

**COMMON ELECTRICAL EQUIPMENT SPECIFIC CHECK BY CTT(PBR)**

<b><u>Ser</u></b>	<b><u>Checks to be undertaken</u></b>	<b><u>Sat</u></b>	<b><u>Unsat</u></b>	<b><u>Observation</u></b>	<b><u>Remarks</u></b>
1.	A Pre-OST Check Off list checking adherence of ship to various policies w.r.t Electrical Equipment/ Hygiene has been worked out and appended in succeeding paragraphs for checks.				
2.	<b><u>Whether policies on the following are being implemented</u></b>				
	2.1 Usage of double pole 230V, 5/15 Amp switch sockets. <b>Ref.</b> IHQ MoD(N) letter EE/03/9711 dated 02 Feb 17.				
	2.2 Use of Laundry iron boxes.				
	2.3 Use of lead lamps.				
	2.4 Modification of 230V domestic supply scheme to 3 Phase 4 wire system and double pole MCBs. <b>Ref.</b> IHQ MoD(N) letter EE/03/9721 dated 05 Jan 11.				
	2.5 Availability of HV insulated synthetic rubber mats. <b>Ref.</b> IHQ MoD(N) letter EE/03/9721 dated 30 DEC 21.				
	2.6 Conduct Power quality audit. <b>Ref.</b> IHQ MoD(N) letter EE/POLICY/L-03/POWER-17 dated 22 Apr 10.				
	2.7 Fitment of COTSs LED lights. <b>Ref.</b> No 36/15 and IHQ MoD(N) letter EE/POLICY/9711(LED)/L-98 dated 18 Mar 15.				
	2.8 Shielding integrity of CAT 'A'. <b>Ref.</b> NO (STR) 05/15.				
	2.9 Removal of metallic wire mesh/ant other material from electrical cables. <b>Ref.</b> IHQ MoD(N) Fax EE/03/9721 Dated 17 Feb 17.				
	2.10 Pipelines are not passing through switchboard compartments. <b>Ref.</b> Article 0707 OF NES 502.				
	2.11 Conduct of Electrical Safety Audit.				
	2.12 Conduct of Galley Safety Audit. <b>Ref.</b> NO 27/06.				
	2.13 Light Switches are installed outside the battery compartment.				

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	2.14 Conduct of Portable Equipment Audit.				
	<b>Ref. No 02/16.</b>				
	2.15 Lighting in magazine compartments.				
	<b>Ref. IHQ MoD(N) / DEE letter EE/03/9712/safety Audit dated 27 Nov 18.</b>				
	2.16 Whether modifications in power supply layout are recorded in the schedule of cables and schematic layout board in distribution boxes.				
	<b>Ref. IHQ MoD(N) letter EE/03/9711/POWER/POLICY dated 11 May 15.</b>				
3.	<b><u>Whether following safety templates are available onboard.</u></b>				
	3.1 Operation of main switchboard.				
	3.2 Handling fire in main switchboards.				
	3.3 Handling low insulation in switchboards.				
	3.4 Handling partial and total power failure.				
	3.5 Switchboard watch keeping.				
	3.6 Laying of emergency cable.				
	3.7 Operation of Energised/ Live electrical equipment.				
	3.8 Safety measures during monsoon.				
	3.9 Rounds of Electrical compartments.				
	3.10 Pre/ Post sailing checks				
	3.11 Electrical emergencies during entering and leaving.				
	3.12 Connecting and disconnecting shore supply.				
	3.13 First aid case of Electrical shock.				
	3.14 Securing of sea.				
	3.15 Gyro emergency.				
	3.16 Handling/ Charging batteries.				
	3.17 Operation of motor and converters.				
	3.18 Maintenance of Antenna and Waveguides.				
	3.19 Working with HT supplies				
	3.20 Dry Docking				
	3.21 Water ingress in Electrical equipment.				
	3.22 Precaution in extreme weather conditions				

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	3.23 Working aloft.				
	3.24 Testing and maintenance of portable equipment.				
	3.25 Action during RAS/ Maneuvers.				
	3.26 Working with power tools				
	3.27 Precaution for ammunitioning and de- ammunitioning.				
	3.28 Darken ship.				
	3.29 Undocking checks				
4.	<b><u>Whether following books and records are available and being maintained.</u></b>				
	4.1 Log and progress book				
	4.2 Switch board log book				
	4.3 Gyro log book (as applicable)				
	4.4 Weapon stabilizer Log book.				
	4.5 Defect book as (IN -455).				
	4.6 Battery Log book (IN -384).				
	4.7 Battery Log Book (Maintenance free).				
	4.8 Electrical Training Book.				
	4.9 SPM Log Book(ERMR)				
	4.10 Antenna insulation Book.				
	4.11 CRETE Book.				
	4.12 Electrical Survey and demand Book.				
	4.13 PTS register.				
	4.14 Ty loan Book (internal).				
	4.15 Ty loan Book (external).				
	4.16 Cable Register.				
	4.17 EMI/EMC Log Book.				
	4.18 DOP Register.				
	4.19 OPDEF /CNADEF/STOREDEM/OPDEM/CANDEM Register.				
	4.20 EMAPS				
	4.21 Electrical PLL (form S 1099)				
	4.22 Divisional record book.				

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	4.23 Sailing order book (IN – 499)				
	4.24 Equipment logs/ Miscellaneous records.				
	4.25 Record of handling over/ taking over of Electrical officer.				
	4.26 Electrical standing orders.				
	4.27 Watch and quarter bill.				
	4.28 Maintenance schedule.				
	4.29 D 787/ SPTA lists (OBS, B&D, LTE)/ CA 511/Warrant of stores.				
	4.30 E DART.				
	4.31 Policy file (Technical).				
	4.32 Policy file (General).				
	4.33 Check off lists.				
	4.34 SFD/ Electrical maintenance schedule.				
	4.35 Defect Acquaints.				
	4.36 Record of Navy orders.				
	4.37 GRAQ/ ship system specifications (Part IV/ DATs reports.				
	4.38 Allowance lists (CRETE).				
	4.39 HATs/ SATs reports/ Test certificates.				
	4.40 Documentation list				
	4.41 d 787 'G'/As Made & As fitted drawings list.				
5.	<b><u>Calibration/ Load test.</u></b>				
	5.1 Whether all CRETE are calibrated every 24 months.				
	5.2 Whether all meters of Switchboards, Main breakers are calibrated.				
	5.3 Whether all meters of Rectifiers of Battery Rectifier are calibrated.				
	5.4 Whether anchor windlass and capstan starter has been calibrated and tested.				
	5.5 Whether ventilation starters have been calibrated and tested.				
	5.6 Whether all load tested, certificate is available for generators and all parameters are within laid down limits and critical issues highlighted in trial reports/ certificates are liquidated.				
	5.7 Whether load test certificate of Helo Starting system is available.				
	<b>Ref. Para 13, section III of Annexure I to NO (Str) 13/2009.</b>				

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	5.8 Whether Log is calibrated.				
<b><u>MATERIAL CHECKS</u></b>					
6.	<b><u>Harbour.</u></b>				
	6.1 Compartment checks (General).				
	6.2 Whether the compartment is free from following warning signs.				
	6.2.1 Smoke, sparks, arcing, or unusual sound from electrical motors or contractors.				
	6.3 Frayed and damaged cords or plugs.				
	6.4 Frequent tripping of breakers.				
	6.5 Unusually hot electric motors, transformers and other electrical equipment.				
7.	<b><u>Common Measures during Monsoon.</u></b>				
	7.1 Whether all motors, control gears, indicators and repeaters fitted on weather deck are covered with weatherproof canvas/ suitable covers.				
	7.2 Whether all panel covers/ cable glands and antennae glands on weather deck are leak free.				
8.	<b><u>Common Checks.</u></b>				
	8.1 Whether rubber mats are available near electrical equipment.				
	8.2 Whether all cable glands are seated.				
	8.3 Whether portable CO2/ AFFF extinguisher is available.				
	8.4 Whether emergency escape arrangement is available (ELSA).				
	8.5 Whether AELs are available and serviceable.				
	8.6 Whether water tight integrity of electrical equipment is maintained.				
9.	<b><u>Electrical Safety.</u></b>				
	9.1 Whether all meters/ instrumentation are calibrated.				
	9.2 Whether 'Danger High Voltage' and 'Do Not Switch On' tallies/ boards are available.				
	9.3 Whether all bulbs, lights and switches are operational.				
	9.4 Whether test bench is insulated.				
	9.5 Whether sparks proof safety goggles are available.				
	9.6 Whether area is secured.				
	9.7 Rubber mats are placed in front of work bench.				

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10.	<b><u>Switchboards and Generators.</u></b>				
	10.1 Whether all electrical equipment and starter/ control panels are earthed.				
	10.2 Whether wires/ straps are tightly fitted and terminals are not painted.				
	10.3 Whether proper plugs and lugs are used for connecting power supply.				
	10.4 Verify that fuses, breakers and relays in distribution boxes and control circuits are not bypassed.				
	10.5 Whether any loose wire and bare live conductors/ terminals are observed including on battery charging terminals and portable emergency fuse boards.				
	10.6 Whether proper cover/ cap for all connectors on weather deck are available.				
	10.7 Whether shades for all light fittings and lead lamps are intact.				
	10.8 Whether domestic power supply transformers and distribution boards are loaded as per their capacity.				
	10.9 Whether all UPS/ batteries are secured property and battery terminals are protected with insulated caps/ covers.				
	10.10 Whether all power supply sockets on weather deck are water tight.				
	10.11 Whether earth pin is grounded in all power supply sockets.				
	10.12 Whether all sections of switchboard are earthed.				
	10.13 Whether insulation is within limits.				
	10.14 Whether Electrical/ Machinery intercom is operational.				
	10.15 Whether all safety cutouts/ protection units/ preferential trip systems/ alarms are operational.				
	10.16 Whether all generators are load tested and all parameters are within laid down limits and critical issues highlighted in trial reports/ certificates are liquidated.				
	10.17 Whether the compartment is free from water/ fuel/ oil leakages and condensation.				
	10.18 Whether the following personal protective equipment (PPE) are available with Electrical Repair Teams				
	10.18.1 Rubber gloves.				
	10.18.2 Insulated tools.				

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	10.18.3 Spark proof safety goggles.				
	10.18.4 Helmets with head torch				
	10.19 Whether the switchboard and shore supply breakers are free from combustible materials like fuel and hydraulic oil.				
	10.20 Whether there are any Outlet of ventilation trunks installed directly above switchboard.				
	10.21 Whether any pipelines are passing through switchboard.				
	10.22 Whether switchboard layout diagram available.				
	10.23 Whether watch keeper hand out board available.				
11.	<b><u>Helo Starting System/ Aviation Facilities.</u></b>				
	11.1 Is the HSR load tested to 1200 A or to the rated current?				
	11.2 Has the ship undertaken case for upgradation of the HSR in case of class B/C/D rectifiers i.a.w. extort policies?				
	11.3 Is the condition of the DC cables and the NATO adapter satisfactory?				
	11.4 Has the output been checked at the rectifier gauge/ cable end / with rectifier on load?				
	11.5 Is the HSC load trials undertaken?				
	11.6 Is the condition of the AC cables and the NATO adapter satisfactory?				
	11.7 Is the condition of the Connection boxes outside the hanger satisfactory?				
	11.8 Are all meters/ instrumentation/ protection devices of the HSC calibrated?				
	11.9 Are all meters/ instrumentation/ protection devices of the HSR calibrated?				
	11.10 Are all helo deck periphery light operational and have sufficient brilliance?				
	11.11 Is the helo deck periphery light dimmer operational?				
	11.12 Is the GPI calibrated and is the calibration certificate held onboard?				
	11.13 Is the GSHB operational?				
	11.14 Are all helo hangar lights operational?				
	11.15 Whether hanger lights, deck lights, Stop/Go lights, GPI and Dimmer				

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	facilities are operational. Ref. Para 5, section III of Annexure I to NO (Str) 13/2009.				
12.	<b><u>UPS.</u></b>				
	<b>12.1 Are the following equipment to be fitted with Ups i.a.w. IHQ MoD (N) letter EE/03 97/11/Policy/L-05 dated 24 Jan 17?</b>				
	12.1.1 Nav Lights				
	12.1.2 Telephone exchange				
13.	<b><u>Battery Compartment.</u></b>				
	13.1 Whether all batteries are arranged neatly and secured for sea.				
	13.2 Whether fresh water supply, wash basin and drainage facility are available.				
	13.3 Whether light switches are installed outside the compartment.				
	13.4 Whether the compartment is free from water or acid spillage.				
	13.5 Whether the compartment is free from combustible materials such as fuel and hydraulic oil.				
	13.6 Whether the following personal protection equipment are available.				
	13.6.1 Gum boots rubber.				
	13.6.2 Gloves rubber.				
	13.6.3 Goggles complete with clear windows.				
14.	<b><u>Galley.</u></b>				
	14.1 Whether galley safety indication lamps are available outside galley and in DCHQ.				
	14.2 Whether single isolating switch for all galley equipment other than refrigeration units is fitted adjacent to the main entrance door of galley.				
	14.3 Whether locking arrangement for main isolating switch is available.				
	14.4 Whether ventilation starting mechanism is available within 1.8 to 3 m of deep fat fryer.				
	14.5 Whether instructions in English and Hindi on first aid for electric shock, affixed in a conspicuous place.				
	14.6 Whether insulation of equipment cables is within limit.				
	14.7 Whether all power supply cables are running along the installed channel plates and conduits.				
15.	<b><u>HF/ Antennae Post.</u></b>				
	15.1 Whether high voltage marking of transmitter and radio hazard				



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	markings/ boards are available.				
	<b>Ref.</b> Article 0705 of BR 2000 (20).				
16.	<b><u>Steering Post.</u></b>				
	16.1 Whether AELs are fitted in the compartment.				
	16.2 Whether rubber mats are placed in front of electrical equipment.				
17.	<b><u>Equipment Rooms/ Convertor Room.</u></b>				
	17.1 Check whether the following in equipment rooms such as Gyro, Steering gear, Radars etc. are available.				
	17.2 Whether ACOS/UYPs and fault alarms for critical equipment such as gyro, steering gear, navigational lights, etc. are operational.				
	17.3 Whether all meters/ instrumentation are calibrated iaw MAINTOPS.				
	17.4 Whether all safety cut offs are operational.				
	17.5 Whether rubber mats are placed in front of equipment.				
	17.6 Whether HP pneumatic systems and HP air bottles are pressure tested.				
	17.7 Whether hydraulic systems such as accumulator, pressure gauge, valve, pipe lines are pressure tested.				
18.	<b><u>Magazine (Specific Compartment).</u></b>				
	18.1 Whether lighting switches are fitted outside the compartment.				
	18.2 Whether only burst proof glass lamp fittings are fitted.				
	18.3 Whether only necessary continuo scales pass through the magazine and no junction boxes are installed in the past.				
	18.4 Whether all electrical cables are running as high as possible.				
	18.5 Whether any naked lights are used.				
	18.6 Whether any waveguides are running through the magazine.				
	18.7 Whether light fittings are divided into two different groups, each fed from a different source of supply.				
19.	<b><u>Sound Power Telephone.</u></b>				
	19.1 Whether all sound powered telephone are operational.				
	19.2 Whether SPT is available from bridge to conning positions, all steering posts, AIO compartment (Command Post and Ops Room), MCR and DCHQ.				

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20.	<b><u>Galley Equipment.</u></b>				
	20.1 Whether all galley equipment are maintained.				
	20.2 Whether protective guards for all rotating parts of labour saving equipment, viz, meat cutting machines, mixers atta kneading machines etc. is fitted.				
	20.3 Whether all galley equipment is earthed.				
	20.4 Whether safety cut-out thermostat for deep fat fryer is operational.				
21.	<b><u>Split ACs.</u></b>				
	21.1 Whether double pole switches are used as On/Off switches.				
	21.2 Whether Moulded Circuit Breakers (MCB) are used for split ACs as far as feasible.				
	21.3 Whether screened and single length cables are used.				
	21.4 Whether cable ends and switches free from carbonization/ deformation.				
	21.5 Whether all wires are laid down with proper channel plate and secured with clips/ cables tie.				
	21.6 Whether any extra/ unwanted wires are coiled and kept near the AC panel.				
22.	<b><u>Portable Electrical Equipment.</u></b>				
	22.1 Whether all portable electrical equipment including iron boxes in laundries are earthed with maximum earth resistance of 0.35 ohms (supplied directly and 0.50 ohms (supplied through an extension lead).				
	22.2 Whether quarterly checks of portable electrical equipment are being conducted.				
	22.3 Whether any temporary power supplies are utilised for prolonged durations.				
	22.4 Whether three pin sockets are used for portable domestic appliances.				
	22.5 Whether power cables are of single length.				
23.	<b><u>ICCP System.</u></b>				
	23.1 Whether maintenance of the system is being undertaken as per MAINTOPS.				
	23.2 Whether condition of the cables and conduits is intact.				

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	23.3 Whether hull potential values are within safe range.				
	23.4 Whether hull potential is measured using an external zinc reference electrode once every fortnight.				
	23.5 Whether pre-set hull potential is set on the auto control unit.				
24.	<b><u>DAT Recorder.</u></b>				
	24.1 Whether conning and machinery intercoms are interfaced with DAT recorder.				
	24.2 Whether DAT/ voice recorder log is being maintained.				
25.	<b><u>MDA.</u></b>				
	25.1 Whether interfacing of GPS, CTD, COTs radars, AIS, Sonar, Anemometer, Echo sounder, gyro and log with Trigun is available.				
	25.2 Whether MDA node/ slave display is available.				
26.	<b><u>AIS.</u></b>				
	26.1 Whether AIS is available.				
	26.2 Whether AIS is interfaced with GPS/DGPS, MDA, NAV Radar, ECDIS, Gyro, Log, Integrated Bridge system (if fitted), CTD/CAAIO, LINK II.				
	26.3 Whether 24V DC backup is available for AIS.				
27.	<b><u>ECDIS.</u></b>				
	27.1 Whether GPS, AIS and Radar are Interfaced with ECDIS.				
	27.2 Whether base version and latest correction of ENC's, paper charts and navigation publications are available.				
28.	<b><u>Gyro/ Magnetic Compass.</u></b>				
	28.1 Whether lubber line alignment of gyro repeaters has been carried out.				
	28.2 Whether gyro failure alarm is available in bridge.				
	28.3 Whether swing check of magnetic compass has been carried out and deviation card is available.				
29.	<b><u>Steering Gear.</u></b>				
	29.1 Whether following audio and visual failure alarms are available in bridge.				
	29.1.1 Hydraulic failure.				
	29.1.2 Control failure.				

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	29.1.3 Total power failure.				
	29.2 Whether ACOS for steering gear supply is available.				
	29.3 SPM checks and health of steering gear.				
	29.4 Operational status of all available modes of operation as per system design from various steering locations onboard.				
30.	<b><u>Anchor Windlass and Capstan.</u></b>				
	30.1 Whether MAINTOP routines are being carried out.				
	30.2 Whether current and SPM parameters are within prescribed limits.				
	30.3 Whether all insulation parameters are within limits.				
	30.4 Whether earthing straps are intact.				
	30.5 Whether electromagnetic brakes are operational.				
	30.6 Whether motors/ starters are covered with waterproof covers.				
31.	<b><u>General and Engine Room Ventilation.</u></b>				
	31.1 Whether MAINTOP routines are being carried out.				
	31.2 Whether current and SPM parameters are within prescribed limits.				
	31.3 Whether all insulation parameters are within limits.				
32.	<b><u>Laundry.</u></b>				
	32.1 Use of iron box				
	32.2 Whether visual warning indication is available for iron box switched On/ Off at DCHQ/ Outside laundry.				
	32.3 Whether iron box is being used with good quality three core flexible cable, and is earthed.				
	<b>Ref. NO 53/02 and FOST SAQ/L-01/14.</b>				
	32.4 Whether standard marine grade plugs/ sockets are being used.				
	32.5 No extension board/ cord is being used.				
	32.6 The electrical cord is arranged/ laid out in a manner, so that it cannot be pulled or tripped over.				
	32.7 No other high- wattage appliance is being used on the same circuit to avoid an overload.				
	32.8 The stowage holder for the iron box is sited in a suitable position away from the electrical socket iaw Def. Stan 02-123 Part 1 issue 2.				
	32.9 Adequate lighting, ventilation and drainage are available.				

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	32.10 Protective rubber mats are available near ironing table/ board.				
33.	<b><u>Window Wipers.</u></b>				
	33.1 Whether all window wipers are operational.				
34.	<b><u>Electric Siren.</u></b>				
	34.1 Is the siren operational from all location as per design?				
	34.2 Is the system available in auto model?				
	34.3 Are all components grounded?				
35.	<b><u>NLCP.</u></b>				
	<b>Ref. NLCP EED-Q-262.</b>				
	35.1 Are all navigational lights checked during sea and action?				
	35.2 Are all navigational lights operational?				
	35.3 Are there individual toggle switches for each navigation light with, LEDs adjacent to the corresponding light control switch iaw ED-Q-262?				
	35.4 Is a MIMIC panel available in OPS room?				
	35.5 Is LED test facility operational?				
	35.6 Is alarm and its reset facility available in NLCP iaw EED-Q-262?				
	35.7 Is dimmer available in NLCP iaw EED-Q-262?				
	35.8 Does the NLCP have a operational backup supply?				
	35.9 Are all 24 V emergency lights operational?				
	35.10 Are weather proof sockets available for connection of stern light/ anchor light etc?				
36.	<b><u>Boat Davit.</u></b>				
	36.1 Whether maintenance is being undertaken as per MAINTOPS.				
	36.2 Whether limit switches for upper hoisting limit and slewing movement are operational.				
37.	<b><u>Man Trap Alarm.</u></b>				
	37.1 Whether Mantrap alarm for cold room and cool room is available in DCHQ, Ship galley and Officer galley.				
	37.2 Whether battery backup for alarm is available.				
38.	<b><u>ACOS.</u></b>				
	38.1 Are both normal and alternate supply available for all ACOS?				

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	38.2 Are all the ACOS operational?				
	38.3 Does the supply change over occur without tripping the downstream equipment?				
	38.4 Are all indications operational?				
39.	<b><u>Emergency Supply.</u></b>				
	39.1 Are all emergency cables as per the ships drawing available on board?				
	39.2 Are shrouded plugs/ springs/ cylindrical sleeve of moulded insulation material/ flexible corrugated rubber sheath available for all cables?				
	39.3 Have the earth connection cables been provided with hook-end terminals for securing.				
	39.4 Are all bulkhead earth connection terminals provided with securing under wing nuts.				
	39.5 Are all cables marked with an identification number and with a brief indication of its purpose?				
	39.6 Are all bulkhead cable stowage marked with an identification number?				
	39.7 Are all emergency changeover switches of DBs/Fuse panels operational?				
	39.8 Are T handles available at all ECBs/ DBs/ FPs and service points?				
	39.9 Are all portable transformers as per SFD/ drawings available?				
	39.10 Availability of portable emergency link boxes as per SFD/ drawings.				
	39.11 Is the insulation of the fixed emergency run greater than 2 Mohm?				
40.	<b><u>Fuse Panel.</u></b>				
	40.1 Are all cable tallies in place?				
	40.2 Are all fuse panels cleaned with dry air?				
	40.3 Is any damaged insulation of cables (if any replaced)?				
	40.4 Are there any fuses replaced using fuse wire?				
	40.5 Are there any missing fuses?				
41.	<b><u>Transrectifiers.</u></b>				
	41.1 Are all contact and connections clean?				
	41.2 Is rectifier failure unit tested on load, cut off power supply?				
	41.3 Are load trials carried out at the rated value?				

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	41.4 Is the battery bank automatically taking over in case of supply failure?				
	41.5 Are the battery being trickle charged when not in use?				
	41.6 Does the ship have a Transrectifier failure audio/ visual alarm in MCR/ switchboard.				
	41.7 Is the insulation resistance greater than 1 M ohm?				
42.	<b><u>Wire Aerials.</u></b>				
	42.1 Are the wire ropes are free of kinds and frayed strands?				
	42.2 Are the bonding straps installed and intact?				
	42.3 Is the antenna wire properly stressed?				
	42.4 Are the insulators free of grease, paint and salt?				
	42.5 Are the wire safety link installed and intact?				
	42.6 Are the insulators free of cracks?				
	42.7 Is the insulation/ resistance of antenna satisfactory?				
43.	<b><u>Whip Aerials.</u></b>				
	43.1 Are the insulators free from cracks and salt deposit?				
	43.2 Are the antenna base tuner bonded?				
	43.3 Is the antenna tuner pressurized?				
	43.4 Are the insulation checks of ABT satisfactory?				
	43.5 Are the insulation/ resistance checks of antennas satisfactory?				
44.	<b><u>HK 014/ M7 Antennas.</u></b>				
	44.1 Is the condition of RF paint on the antennas satisfactory?				
	44.2 Are the insulation/ resistance checks of antennas satisfactory?				
45.	<b><u>Mainbroadcast/ Intercom/ Interphone.</u></b>				
	45.1 Have the system trials been undertaken by ETMU?				
	45.2 Does the mainboardcast have priority setting for critical locations?				
	45.3 Are all location provided with speakers of appropriate rating as per drawings?				
	45.4 Are all critical locations connected through both Con 1 and 2?				
	45.5 Are location of all speakers and microphones as per the action manning?				

Ser	Checks to be undertaken	Sat	Unsat	Observation	Remarks
	45.6 Are all amplifier optimally loaded?				
	45.7 Are all speakers and associated components effectively grounded?				
	45.8 Is the system backup satisfactory?				
	49.9 Have headsets been provided in machinery component?				
	49.10 Are flasher units installed in machinery compartment?				
46.	<b><u>Communication Sets.</u></b>				
	46.1 Are all communication sets as per the SFD operational?				
	46.2 Availability of OP checks reports of all communication equipment?				
	46.3 Have the VSWR measurements been undertaken for all communication sets?				
	46.4 Have the power output measurements been undertaken for all communication sets in various modes?				
	46.5 Are the RCU of the individual sets operational?				
	46.6 Are all communication sets free from any interference?				
	46.7 Is the ACOS feeding supply to the sets operational?				
	46.8 Have two communication sets below 2 KW been provided with backup supplies?				
47.	<b><u>NBC Monitoring.</u></b>				
	47.1 Are all sensors of the SIRS operational?				
	47.2 Are all sensors of the SICADS operational?				
	47.3 Is the trial report of SIRS available?				
	47.4 Is the trial report for SICADS available?				
	47.5 Are the NBC monitoring equipment calibration report in date?				
	47.6 Are the operating procedure for SIRS and SICADS available near the equipment?				
	47.7 Are the nucleonic return being sent for the onboard sources?				
48.	<b><u>Telephone Exchange.</u></b>				
	48.1 Is the telephone exchange operational?				
	48.2 Is the list of phone numbers available at all locations?				
49.	<b><u>Degaussing.</u></b>				
	49.1 Is the system operational in both manual and auto mode?				
	49.2 Are all external interfaces for the system available?				



<b>Ser</b>	<b><u>Checks to be undertaken</u></b>	<b><u>Sat</u></b>	<b><u>Unsat</u></b>	<b><u>Observation</u></b>	<b><u>Remarks</u></b>
	49.3 Is the electrical/ EMI hygiene of equipment and associated cabinets satisfactory?				
	49.4 Are the switching On/ Off procedure available?				
	49.5 Are the insulation values of the degaussing coils satisfactory?				
	49.6 Are the system setting as per last ranging trials report?				
	49.7 Are the insulation, SPM and starting / running current of MG sets satisfactory?				
	49.8 Are all panel meters calibrated?				
	49.9 is appropriate current being injected in the different coils?				
	49.10 Has the annual health audit of the system been undertaken iaw IHQ MoD(N) Letter WM/2855 dt 29 May 13?				
50.	<b><u>GSHB.</u></b>				
	50.1 Is the system operational?				
	50.2 Is the bar illumination panel operational?				
	50.3 is the bar illumination potentiometer operational?				
	50.4 is switching ON/OFF procedure in the compartment available?				
	50.5 Has the functional check of system been undertaken with stimulator?				
	50.6 Are the last HAT/SAT/Ops Checks reports available?				
	50.7 Are the operation of push buttons and limit switches satisfactory?				
51.	<b><u>Miscellaneous PGD.</u></b>				
	51.1 Are Power quality checks being conducted by SS annually?				
	51.2 Has the annual power quality surveillance audit been conducted by ETMA/ETMU? (For ships applicable)				
	51.3 Does the ship have a 3 Ph, 4 Wire 230 V distribution system for all domestic supplies?				
	51.4 Are all 230V 6/16 Amp sockets compliant with IHQ MoD(N) letter EE/03/9711 Dated 02 Feb 17?				
	51.5 are the cable run/cable channel tray covered with wire meshes/any other material in contravention to IHQ MoD(N) letter EE/03/9711 dated 17 Feb 17?				
	51.6 Do the installed Led based luminaire to conform to EED-50-33 FOR design and technical requirement?				
	51.7 Are there sufficient number of 24 V lead lamps available iaw ETMA				

<u>Ser</u>	<u>Checks to be undertaken</u>	<u>Sat</u>	<u>Unsat</u>	<u>Observation</u>	<u>Remarks</u>
	letter ETMA/318/103/EH dated 11 mar 15?				
	51.8 Are al portable equipment's which are fed by flexible cables being quarterly mustered iaw NO 02/16?				
	51.9 Are the following ETMU trial reports, iaw No 14/15, available:-				
	51.9.1 DAs.				
	51.9.2 Helo starting rectifiers.				
	51.9.3 Helo starting convertors.				

<u>Ser</u>	<u>Checks</u>	<u>Yes/ No/NA</u>	<u>Observation</u>	<u>Remarks</u>
<b>Radars including Cots Radars</b>				
1.	Are radars operational?			
2.	Check availability of Rubber mats in HF post.			
3.	Is the ventilation of the compartment/ devices functional/ effective?			
4.	Are all electrical equipment/ devices earthed, and wires/ straps tightly fitted and terminals free from paint?			
5.	Is the system BITE checks, if available satisfactory?			
6.	Are all interfaces as per Technical; Manual interface document available?			
7.	Are all cabinet doors tightly closed and interlocks maintained?			
8.	Have the six monthly parameter checks wherever applicable been undertaken?			
9.	Are the EMAP and defect book of the system updated?			
10.	Are all maintenance routines carried out as per MAINTOP and if not has FUSS been raised?			
11.	Has the tracking on simulated target using TCC been undertaken with follow up check of all mountings?			
12.	Are the azimuth and elevation locks operational?			
13.	Are the HAT/ SATs report available?			
14.	When was the last fine alignment checks of the sensors carried out?			
15.	Are the alignment checks with bore sight camera satisfactory?			
16.	Are the EMAP and defect book of the system updated?			

Ser	Checks	Yes/ No/NA	Observation	Remarks
17.	Are all maintenance routines carried out as per MAINTOP and if not has FUSS been raised?			
18.	Is the Man Aloft Switch operation satisfactory?			
19.	Is a combiner unit/interswitch fitted for Nav Radars to obviate blind arc iaw IHQ MoD(N) letter WP/0204 dated 18 Jan 11.			
20.	Are all the sensors input (Log, GPS, Gyro, AIS) to the system correctly displayed?			
21.	Is the radar range calibration of the display undertaken?			
<b>Gyros and other Nav Aids(Echo Sounder, EM Log, Magnetic Compass, WSDI)</b>				
22.	Is the system operational?			
23.	Is the system interfaced with LOG and GPS?			
24.	Are all meters are operational and calibrated?			
25.	Are the switching ON/ OFF procedure and SOPs available in the compartment?			
26.	Is the ACOS taking over supply without tripping of gyro?			
27.	Are all repeaters aligned with master compass/Compass retransmission error check undertaken?			
28.	Has the gyro been checked for emergency settling?			
29.	Has the auto change over operation from Gyro 1 to Gyro 2 at the DDU been checked?			
30.	Is the operation of Auto Change Over Switch from Normal to Alternate supply satisfactory?			
31.	Are all alarm checks/signaling operational in the gyro compartment and bridge?			
32.	Is the system backup supply arrangement satisfactory?			
33.	Are the last HAT/SAT/ Ops Checks reports available?			
34.	Is the compartment well ventilated?			
35.	Is the Auto Change Over switch for the steering motors operational?			
36.	Is the system operational in Auto Pilot Mode? If applicable.			
37.	Is the system operational from all designated posts?			
38.	Is the system available in both channels of operation?			
39.	Are the last HAT/SAT/ Ops Checks reports available?			
40.	Does the steering gear control system have a backup supply provision?			

Ser	Checks	Yes/ No/NA	Observation	Remarks
41.	Are effective means of communication available between ASP and following locations?			
	Bridge			
	Bridge Wing			
	Bridge Top			
	Quarter Deck			
	MCR			
<b>EM Log</b>				
42.	Is the AC/ventilation of compartment satisfactory?			
43.	Are the switching ON/ OFF procedure and SOPs available in the compartment?			
44.	Is the RTU operational?			
45.	Are all log repeaters operational?			
46.	Are all repeaters aligned with RTU?			
47.	Are the last HAT/SAT/ Ops Checks reports available?			
48.	Is the test mode of operation available?			
49.	Is the insulation of pick up head satisfactory?			
50.	Is the system provided with backup supplies?			
<b>Echo Sounder</b>				
51.	Is the ES Shallow depth warning alarm operational?			
52.	Are the ES Audio and visual alarm for minimum depth available?			
53.	Are the ES Lithium batteries in the memory module (If applicable) operational?			
54.	Is the insulation of 33 Khz Transducer satisfactory?			
55.	Is the insulation of 210 Khz Transducer satisfactory?			
56.	Is the system provided with backup supplies?			
57.	Are the measurement of depth and it's correctness as per charts?			
58.	Is the Recorder unit operational?			
<b>Wind Speed and Direction</b>				
59.	Has the system been calibrated?			
60.	Are all WSDI interfaces as per the technical manual available?			
61.	Are all WSDI repeaters operational?			
<b>Basic checks of SR/MR Guns</b>				
62.	Is the system operational?			
63.	Are the switching ON/ OFF procedure available?			

Ser	Checks	Yes/ No/NA	Observation	Remarks
64.	Are the ACOS (if installed) operational?			
65.	Are all the devices grounded?			
66.	Are all indication lamps are operational?			
67.	Are all pressure gauges and meters calibrated?			
68.	Is there any leakage in components of the hydraulic system?			
69.	Is loading/ feeding mechanism operational?			
70.	Is the operation of Gun in elevation and training in manual mode satisfactory			
71.	Is the Cooling system and pneumatic system operational?			
72.	When were the last Gun Alignment checks undertaken?			
73.	When was the last Static and Dynamic checks undertaken?			
74.	Are the last HATs/SATs report available with the ship?			
75.	When was the last series inspection carried out?			
76.	Is the ship in possession of bore sight camera and binoculars as per authorised holdings?			
77.	Have all routines as per MAINTOPS been undertaken?			
78.	Are the operational state of mechanical interlocks and protection devices of system/ equipment, as applicable, satisfactory?			
79.	Are the insulation of motors, converters and power circuits within the limits (more than 1 Mohm)?			
80.	Are all the gun inter-locks working satisfactory?			
81.	Is the test report of hydraulic oil held with the ship?			
82.	Is the ship in possession of approve Polar diagram?			
83.	Are the Pre and Post firing checks being undertaken?			
84.	Have all routines as per MAINTOPS been undertaken?			
<b>Basic checks of EON 51,SOP &amp; OSS/ other Optical Tracking System</b>				
85.	Is the system operational?			
86.	Are the switching ON/ OFF procedure available?			
87.	Are the ACOS (if installed) operational?			
88.	Are all the devices grounded?			
89.	Are all indication lamps are operational?			
90.	Are all system parameters within specified limits as per Technical Manual?			
91.	Is the LRF is operational and are LRF ranges available?			
92.	Is the thermal camera operational?			

Ser	Checks	Yes/ No/NA	Observation	Remarks
93.	Is the unit clear of all obstructions across the complete range of firing arc?			
94.	Is the gyro feed available for stabilization?			
95.	When was the last alignment checks undertaken?			
<b>Basic checks of Chaff Launcher</b>				
96.	Is the system operational?			
97.	Are the switching ON/ OFF procedure available?			
98.	Are the ACOS (if installed) operational?			
99.	Are all the devices grounded?			
100.	Are all indication lamps are operational?			
101.	Are all system parameters within specified limits as per technical manual?			
102.	Are the launchers clear of all obstructions?			
103.	Are the state of mechanical interlocks and protection devices of system operational?			
<b>Basic checks of Missile FCS.</b>				
104.	Is the system operational?			
105.	Are the switching ON/ OFF procedure available?			
106.	Are the ACOS (if installed) operational?			
107.	Are all the devices grounded?			
108.	Are all indication lamps are operational?			
109.	Are indications including switches operational?			
<b>Missile Launchers</b>				
110.	Is the system operational?			
111.	Are the switching ON/ OFF procedure available?			
112.	Are the ACOS (if installed) operational?			
113.	Are all the devices grounded?			
114.	Are all indication lamps are operational?			
115.	Are all system parameters within specified limits as per Technical Manual?			
116.	Are the launchers clear of all obstructions?			
<b>Test Equipment</b>				
117.	Are all test equipment calibrated iaw NO 15/13?			
118.	Is the ship in possession of all INCRETE iaw latest IHQ MoD (N) policy letter			
119.	Are all test equipment in operational state?			

Ser	Checks	Yes/ No/NA	Observation	Remarks
<b>Weapon SPTA Management</b>				
120.	Is the store muster being undertaken every 18 months or on transfer of LO? (Obtain the certificate)			
121.	Is a record of total no of OBS/presently held on board/ Demand outstanding/ yet to surveyed / demanded held with the respective department?			
122.	Is the list of OBS being maintained by the ship as per D787?			
123.	Does the ship maintain critical spares and its status?			
124.	Has the ship undertaken D787 amendment for newly fitted equipment/ change in scaling of OBS?			
125.	Has the check list been placed inside each of the boxes?			
126.	Has random check of SPTA for each section been carried out during sailing/reaction ex.			
127.	Are the SPTA boxes labelled for easy identification?			
128.	Are the stores properly secured for sea?			
129.	Are spares being stored in cardboard/ boxes of inflammable materials?			
<b>Documentation of Weapon &amp; Sensors</b>				
130.	Has the documentation muster been undertaken as per D787 lists?			
131.	Are MAINTOPS available for all equipment installed on board as per D787/ SFD?			
132.	Are all books/ formats being maintained as per FOST guidelines?			
133.	Are all sections of EMAPs being filled as per existing instructions?			
134.	Is the key register being maintained by the department?			
135.	Are there any deficiency in documentation and has any action been initiated for the same?			
136.	Are the log books being signed by the concerned personnel regularly?			
137.	Is the department in possession of relevant Safety Check list for various evolutions as per FOST guidelines?			

Ser	Checks	Yes/ No/NA	Observation	Remarks
138.	Has the LO's Ty Memo been issued for authorising personnel to undertake switchboard watch keeping?			
139.	Is the Departmental Standing orders as per guideline and in consonance with the Ships Standing Order?			
140.	Have all departmental personnel read and signed the Departmental Standing Orders?			
141.	Are the Sea and Action check list available with the department and in respective locations?			

### EMI/ EMC CHECKS

Ser.	Checks to be undertaken	Observation	Remarks
1.	Is there uniform all round metal to metal contact between door and doorframe of CAT A compartments iaw NO Str 04/04?		
2.	Are doors on upper deck bonded at two locations ie. near both hinges?		
3.	Are all removable fittings on the upper deck are bonded?		
4.	Are fluorescent / CFL lighting being used in CAT 'A' compartments?		
5.	Are doors not made of metal covered with screening material in CAT 'A' compartment?		
6.	Are honeycomb filters provided on ventilation trunkings opening in a Cat 'A' compartment		
7.	Are all shipboard equipment operating from an external electrical power source of 30 volts or more, including COTS equipment, provided with bonding?		
8.	Is the resistance of all bonding straps used less than $C > 0.1 \text{ Ohm}$ ?		
9.	Are RADHAZ zones marked for all antennas?		
10.	Are the Part A/ Part B EMI/EMC survey report (as applicable) available?		