rectifier units, relays and check the proper operating of switches, control units, contactors and transformer. Replace all the defective nents with correct ratings. Check all the circuit and thoroughly inspect complete wiring/unit/sub-unit/cables, them wherever necessary and check the insulation of same and record. Renew all earthing straps.
	рто серно-1	DO cali provide Spares (
1	} <u>1</u>	DO calibration only. provide calibration Spares CG supply.	Yard to install the system the attached block diag prove the system. Material yard supply. All in way jobs included. IICS, KOLKATA) DO as per RFIC Material yard supply.
3	RTO (Refit)	only. Yard to tion certificate.	Yard to install the system as per the attached block diagram and prove the system. Material yard supply. All in way jobs included. IICS, KOLKATA) DO as per RFIC minutes. Material yard supply.

LA- 5066	Scrap old paint and apply new paint using international marine standard equipment paint (Paint Yard supply).	Delete.
MAIN LIGH	MAIN LIGHTING TRANSFORMER (415 V/230 V, AIR COOLED 10 KVA, M/s RADIANT ELECTRONICS)	ICS)
LA-5067	Overhaul the transformer including following:- (a) Cleaning, varnishing and baking of winding and cleaning of earthing straps. (b) Check and record insulation resistance of windings before and after varnishing i.e. insulation to be improved. Replace earthing straps. (c) External and internal body of transformer to be scraped and painted with international marine heat resistant paint. One coat of air drying varnish to be applied on frame parts. (d) Check all the circuit and thoroughly inspect the all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope)	DO. Material and paint yard supply.
GENERAL I	GENERAL LIGHT FITTING, WALL MOUNTED FANS & SWITCH SOCKETS	
LB- 5068 FTRF DFTE	LB-5068 20 nos. Light fitting along with bracket in machinery spaces perished. To be replaced. Delete.	Delete.
LA-5069	Overhaul the complete system including following heat/smoke detectors and manual call	DO through PAC firm M/s
	point. Sensors to be checked for correct operation and replace if found defective. System to	Elcome Integrated systems
	be proved in all the loops (03 nos.)	Ltd, Navi Mumbai. Spares CG
	(a) Optical smoke detector-25 nos. (b) Multi sensor smoke detector-09 nos.	supply.
DOVING	(d) Heat detector-01 no.	
LA-5070	Carry out complete overhauling of cooking range. Job includes following:-	DO. Material yard supply.
	switches, knobs (b) Replace heat resistant cables of all hot plates (15 Amps, length: 10 meters approx).	
	panel (d) Check and record the insulation resistance of the individual heating element.	
/W /c M	M/s Kraseny M/s Shoft SO 1/7 SO 1/7 SO 1/7	DTO DTO

RTO (Refit)	A
DTO CGDHQ-1	(least
CO Rajratan	
CGRPT (Srt) Rep	SAPA
SO I/C Hull Rajratan	In such
SO I/C Electrical Rajratan	Je za
SO I/C Engg Rajratan	750
M/s Shoft Shipyard	
M/s Krasny	the od
M/s Chowgule	The state of the s

	LA-5077 Carry out complete overhauling including scanner motor and replace bearings.	
as per sample.	LA-5076 Assess general condition of transmitter units (e.g. Array, rotary joints),	LA-5
certified bearing to be renewed	LA-5075 Replace earth bondage strap, if needed	LA-5
Material yard supply. OEM	necessary and check the insulation of same and record.	
Mumbai. Spares CG supply.	circuit thoroughly and inspect all the wiring/unit/sub-unit/cables, renew them wherever	
M/s Transas Marine Ltd. India,	LA-5074 Check Condition of Transmitter mounts and repair and replace, if needed. Check all the	LA-5
Do through PAC firm	LA-5073 Check transmitter power output.	LA-5
	PAC FIRM : M/S TRANSAS, MUMBAI	PAC F
	RADAR (MAKE: TRANSAS, SWEDEN, TYPE: NR4000, 12KW &25 KW - 02 NOS.)	RADA
	them wherever necessary. Check the insulation of same and record.	
	(b) Check all the circuit and thoroughly inspect all the wiring/unit/sub-unit/cables, renew	
	daily checks, assure to switch matrix # 2 back on.	
	Second redundancy check, switch off matrix # 2 and test all system operations as per	
	redundancy check, switch off matrix # 1 and test all system operations. Carry out	
	(a) Check all terminal block connections in processors and tighten. Carry out first	
Delete.	LA-5072 Overhaul the complete panel. Job includes following:-	LA-5
	INTEGRATED BRIDGE SYSTEM (TRANSAS, SWEDEN), PAC FIRM: M/S TRANSAS, MUMBAI	INTEC
	satisfactory operation.	
Hot plate yard supply.	2KW, 415 V AC in the cooking range is defective. Hot plate to be renewed and proved for Hot plate yard supply.	
DO.	LB-5071 01 in no hot plate (Type: Moulded with 04 terminal heating element) Size: 220 X 220 mm,	LB-5
	(All material and all in way jobs under yard scope)	
	switches, control units, contactors. Replace the defective components with correct ratings.	
	(f) Clean all contacts, switches $&$ relays and check the proper operating of MCB's, $ $	
	them wherever necessary. Check the insulation of same and record.	
	(e) Check all the circuit and thoroughly inspect the all wiring/unit/sub-unit/cables, renew	

L. 28		-		
Ed In))		Chowgule	M/s
1			-	M/s Krasny
Q			Shipyard	M/s Shoft
7		Rajratan	Engg	S0 I/C
No.	0°7	Rajratan	Electrical	S0 I/C
1	- James	Rajratan	Hull	S0 I/C
7		>	Rep	CGRPT (Srt)
)		Rajratan	6
1	\ \d_{\text{'}}) 	CGDHQ-1	DTO
A	2		,	RTO (Refit)

1 A-5078	Chark	Chack condition of antenna mounts/	5078 Chark condition of antenna mounts/ hra	ints/ hracket	s for corrosion	ckets for corrosion and renair if needed	eded Check all	Delete	
2005	the circ	uit and thore	oughly inspe	ct all the wi	ing/unit/sub-ur	the circuit and thoroughly inspect all the wiring/unit/sub-unit/cables, renew them wherever	them wherever	2	
0000	necessa	iry. Check the	e insulation		record.	and record.			
LA-50/9		Open multiplexer unit and check internal	בבויים כוובכי		ing and agricin	WILLIE GILL UGILCE LETTINGS, IL 1903C.	TDANCAC MIIN	TVQL	
GPS (MA	1KE: M/5	DGPS (MAKE : M/S SAAB SYSTEMS, TYPE: K4-T	IEMS, IYP	E: K4-IKAN	SPONDEK) P.	AC FIRIT : IM/S	KANSAS, MUN	IDAI	
LA-5080	Check C	Check condition of antenna mounts/ bra	antenna mo	unts/ bracke	ts for corrosion	ickets for corrosion and repair, if needed. Check all	eded. Check all	Delete.	
	the circ	uit and thore	oughly inspe	ct all the wi	ring/unit/sub-ur	the circuit and thoroughly inspect all the wiring/unit/sub-unit/cables, renew them wherever	them wherever		
	necessa	necessary. Check the insulation of same	e insulation	of same and	and record.				
LA-5081	Open r	Open multiplexer unit and check internal	it and check	cinternal wiri	ng and tighten	wiring and tighten terminals, if loose.	<u></u>		
CDIS (M.	AKE: M/	's TRANSAS	SWEDEN), PAC FIRN	ECDIS (MAKE : M/s TRANSAS, SWEDEN), PAC FIRM : M/S TRANSAS, MUMBAI	SAS, MUMBAI			
LA-5082	Check c	Check chart permit licenses /	icenses / pe	rmit expiry a	nd carry out up	permit expiry and carry out updation of ECDIS chart.	hart.	Delete.	
LA-5083	Open p	Open panels and check all terminal bloc	eck all tern	iinal block cc	nnections and	k connections and tighten if becoming loose.	ng loose. Check		
	all the	all the circuit and thoroughly inspect	thoroughly	inspect all	the wiring/ur	all the wiring/unit/sub-unit/cables, renew them	s, renew them		
	wherev	er necessary	. Check the	insulation of	wherever necessary. Check the insulation of same and record	.p.		;	
YRO CON	MPASS (1	GYRO COMPASS (MAKE: M/S ANSCHUTZ, STD 2	ANSCHUT.	Z, STD 22)	DAC FIRM M/	2) PAC FIRM M/S ELCOME INTEGRATED SYSTEM P LTD	GRATED SYSTE	M P LTD	
LA-5084	Comple	Complete overhauling of Gyro compass	ng of Gyro	compass to	be carried out.	to be carried out. Renew the "O" rings	rings / gaskets,	Delete.	
	Gyro lic	Gyro liquid and fused bulbs. Check the	ed bulbs. Cl	heck the Gyr	o compass for	Gyro compass for optimum performance. Check all	nance. Check all		
	the circ	uit and thor	oughly inspo	ect all the wi	ring/unit/sub-uı	the circuit and thoroughly inspect all the wiring/unit/sub-unit/cables, renew them wherever	them wherever		
	necess	necessary. Check the insulation of same	e insulation		and record.			· ·	
LA-5085	Ensure	Ensure repeaters are aligned with main	re aligned v		ro and Gyro fe	Gyro and Gyro feed is available to RADAR,	RADAR, ECDIS		
	and off	and other connected equipment	d equipment						
VDR (MA	KE: M/s	SVDR (MAKE: M/s TRANSAS, SWEDEN	SWEDEN,	, Model - SVDR -3200	DR -3200)			-	
LA-5086	Annual	performance	e test (APT)	to be carried	l out by certified icrophones (06	Annual performance test (APT) to be carried out by certified Transas technician including up	ian including up	Delete.	
	proved.					,		:	
LA-5087	Open	vanels and cl	neck all tern	ninal block co	unections and	Open panels and check all terminal block connections and tighten if becoming loose. Check	ng loose. Check	Delete.	
	all the	all the circuit and thoroughly inspect al	horoughly i	nspect all wi	ring/unit/sub-u	Il wiring/unit/sub-unit/cables, renew them wherever	them wherever		
	necess	ary and chec	k the insula	necessary and check the insulation of same and record	necessary and check the insulation of same and record.	E 7080)			
1 A-5088	Monito	r general we	ar of equipn	Monitor general wear of equipment and wind valle.	1 vane.	7000		Delete. SS	
3┞─	M/s Krasny	M/s Shoft	30 I/C	SO I/C	2/I 0S	CGRPT (Srt)	00	DTO 1	RTO (Refit)
Chowgule	4	Shipyard	Engg Rajratan	Rajratan	null Rajratan	Verb	Naji atail		/
1000	of a	8	3/5	S. S.	frall.	SAS O	1,	Car.	M
1	\								

Delete.	096 Foxle/ Quarterdeck main broadcast junction box and socket deteriorated. To be repaired	LB-5096
Length- 20 mtrs. Cable yard supply. All in-way jobs included.		
Size: 2 X 1.5 Sq mm,		
Specification of cable:	renewed as per sample. Main Broad cast to be proved for satisfactory operation.	
Do.		LB-5095
	_	
Delete.		LA-5094
	satisfactory operation.	
Delete.	Main Broad cast system found to be non-operational. Defect to be rectified and proved for	LB-5093
		PAC FIRM
	MAIN BROADCAST (MAKE: M/s MARINE ELECTRONICS GENOVA ITALY, TYPE: IMCOS 1151),	MAIN BR
	various Locations).	
Delete.	Overhaul the complete system. Prove the system from each location (Total 15 nos fitted in	LA- 5092
	PAC FIRM M/S ELCOME INTEGRATED SYSTEM (P) LTD	PAC FIRM
S) ,	SOUND POWERED TELEPHONE (MAKE: M/S MARINE ELECTRONICS GENOVA ITALY, TYPE: IMCOS),	SOUND P
Delete.	Onplete overhaul of autopilot cum steering gear system to be carried out.	LA-5091
	PAC FIRM : M/S ELCOME INTEGRATED PVT LTD, NAVI MUMBAI	PAC FIRM
	AUTOPILOT CUM STEERING GEAR SYSTEM (M/S RAYTHEON, TYPE NAUTOPILOT- 20X5)	AUTOPIL
supply.	Issued for salile). Check for confect injurt to ECDIS.	
Integrated System, Mumbai.	with reference to hand held anemometer and standard readings (calibration certificate to be	
Do through M/s Elcome		LA-5090
	necessary and check the insulation of same and record.	
Delete.		
	OB9 Check condition of wind vane mounts/brackets for corrosion and renair if needed. Check all	LA-5089

M/s Chowgule

M/s Krasny

M/s Shoft Shipyard

SO I/C Engg Rajratan

SO I/C Electrical Rajratan

SO I/C Hull Rajratan

> CGRPT (Srt) Rep

CO Rajratan

DTO CGDHQ-1

RTO (Refit)

and proved. Housing box to be renewed. LA-5097 Compete overhaul of Main broadcast system and intercom systems including amplifiers and and proved. Housing box to be renewed. LA-5097 Compete overhaul of Main broadcast system and intercom systems including amplifiers and associated speakers (33 nos) and microphores (07 nos). Full performance checks to be carried out at all speaker cables and record. Replace all effective components. LA-5098 Overhaul complete system. Check all telephones cables lines/cables junction boxes and record. Harbital 3550 LA-5099 Overhaul the complete equipment including renewal of Lithium memory backup battery. Check PCBs and components showing ageing and sign of deterioration. Replace the certain check the mounting condition of main unit and repair / replace if required. Check PCBs and components PCB. Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. Check PCBs and components PCB. Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. Check PCBs elective components of all cables and record. LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective proved. SOP FOR RAN-91 CAUNUMARA, 4553R.) DEM 14/5 BEL KOTDWARA PAC FIRM : M/S BHARAT ELECTRONICS, CHENNAL LA-5101 Carry out complete overhauling of system. Check the performance along with interfacing with MF/HF set and system to be proved. LA-5101 Carry out complete overhauling and tuning of the equipment and test for optimum polete. LA-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip interfacing with CRN 91. LA-5103 Carryout complete everhauling and tuning of the equipment and test for optimum polete. performance as per service manual. Clean the mineral cable and all in way jobs under a product of same and record. (All materials and all in way jobs under yard scope)			
LA-5097 Complete overhaul of Main broadcast system and intercom systems including amplifiers and associated speakers (33 nos) and microphones (07 nos). Full performance checks to be associated speakers (33 nos) and microphones (07 nos). Full performance checks to be carried out at all speaker points and volume control to be checked. Check continuity and insulation of all speaker cables and record. Replace all defective components. Insulation of all speaker cables and record. Replace all defective components.		and proved. Housing box to be renewed.	
associated speakers (33 nos) and microphones (07 nos), Full performance checks to be insulation of all speaker points and volume control to be checked. Check continuity and insulation of all speaker cables and record. Replace all defective components. LA-5098 Overhaul complete system. Check all telephonenes cables lines/cables junction boxes and Delete. LA-5099 Overhaul complete system. Check all telephonenes cables lines/cables junction boxes and Delete. LA-5099 Overhaul complete system. Check all telephonenes cables lines/cables junction boxes and Delete. LA-5099 Overhaul the complete equipment including renewal of Lithium memory backup battery. Delete. Check PCBs and components showing ageing and sign of deteriorated wining, components showing ageing and sign of deterioration. Replace the deteriorated wining, components showing ageing and sign of deterioration. Replace the deteriorated wining, components showing ageing and sign of deterioration and licables and record. SMART-F (M/S BEL,KOTDWARA, 4563R) OEM M/S BEL KOTDWARA, PAC FIRM: M/S BEL,KOTDWARA LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. LA-5101 Carry out complete overhauling of system, check co-axial cable for any damage if defective Delete. LA-5101 Carry out complete overhauling of system and check the performance along with interfacing with CRN 91. LA-5101 Carry out complete overhauling and Luning of the equipment and test for optimum Delete. LA-5101 Carry out complete overhauling and Luning of the equipment and test for optimum Delete. LA-5101 Thermal Imager video found not available in CDU due to defective silp ring assembly. Silp Interfacing with CRN 91. LA-5101 Thermal Imager video found not available in CDU due to defective silp ring assembly to be renewed and SOP to be proved for satisfactory operation. LA-5101 Carry out complete overhauling and Luning of the equipment and test for optimum performance as per service manual. Clean the autenma. Check all the circuit and	LA-5097	Complete overhaul of Main broadcast system and intercom systems including amplifiers and	Delete.
Carried out at all speaker points and volume control to be checked. Check continuity and insulation of at all speaker points and volume control to be checked. Check continuity and insulation of at speaker cables and rectoral. Replaces all defective components. LA-5098		associated speakers (33 nos) and microphones (07 nos). Full performance checks to be	
Insulation of all speaker cables and record. Replace all defective components. AUTO TELEPHONE EXCHANGE (MAKE. SIEMENS / UNIT FOURTERPRISES COMMUNICATION PYT LTD) LA-5008 Overhaul complete system. Check all telephones cables lines/cables junction boxes and Delete. LA-5099 Overhaul to complete equipment including renewal of Lithium memory backup battery. Delete. Check PCBs and components/ Row Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace the deteriorated wiring. Components/ Row Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. SMART-F (M/S BEL, KOTDWARA, 4563R) CBM M/S BEL KOTDWARA, PAC FIRM : M/S BEL, KOTDWARA LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. PAC-5101 Carry out complete overhauling of system. Check the performance along with interfacing with interfacing with MF/HF set and system to be proved. LA-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. MUMBAI LA-5101 Thermal Imager video found not available in CDU due to defective slip ring assembly. Mumbai Interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Mumbai Interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Mumbai Interfacing with complete overhauling and tuning of the equipment and test for optimum perfect. In assembly video found not available in CDU due to defective slip ring assembly. Mumbai In spect all winniquulisab-unifacables, renew them wherever necessary and check the inspect all winniquulisab-unidar service manual. Gean the antenna. Check all the circuit and thoroughly inspect all winniquulisable.		carried out at all speaker points and volume control to be checked. Check continuity and	
AUTO TELEPHONE EXCHANGE (MAKE: STENENS, / UNIFY ENTERPRISES COMMUNICATION PVT LTD) LA-5098 Overhault complete system. Check all telephones cables lines/cables junction boxes and Delete. Explaces defective component, if any, Model- HIPATH 3500 STAND ALONE COMMUNICATION SYSTEM SACU (M/s BEL, KOTDWARA 3100 DCT) PAC FIRM: M/s BEL, KOTDWARA LA-5099 Overhault the complete equipment including renewal of Lithium memory backup battery. Delete. Check CBS and components POR: Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. SMART-F (M/s BEL, KOTDWARA, 4563R) OEM M/s BEL KOTDWARA, PAC FIRM: M/s BEL, KOTDWARA LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. Park on the performance along with interfacing with MF/HF set and system to be proved. SOP FOR CRN-91 GUN, OEM - BHARAT ELECTRONICS. CHENNAL LA-5101 Carry out complete overhauling of system and check the performance along with Delete. LA-5101 Carry out complete overhauling of the system and check the performance along with Delete. LA-5101 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Carry out complete overhauling and tuning of the equipment and test for optimum Delete. LA-5101 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all windyunifysub-unifycables, renew them wherever necessary and check the large of all material and all in way jobs under yard scope) INMARSAT C TERMINAL (M/s SAILORS) THRANE AND ENRANEM. TI-300E)		insulation of all speaker cables and record. Replace all defective components.	
L4-5098 Overhaul complete system. Check all telephones cables lines/cables junction boxes and Delete.	AUTO TELE	PHONE EXCHANGE (MAKE: SIEMENS / UNIFY ENTERPRISES COMMUNICATION PVT	(<u>dr</u>
replaces defective component, if any. Model- HIPATH 3550 STAND ALONE COMMUNICATION SYSTEM SACU (M/s BEL, KOTDWARA 3100 DCT) PAC FIRM: M/S BEL, KOTDWARA LA-509 Overhault the complete equipment including renewal of Lithium memory backup battery. Delete. Check PCBs and components showing ageing and sign of deterioration. Replace the deteriorated wiring, components showing ageing and sign of deterioration. Replace the deteriorated wiring, components PCB. Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required.	LA-5098		Delete.
STAND ALONE COMMUNICATION SYSTEM SACU (M/s BEL, KOTDWARA 3100 DCT) PAC FIRM: M/S BEL, KOTDWARA 1A-5099 Overhaul the complete equipment including renewal of Lithium memory backup battery. Delete. Check PCBs and components showing ageing and sign of deterioration. Replace the deteriorated wining, components showing ageing and sign of deterioration. Replace the deteriorated wining, components PCB. Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. Check the insulation of all cables and record. SMART-F (M/S BEL, KOTDWARA, 4563R) OBEL KOTDWARA, PAC FIRM: M/S BEL, KOTDWARA LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICS, CHENNA LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LA-5101 Carry out complete overhauling and tuning of the equipment and test for optimum Delete. HF TRANSCEIVER SET (MAKE: EURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY. MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wining/unity/subley, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT CTERMINAL (M/S SALLORS THRANE AND THRANE, DELNARK, TT-300E)		replaces defective component, if any. Model- HIPATH 3550	
LA-5099 Overhaul the complete equipment including renewal of Lithium memory backup battery. Delete. Check PCBs and components showing ageing and sign of deterioration. Replace the deteriorated wining, components showing ageing and sign of deterioration. Replace the deteriorated wining, components PCB. Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. replace. Check the performance along with interfacing with MF/HF set and system to be proved. SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICS.LTD AST CARRY out complete overhauling of the system and check the performance along with Delete. LA-5101 Carry out complete overhauling and tuning of the equipment and test for optimum pelete. LA-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip in assembly to be renewed and SOP to be proved for satisfactory operation. LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum pelete. performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wining/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobes under year scope) INMARSAT CTERMINAL (VIS SAILORS THRANE AND THRANE, DENIMARK, TT-300E)	STAND ALO	INE COMMUNICATION SYSTEM SACU (M/s BEL, KOTDWARA 3100 DCT) PAC FIRM:	/S BEL, KOTDWARA
Check PCBs and components showing ageing and sign of deterioration. Replace the deteriorated wiring, components PCB. Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. Check the insulation of all cables and record. LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. replace. Check the performance along with interfacing with MF/HF set and system to be proved. SOP FOR CRN-91 GUIN, OEM — BHARAT ELECTRONICS. TD PAC FIRM IN SHARAT ELECTRONICS, CHENNAI. LA-5101 Carry out complete overhauling of the system and check the performance along with Delete. LA-5101 Interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. Interfacing with CRN 91. LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	LA-5099	Overhaul the complete equipment including renewal of Lithium memory backup battery.	Delete.
deteriorated wiring, components/ PCB. Also check the interfacing terminal points, memory accessibility. Check the mounting condition of main unit and repair / replace if required. SMART-F (M/S BEL,KOTDWARA, 4563R) OEM M/S BEL KOTDWARA, PAC FIRM: M/S BEL,KOTDWARA LA-5100 Carry out complete overhauling of system. Check the performance along with interfacing with MF/HF set and system to be proved. SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICS. THENNAI LA-5101 Carry out complete overhauling of the system and check the performance along with interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly to be renewed and SOP to be proved for satisfactory operation. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip performance as per service manual. Clean the autenna. Check all the circuit and thoroughly inspect all wiring/unity/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT C. TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)			
accessibility. Check the mounting condition of main unit and repair / replace if required. Check the insulation of all cables and record. SMART-F (M/S BEL, KOTDWARA, 4563R) OEM M/S BEL KOTDWARA, PAC FIRM: M/S BEL, KOTDWARA LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. replace. Check the performance along with interfacing with MF/HF set and system to be proved record. SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICS.TD PAC FIRM: M/S BHARAT ELECTRONICS. CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly to be renewed and SOP to be proved for satisfactory operation. HFTRANSCEIVER SET (MAKE: FURUNO, JAPANI Model: FS 5070) PAC FIRM M/S MOLOOBHOY. MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum pelete. LA-5103 Carryout complete overhauling and tuning of the autenna. Check all the circuit and thoroughly inspect all wiring/unit/cables, renew them wherever necessory performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/cables, renew them wherever necessory complete overhauling in sall in way jobs under yard scope)		deteriorated wiring, components/ PCB. Also check the interfacing terminal points, memory	
Check the insulation of all cables and record. SMART-F (M/S BEL,KOTDWARA, 4563R) OEM M/S BEL KOTDWARA, PAC FIRM: M/S BEL, KOTDWARA LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective Delete. replace. Check the performance along with interfacing with MF/HF set and system to be proved. SOP FOR CRN-9 GUN, OEM — BHARAT ELECTRONICS.TD PAC FIRM: M/S BHARAT ELECTRONICS, CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. Interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip interfacing with CRN 91. LB-5101 Carry out complete overhauling of the equipment and test for optimum Delete. Interfacing with CRN 91. LA-5101 Carry out complete overhauling of the equipment and test for optimum Delete. AFTRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling of the equipment and thoroughly inspect all wiring/unit/sables, renew antenna. Check all the circuit and thoroughly inspect all wiring/unit/sables, renew the antenna. Check all the circuit and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		accessibility. Check the mounting condition of main unit and repair / replace if required.	
SAMART-F (M/S BEL,KOTDWARA, 4563R) OEM M/S BEL KOTDWARA, PAC FIRM: M/S BEL, KOTDWARA LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective proved. SOP FOR CRN-91 GUN, OEM – BHARAT ELECTRONICSLTD PAC FIRM: M/S BHARAT ELECTRONICS. CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. LB-5103 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip performance as per service manual. Clean the aduitment and test for optimum pelete. LA-5103 Carryout complete overhauling of the equipment and test for optimum pelete. PERMINACEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY. MUMBAI LA-5103 In wining/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		Check the insulation of all cables and record.	
LA-5100 Carry out complete overhauling of system. Check co-axial cable for any damage if defective replace. Check the performance along with interfacing with MF/HF set and system to be proved. SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICS.LTD PAC FIRM: M/S BHARAT ELECTRONICS. CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. LB-5103 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. LB-5103 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5104 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5105 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5107 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5108 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5109 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5109 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5109 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5101 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5109 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5101 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5101 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip Delete. LB-5102 Thermal Imager vide	SMART-F (M/S BEL,KOTDWARA, 4563R) OEM M/S BEL KOTDWARA, PAC FIRM: M/S BEL, KOTD	WARA
replace. Check the performance along with interfacing with MF/HF set and system to be proved. SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICSLTD PAC FIRM: M/S BHARAT ELECTRONICS, CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum pelete. LA-5103 Carryout complete overhauling and tuning of the equipment and the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	LA-5100	Carry out complete overhauling of system. Check co-axial cable for any damage if defective	Delete.
SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICSLTD PAC FIRM: M/S BHARAT ELECTRONICS, CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip interfacing with CRN 91. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly to be renewed and SOP to be proved for satisfactory operation. HF TRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. LA-5103 Carryout complete overhauling and tuning of the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		replace. Check the performance along with interfacing with MF/HF set and system to be	
SOP FOR CRN-91 GUN, OEM — BHARAT ELECTRONICSLTD PAC FIRM : M/S BHARAT ELECTRONICS, CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. HF TRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. LA-5103 Carryout complete overhauling and tuning of the equipment and the circuit and thoroughly inspect all wiring/unit/sables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		proved.	
PAC FIRM: M/S BHARAT ELECTRONICS, CHENNAI LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. HF TRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. LA-5103 Carryout complete overhauling and tuning of the equipment and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	SOP FOR CI	RN-91 GUN, OEM – BHARAT ELECTRONICSLTD	
LA-5101 Carry out complete overhaul of the system and check the performance along with Delete. LB-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. HF TRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	PAC FIRM:	M/S BHARAT ELECTRONICS, CHENNAI	
ID-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip IP-5102 Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip IIII ARNSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	LA-5101	Carry out complete overhaul of the system and check the performance along with	Delete.
Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip ring assembly to be renewed and SOP to be proved for satisfactory operation. HF TRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		interfacing with CRN 91.	
HF TRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	LB-5102	Thermal Imager video found not available in CDU due to defective slip ring assembly. Slip	Delete.
HF TRANSCEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, MUMBAI LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		ring assembly to be renewed and SOP to be proved for satisfactory operation.	
LA-5103 Carryout complete overhauling and tuning of the equipment and test for optimum Delete. performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	HF TRANS	CEIVER SET (MAKE: FURUNO, JAPAN Model: FS 5070) PAC FIRM M/S MOLOOBHOY, I	NUMBAI
performance as per service manual. Clean the antenna. Check all the circuit and thoroughly inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	LA-5103	Carryout complete overhauling and tuning of the equipment and test for optimum	Delete.
inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record. (All material and all in way jobs under yard scope) INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		performance as per service manual. Clean the antenna, Check all the circuit and thoroughly	
INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		inspect all wiring/unit/sub-unit/cables, renew them wherever necessary and check the	
INMARSAT 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)		insulation of same and record. (All material and all in way jobs under yard scope)	
	INMARSAI	I 'C' TERMINAL (M/S SAILORS THRANE AND THRANE, DENMARK, TT-300E)	

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CO Rajratan	June 1
CGRPT (Srt) Rep	S S S S S S S S S S S S S S S S S S S
SO I/C Hull Rajratan	3
SO I/C Electrical Rajratan	1
SO I/C Engg Rajratan	18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
M/s Shoft Shipyard	8
M/s Krasny	to de
M/s Chowgule	Anga-

	(paint yard supply) OEM firm M/s ECIL, Hyderabad. Check the insulation resistance of cable
	navy grey polyurethane paint (RF paint). Carryout performance checks & tuning of system.
Delete.	LA-5111 Carryout overhaul of the complete system along with cleaning and painting of antenna with
	PAE - 3060 (MAKE: ECIL, HYDERABAD)
	mirror and prove for operation.
	dismantling. Renew all weather sealing gaskets and rubber components, polish reflecting
Delete.	LA-5110 Overhaul the complete light assembly including flaps and revolving mechanism after
	5" HAND SIGNALING ALDIS LANTERN 60W (M/s RAY ENTERPRISES, KOLKATA 02 NOS)
	it for satisfactory operation.
Delete.	LA- 5109 Overhaul the complete unit internally, check performance in all functional modes and prove
	PORTABLE HF TX/RX PRC 6020 (M/S BEL)
	defective components. Check insulation of Aerial and replace mounting nuts
	prove it for satisfactory operation. Check the insulation of all cables and record. Replace the
Delete.	LA-5108 Complete overhaul the equipment. Check the performance in all functional modes and
	NAVTEX RECEIVER (MAKE M/S SAMYUNG, TYPE SNX-300)
	defective components. Check insulation of Aerial and replace mounting nuts.
	prove it for satisfactory operation. Check the insulation of all cables and record. Replace the
Delete.	LA- 5107 Overhaul the complete units internally, check the performance in all functional modes and
	VLF/HF RECIEVER EK-896 (M/S BEL, BANGALORE)
	defective components. Check insulation of Aerial and replace mounting nuts
	prove it for satisfactory operation. Check the insulation of all cables and record. Replace the
Delete.	LA- 5106 Overhaul the complete units internally, check the performance in all functional modes and
	FLEET BROAD BAND 500 (SAILORS THRANE AND THRANE DENMARK)
	components.
	satisfactory operation. Check the insulation of cables and record. Replace the defective
Delete.	Overhaul the complete unit, check the performance in all functional mode
	VHF RADIO TELEPHONE (SAILORS THRANE AND THRANE DENMARK RT 5022 02 NOS.)
	defective components.
	prove it for satisfactory operation. Check the insulation of cables and record. Replace the
Delete.	LA- 5104 Overhaul the complete unit internally, check the performance in all functional modes and

M/s A Chowgule

M/s Krasny

M/s Shoft Shipyard

SO I/C Engg Rajratan

SO I/C Electrical Rajratan

SO I/C Hull Rajratan

> CGRPT (Srt) Rep

CO Rajratan

DTO CGDHQ-1

RTO (Refit)

	/ ante	antenna and record	ord.						
NAVIGAT	ION LIGH	HTS AND CO	NTROL PAP	VEL (MAKE:	NAVIGATION LIGHTS AND CONTROL PANEL (MAKE: ECC, KOLKATA)	TA)			
LA-5112	Carry out c (a) Prove (b) All the Defective / (c)Check th	out complete ove 12 no. lic I the checks is live / deterior sck the insula ction.	Carry out complete overhauling of the panel including a (a) Prove 12 no. lights in normal and emergency mode. (b) All the checks and tests are to be carried out as per Defective / deteriorated components. (c)Check the insulation and terminal connection (both connection.	of the panel al and emerg to be carried nents. minal connec	Carry out complete overhauling of the panel including as follows:- (a) Prove 12 no. lights in normal and emergency mode. (b) All the checks and tests are to be carried out as per manual are Defective / deteriorated components. (c)Check the insulation and terminal connection (both end) and connection.	Carry out complete overhauling of the panel including as follows:- (a) Prove 12 no. lights in normal and emergency mode. (b) All the checks and tests are to be carried out as per manual and replace Defective / deteriorated components. (c)Check the insulation and terminal connection (both end) and record. Retighten all cable connection.	tighten all cable	DO. Material yard supply. Spares CG supply.	rard supply.
LA- 5113 GENERAL	Ā	all the circuiver necessar eover (230/2) naterial and	Check all the circuit and thoroughly inspect the all wiring wherever necessary and check the insulation of same a changeover (230/24 V DC) relay circuit and repair if requing the material and all in way jobs under yard scope) ALARM SYSTEM (MAKE: M/s ELNA TYPE GA-2)	ighly inspect the insulatio r circuit and r lobs under y	Check all the circuit and thoroughly inspect the all wiring/unwherever necessary and check the insulation of same and rechangeover (230/24 V DC) relay circuit and repair if required. (All material and all in way jobs under yard scope) ARM SYSTEM (MAKE: M/s ELNA TYPE GA-2)	Check all the circuit and thoroughly inspect the all wiring/unit/sub-unit/cables, renew them wherever necessary and check the insulation of same and record including checks of auto changeover (230/24 V DC) relay circuit and repair if required. (All material and all in way jobs under yard scope) ARM SYSTEM (MAKE: M/S ELNA TYPE GA-2)	les, renew them 3 checks of auto	DO. Material yard supply. Spares CG supply.	rard supply. oply.
LA-5114 ELECTRIC	Overh (All n	LA-5114 Overhaul the complete system (All material and all in way ELECTRIC SIREN (MAKE: M/S ZOLLNER	Overhaul the complete system. Replace defective / deter (All material and all in way jobs under yard scope) REN (MAKE: M/S ZOLLNER)	Replace defe iobs under y	ctive / deterior	Overhaul the complete system. Replace defective / deteriorated components. (All material and all in way jobs under yard scope) REN (MAKE: M/S ZOLLNER)	\$	Delete.	
LA-5115 SEARCH L	Overh	aul the equip naterial and AKE: WISK	Overhaul the equipment completely. Replace defective / (all material and all in way jobs under yard scope) HT (MAKE: WISKA DENMARK, 215 V, SINGLE PHAS	stely. Replace jobs under y (, 215 V, SI	e defective / de rard scope) NGLE PHASE,	LA-5115 Overhaul the equipment completely. Replace defective / deteriorated components. (all material and all in way jobs under yard scope) SEARCH LIGHT (MAKE: WISKA DENMARK, 215 V, SINGLE PHASE, 50 HZ, 1000 W)	onents.	DO. Material yard supply.	ard supply.
LA-5116 10" SIGN	Overh Clean Check interm AlING PI	aul the comp all gears for all seals al ational marin naterial and	Overhaul the complete search light assembly including rates all gears for azimuth and horizontal movements Check all seals and gaskets and renew if degrade international marine equipment paint(paint yard supply) (All material and all in way jobs under yard scope NG PROJECTOR (MAKE: RAY ENTERPRISES, KOLP)	ight assembly d horizontal i and renew paint(paint y lobs under y	novements an if degraded. ard supply) fard scope) SES, KOLKAT	LA-5116 Overhaul the complete search light assembly including revolving mechanism by dismantling. Delete. Clean all gears for azimuth and horizontal movements and replace defective components. Check all seals and gaskets and renew if degraded. Paint the light assembly using international marine equipment paint(paint yard supply) (All material and all in way jobs under yard scope) 10" SIGNALING PROJECTOR (MAKE: RAY ENTERPRISES, KOLKATA. 215 V, SINGLE PHASE, 50 HZ, 02 NOS.)	by dismantling. I've components. assembly using	Delete.	
LA-5117	Overh disma mirror (All n	Overhaul the complete light dismantling. Renew all weathe mirror and prove for operation.	Overhaul the complete light assembly including flay dismantling. Renew all weather sealing gaskets and rul mirror and prove for operation. (All material and all in way jobs under yard scope)	assembly in resealing gas iobs under y	ncluding flaps skets and rubb (ard scope)	Overhaul the complete light assembly including flaps and revolving mechanism by dismantling. Renew all weather sealing gaskets and rubber components, polish reflecting mirror and prove for operation. (All material and all in way jobs under yard scope)	mechanism by polish reflecting	DO. Material yard supply.	ard supply.
REFRIGER LA-5118	RATOR A Overh	ND DEEP FR aul the comp	REFRIGERATOR AND DEEP FREEZER (MAKE GOI LA-5118 Overhaul the complete system including	IKE GODRE	OREJ TYPE 230 L1 following:-	DREJ TYPE 230 LTRS (02 NOS)/90 LTRS (01NO)/235 LTS (01 NO) EACH) following:-	90 LTRS (01NO)/235 LTS (01 Delete.	NO) EACH)
M/s Chowgule	M/s Krasny	M/s Shoft Shipyard	SO I/C Engg Rajratan	SO I/C Electrical Rajratan	SO I/C Hull Rajratan	CGRPT (Srt) Rep	CO Rajratan	DTO CGDHQ-1	RTO (Refit)
1	BON A	0.2	3		Note:	2	,	, ↑ 2	*

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in the second	M/s Chowgule	INFRARED										LA-5123	VRO SYS			LA-5122		LA-5121	PAC FIRM	MAGNETI			LA-5120	PIRB (M		LA-5119	ART (MA					
	M/s Krasny	D COMML	(all m	optimu	(e)	<u>a</u>	/ repla	<u>(C)</u>	<u></u>	functio	(a)	Comple	TEM (MA	be can	Job inc	Calibra	renew		M/S ELC	C COMPA	PAC fir	laid do	Perforr	AKE M/S	servici	Perforr	KE M/S T	(All m	(d) Ov	standa	hinges	(a) (b)
A CONTRACTOR OF THE PARTY OF TH	M/s Shoft Shipyard	JNICATION	(all material and all in way jobs under yard scope)	ım performar	Up gradation	Repainting or	ce them whe	Check all the	Check thorou	functioning / any corrosion and renew if required.	Check the m	ete overhauli	KE: M/S IN	ried out at se	dudes renewa	ition of magr	renewed. Replace all defective components.	Overhauling of Magnetic compass to be carried out.	S ELCOME MARINE SERVICES (P) LTD	SS (MAKE:	PAC firm with servicing/ test report.	wn in EPIRB	n the function	THRANE &	servicing/ test report	n the function	HRANE & T	(All material and all in way jobs under yard scope)	(b) Overhaul of compressor or replace if found defective	standard equipment paint.	& handle. In	ack for any m
JA WAL	SO I/C Engg Rajratan/	SYSTEM (M	all in way j	nce. Function	n of Softwar	f Antenna us	rever necess	e circuit and	ughly the Ant	orrosion and I	nounting bas	ng of TVRO s	TELLIAN) P	a. Carry out	al of soft iron	netic compas	all defective of	gnetic compa	NE SERVICE	LILLEY ANI	cing/ test rep	user's manua	nal tests and	THRANE, T	<u>.</u>	nal tests. Ser	HRANE, TYI	all in way jo	npressor or re	t paint.	spect the sur	achanical da
SIR	SO I/C Electrical Rajratan	IAKE: M/S A	obs under y	al checks of o	e, Tuning ar	ing internatio	ary and chec	thoroughly in	enna and rep	renew if requ	e of Antenna	system includ	AC FIRM M	the functiona	correction b	s to be carri	components.	ass to be car	ES (P) LTD	<u>D GILLIE EN</u>	ort.	al page. Servi	Replacemen:	YPE SAILOR		vicing of the	PE SAILOR	obs under y	eplace if foun	,	face & paint	mage / corro
See	SO I/C Hull Rajratan	ZDEC LTD, E	ard scope)	complete syster	nd configuratio	nal marine sta	k the insulation	spect the all w	place the all the	ired.	a, Control Unit	Complete overhauling of TVRO system including followings:-	/S MOLOOBH	I checks of ma	ars. Magnetic	ed out and cal				IGLAND U.K,		icing of the equ	Perform the functional tests and Replacement of HRU to be carried out as	EPIRB (MAKE M/S THRANE & THRANE, TYPE SAILOR SGE-II, 01 NOS)		equipment to I	SART (MAKE M/S THRANE & THRANE, TYPE SAILOR SART-II, 02 NOS)	ard scope)	d defective.		whole assemble	cion and rapia
L BB	CGRPT (Srt) Rep	NGLAND), PAC		optimum performance. Functional checks of complete system to be carried or	Up gradation of Software, Tuning and configuration for Automatic control unit for	Repainting of Antenna using international marine standard RF paint.	replace them wherever necessary and check the insulation of same and record	Check all the circuit and thoroughly inspect the all wiring/unit/sub-unit/cables, renew	Check thoroughly the Antenna and replace the all the defective components	•	Check the mounting base of Antenna, Control Unit & Power supply unit for proper	,	TVRO SYSTEM (MAKE: M/S INTELLIAN) PAC FIRM M/S MOLOOBHOY PVT LTD, N	be carried out at sea. Carry out the functional checks of magnetic compass.	Job includes renewal of soft iron correction bars. Magnetic compass swing a	Calibration of magnetic compass to be carried out and calibration certificate to be issued.		Supporting Liquid an		MAGNETIC COMPASS (MAKE: LILLEY AND GILLIE ENGLAND U.K, MODEL: MK 2000)		laid down in EPIRB user's manual page. Servicing of the equipment to be carried out by	ed out as	<u>(SOI</u>		Perform the functional tests. Servicing of the equipment to be carried out by PAC firm with	NOS)				hinges & handle. Inspect the surface & paint whole assembly using international marine	o defective Doo
Jan	CO Rajratan	FIRM M/S EL		out and proved.	control unit fo		cord.	nit/cables, renev	onents.		y unit for prope		MUMBAI		and correction to	te to be issued.		and gasket to be		00)	,	rried out by	per procedure			PAC firm with					onal marine	r coal Door
24	DTO CGDHQ-1	COME INTEGR			~			<u> </u>				Delete.				Delete.		Delete.					Delete.			Delete.						
AP	RTO (Refit)	COMMUNICATION SYSTEM (MAKE: M/S AZDEC LTD, ENGLAND), PAC FIRM M/S ELCOME INTEGRATED SYSTEM																														
													1				L		L								I	<u> </u>				

TAMINA OT I TVG	TYGNIN	
LA-5124	Complete overhauling of infrared communication system. Job includes as follows:- (a) Cleaning of all IR Antenna thoroughly and carrying out functional checks of same including base station. Replace all the defective components. (b) Check all the circuit, terminal connection and thoroughly inspect the all wiring/unit/sub-unit/cables, repair / renew / replace them wherever necessary and check the insulation of	ete.
	same and record. (c) Check the functionality of Antennas from all the positions. Check the mounting bases of IR antenna & base station. Repair / replace if found defective.	
LB-5125	mpt – 01 no) non-operational. operation.	Delete. S&D
IFF {IDE	IFF {IDENTIFICATION OF FRIEND & FOE (MAKE: M/S HAL, HYDERABAD)}	
LA-5126	Complete overhauling of IFF system including as follows:- (a) Check all the mounting base and fitment of IR antenna & base station and renair /	ete.
	replace if found defective. (h) Check all the circuit terminal connection and thousand by increase all minimal (mit/ank)	
	unit/cables, repair / renew / replace them wherever necessary and check the insulation of	
	(c) Carry out the complete functional checks of IFF system as per manual specification & procedure and replace the all defective components.	
FM-200 P	FM-200 MAJOR FF SYSTEM (MAKE: M/s SUPER FIRE ENGG PVT LTD)	
LA-5127	carried out. All relays to be	DO through authorized firm. Spares CG supply.
LA-5128	Renew control supply emergency sealed battery (12V, 17AH – 02 Nos)	Delete, S&D
LA-5129	Following Alarms and all Indication lamps in Annunciation panel to be proved. (a) Pre-Discharge hooter+flasher - 06Nos (W/H,MCR, AER and FER) Spar (b) Alarm Bell - 01 No (Main Deck) (c) Strobes - 01 No (Main Deck)	DO through authorized firm. Spares CG supply
M/s Chowgule	M/s Krasny M/s Shoft SO I/C SO I/C SO I/C SO I/C GRPT (Srt) CO DTO Shipyard Engg Electrical Hull Rep Rajratan CGDHQ-1	TO RTO (Refit)

ng) in engine room DO. of boxes: 06 Nos. Material yard supply.	LB-5132 Battery box (Mat: MS fabrication with wooden flooring and wooden covering) in engine room DO. found perished and corroded. To be fabricated as per sample. Total no. of boxes: 06 Nos. Size as follows:-(Size: 88 cm x 78 cm x 34 cm)(LxBxH) – 03 Nos (Size: 56 cm x 38 cm x 34 cm)(LxBxH) – 03 Nos	LB-5
supply.		
DO. Spares and material vard	MISCELLANEOUS 1.A-5131 03 in no. Bridge window wipers to be overhauled including motor, spray mechanism and DO. Spares and material vard	MISCE
Delete.	LA-5130 Overhauling of washing machine to be carried out. Renewed all defective components. Delete. Washing Machine proved for satisfactory operation.	LA-5
	WASHING MACHINE (MAKE: M/S HAIER, CAPACITY – 05 KG), QTY – 02 NOS	WASH

	ren	Chowgule
	The second	M/s Krasny
	Q.	M/s Shoft Shipyard
	2 × ×	SO I/C Engg Rajratan
	K	SO I/C Electrical Rajratan
	Best	SO I/C Hull Rajratan
	MAN	CGRPT (Srt) Rep
/	Jr.	CO Rajratan
	Contraction .	DTO CGDHQ-1
	B	RTO (Refit)



Annexure-III of RFIC Minutes

Refer to Para 6.2 of Chapter 6 of CGBR 382

PRODUCT PERFORMANCE GUARANTEE CONTRACT FOR SUPPLY OF SELF POLISHING COPOLYMER (SPC)/BIOCIDE FREE FOUL RELEASE COATINGS FOR EXTERNAL UNDER WATER (FRC)

FOR INDIAN COAST GUARD

CONTRACT NO. : _____ DATED ____

BETWEEN	
THE PRESIDENT OF INDIA	
AND	

M/S......(NAME AND ADDRESS OF THE PAINT MANUFACTURER)

1. Preamble. This CONTRACT is made and entered into this day of
Year Two Thousand and by and between the President of
India, represented by the, Indian Coast Guard, India (hereinafter referred to as the
CUSTOMER, which expression shall mean and include his permitted successors and
assignees), the Party on one part, and
(hereinafter referred to as the SUPPLIER
which expression shall mean and include the firm's executors, administrators, successors
and permitted assignees), the Party on the other part. And whereas, the SUPPLIER has
agreed to supply high performance marine paints for application on specified Vessel
ICGS under SUPPLIER's supervision.

2. Scope of the CONTRACT.

- 2.1 The SUPPLIER undertakes to supply the paints for application under the audit/supervision of the SUPPLIER.
- 2.3 The complete details of the Paint Scheme for which the paints are supplied are placed at **Chapter 2** to this CONTRACT.
- 2.4 The CUSTOMER would utilize the paints for application on the specified areas of the designated vessels. In doing so, the rest of the coats in the specified paint scheme of the SUPPLIER concurred to by the CUSTOMER, would also be those received from the SUPPLIER as part of this supply in this CONTRACT or which are already held in stock. If the materials are drawn from stock, it should be ensured by the Customer that they are within the shelf life given in the Suppliers Product Data Sheet.
- 2.5 The CUSTOMER would ensure that the requisite conditions are adhered to during the surface preparation and application of the paints and that it is undertaken in the presence and under the documented audit/ supervision of a suitable representative of the SUPPLIER. In this context the supplier undertakes to guide and advice the CUSTOMER/APPLICATOR in surface preparation and paint application, with regard to the technical and safety requirements of the paints concerned as per the SUPPLIER's Product and Material Safety Data Sheets.
- 2.6 The SUPPLIER should satisfy that the requisite application conditions are adhered to and would be an advisor to the CUSTOMER/APPLICATOR who is responsible to achieve coatings standards including spread rate and DFT and jointly sign a working protocol along with the CUSTOMER and APPLICATOR (if a separate entity) to this effect for each and every vessel where the application is undertaken with the paints under this CONTRACT. The guarantee documentation will necessarily include the following "vessel specific" documents in three copies, one each for the Directorate of Logistics, Coast Guard Headquarters (If ordered by them), Regional Headquarters (If ordered by them), Repair agency, Ship and Paint supplier.

- 2.6.1 The coatings specification, along with recommended surface preparation standards (preferably to SA 2.5 standard).
- 2.6.2 The agreed upon scale of corrosion shall be either of following international standards namely ASTM D610 or ISO 4628-3:1982 or EXTENT DIAGRAMS or EUROPEAN RE SCALE
- 2.6.3 Notice from CUSTOMER to SUPPLIER informing of vessel name, dates and venue of planned coating application, with 7 days notice.
- 2.6.4 The working protocol signed by the SUPPLIER, the CUSTOMER and the APPLICATOR (if a separate entity from the CUSTOMER).
- 2.6.5 The daily weather conditions monitoring data.
- 2.6.6 In case of non-adherence to the SUPPLIER's representative's advice, "exception reports" shall be issued and attached, and shall form part of the guarantee. The areas covered under the "exception report" will not be covered under the guarantee.
- 2.6.7 The Surface Preparation and DFT report, which will contain all data on the surface preparation achieved and final DFTs of various coatings, by demarcated vessel area.
- 2.6.8 The final consumption report, along with products, quantities, batch numbers, etc.
- 2.6.9 It is also recommended that photographs of the in pre- and post-coating conditions are taken, and filed along with guarantee document with the CUSTOMER, repair agency and the vessel.

3. <u>Performance Guarantee</u>.

- 3.1 The following will be considered as paint failure/defect:-
 - 3.1.1 Visible corrosion marks
 - 3.1.2 Blistering
 - 3.1.3 Cracking
 - 3.1.4 Delamination, flaking or peeling
 - 3.1.5 Softening or swelling
 - 3.1.6 Visible Microscopic fouling (marine algae length exceeding 5 mm or shell/barnacles fouling exciding height of 3 mm.

3.2 The SUPPLIER will stand guarantee for the paints supplied hereby and also for the balance coats of paints applied, if any received from the SUPPLIER, which are drawn from stock and undertake restoration of the complete paint scheme over the entire area of the vessel where the paints under this CONTRACT are applied, inclusive of supply, surface preparation and application, under the following circumstances:-

TIME PERIOD (MONTHS)		FIRM TO ONLY SUPPLY PAINT FREE OF COST FOR TOUCH UP DEFECTIVE AREAS % DEFECTIVE	PREPARE &	TOTAL RENEWAL OF SCHEME. FIRM TO SUPPLY, PREPARE & APPLY PAINT % DEFECTIVE
	AREA	AREA	AREA	AREA
12	Less than 3 %	3 to 10 %		
24	Less than 6 %	6 to 10 %	10 to 25 %	
36	Less than 10 %			Greater than 25 %
48	Less than 15%	15 to 18 %	18 to 25 %	
60	Less than 18 %	18 to 20 %	20 to 25 %	

Note.

- 1. The above percentages shall be determined after a HPFWW High Pressure Fresh Water Wash of the Hull Exterior.
- 2. The performance guarantee of 05 years is applicable for the entire paint system. During the repairs of defective areas, the paint scheme should be restored from the visible coat after surface preparation according to the paint scheme.
- 3. If incident of paint failure (>25%) are reported more than once for a particular vendor/paint scheme, then the firm will be given vender holiday for a period of 06 months by Coast Guard Headquarters.
- 3.3 In case paint failure is less than the levels specified above, the SUPPLIER agrees to undertake supply of paints required for touch up/ maintenance on payment basis at the rates specified in the contract.
- 3.4 In case of maintenance of paint scheme beyond the performance guarantee period the SUPPLIER agrees to supply the paints required for touch up/maintenance at the rates specified in the Contract.
- 3.5 The SUPPLIER undertakes to position the required paints at the indicated place within three weeks of receipt of request.

- 3.6 Areas if any, as identified under Clause 3.2 above and touched up by the CUSTOMER would also be cumulatively added during assessment of areas of failure during further inspections within the duration of the CONTRACT. The paint used for touch up will have to been purchased from the Supplier and will have to be applied under the supervision of the Supplier. A joint report will be filed within 7 days of completion of the job.
- 3.7 Failure caused due to hot work or any mechanical damage to the coating due to physical effects would not be considered as paint failure.
- 3.8 **Pro-Rata Cost**. The SUPPLIER can take on job or compensate CUSTOMER in terms of pro-rata cost for surface preparation & paint application for repair of defective areas. The basis for determining the pro rata cost will be the prevailing rates in commercial shipyard where the docking is scheduled.

4. Commencement and Duration.

- 4.1 The performance guarantee under this CONTRACT will be valid for a period of **60 months** for the complete paint scheme, which shall be considered applicable from the date of application of the last coat of the scheme. The paints will be the applied in sequence as recommended by the Supplier and the intervals between coatings and other technical requirements as per Product Data Sheet will have to be adhered too. If not, firm's exception report will be considered for final claim.
- 4.2 This guarantee will expire and the SUPPLIER's obligations, except in respect of claims already validly notified under this guarantee, shall terminate 60 months from the effective date.

5. <u>Touch UPS During Routine Examination</u>.

- 5.1 Since there are no equivalent products, and since this is an extended performance scheme, the CUSTOMER <u>WILL NOT</u> apply paints from other sources, unless cleared by the SUPPLIER. In case of evidence of such application, any failure over the touched up areas will not be the liability of the SUPPLIER as per the terms of this CONTRACT.
- 5.2 The balance areas however, coated with the SUPPLIER's paints would continue to be covered by the provisions of this CONTRACT for the full duration.
- 5.3 The CUSTOMER shall inform the SUPPLIER and jointly record areas requiring touch ups on CUSTOMER's liability and also about use of paints from other firms, if actually applied.
- 5.4 The CUSTOMER may apply paints received from the SUPPLIER over areas requiring touch ups, which are not the liability of the SUPPLIER as per Para 3 and reserves the right to use paints of other firms for this purpose.

5.5 However in the event of touch ups using paints from other sources, any further failure over the touched up areas would not be the liability of the SUPPLIER as per the terms of this CONTRACT, except for assessing cumulative areas of failure explained in Para 3.3 within the duration of this CONTRACT.

6. Claims.

- 6.1 The CUSTOMER shall notify the SUPPLIER of claim by letter or facsimile transmission giving brief details of the nature of defects and the circumstances in which it was discovered, including the date of detection.
- 6.2 If the SUPPLIER wishes to inspect the area upon which a claim is being made, the vessel will be made available for inspection as soon as possible considering the operational requirement of the vessel.
- 6.3 The SUPPLIER shall depute his representative to inspect the vessel within three days on receipt of written of facsimile communication of availability of the vessel for inspection at any port in India.
- 6.4 On acceptance of liability, the SUPPLIER undertakes to position the required paints at any Indian port where the vessel is, for repairs of the coating within two weeks of joint inspection.
- 6.5 The CUSTOMER shall inform the SUPPLIER in writing of any scheduled refit period/dry docking of the vessels covered under this CONTRACT during the guarantee period. The SUPPLIER may depute a representative for undertaking inspection of the areas coated with paints covered under this CONTRACT.
- 6.6 Under no circumstances shall the CUSTOMER be responsible for arrangements for travel, boarding and lodging of representatives and personnel for undertaking inspection, supervision and repairs.

7. Arbitration.

- 7.1 In the event of a dispute arising out of the terms of this CONTRACT, the Parties undertake to make every effort to reach an amicable settlement. The arbitrations in this regard will be held at place of paint application yard.
- 7.2 Notwithstanding anything elsewhere provided in this CONTRACT, dispute, disagreement or any question arising of or relating to this CONTRACT, or relating to its construction or performance which cannot be settled amicably within sixty (60) days or longer period as may be mutually agreed upon, from the date of which either Party informs the other in writing by a notice that such a dispute, disagree mentor question exists be referred to the Coast Guard Administrative Authority (AA).
- 7.3 The arbitration Tribunal shall have its seat at place of paint application yard.

8. <u>Signatures and Witnessing by Partie</u> have hereunder set their respective hands the written.	es. In witness whereof the parties heretone day, the month and the year first above
For and on behalf of M/s	For and on behalf of The President of India
Signature:	Signature:
Name:	Name:
Date:	Date:
In the Presence of Witnesses	in the Presence of Witnesses
Signature:	Signature:
Name:	Name:
Date:	Date:

