PART II RULES FOR THE CONSTRUCTION AND CLASSIFICATION OF VESSELS IDENTIFIED BY THEIR MISSIONS

TITLE 101 LAY-UP

CHAPTER

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CHAPTER A
APPROACH

A1. APPLICATION

100. Scope and Application

101. These title apply to existing vessels certified by RBNA for inland or sea navigation, where the Owners have an interest in laying-up the vessel for a period of time without cancelling Class.

102. Upon Owners' request, a ship out-of-commission may be subject to specific requirements for maintenance of class during the period of inactivity.

103. In case the Class Society is not notified of the laying-up of the ship or in case the lay-up maintenance program is not implemented and/or the surveys of the program are not carried out inside the ship's class will be automatically suspended and/or withdrawn in accordance with the requirements set down in this guideline.

103. The present guidelines provides criteria, precautions and procedures recommended for:

a. Declaring the vessel as "laid-up";

b. A subsequent laying-up survey at the commencement of the period;

c. Maintenance of the class during the period in which the boat is laid-up by means of annual lay-up condition surveys carried out in substitution to the annual class surveys which are no longer required throughout the laying-up period; and

d. Class reactivation of the ship in order to return to active service.

A2. DEFINITIONS

100. Definitions

101. **Class condition "Laid-up ship":** a special notation of class where special reduced criteria are applied to the surveys for the purpose of preserving and protectiong the vessel during the laid-up perior.

102. **De-comissioning –** admittance of the vessel into the special class notation "laid-up**".**
entrada da embarcação na condição especial de classe

103. **Laid-up vessel** – temporarily out-of-service vessel remaining in class upon Owners' request for a period of time in which the vessel lies out-of-service, subject to the lay-up maintenance program as defined in these Guidelines;.

104. **Lay-up site** – the location where the vessel will remain during the lay-up period , normally dock or an anchorage area.

105. **De-activation survey –** proceedings and surveys required for a vessel based on the present Guidelines to be admitted to the laid-up class notation.

106. **Periodical inspections for maintaining the vessel in class during the laid-up period –** annual inspections to be carried out every 12 months based on the criteria and requirement of these Guidelines to verify whether the vessel is maintaining the conditions of maintenance and preservation required for class during the laid-up period.

107. **Survey for class re-activation -** inspections to be carried out to ascertain whether the vessel is apt to return to class within the assigned full Class Notation in the period immediately prior to its withdrawal from service. The scope of this survey will be considered in a special way by the RBNA taking into account:

a. The status of surveys prior to entering the condition out of service;

b. The length of time during which the vessel was out of service;

c. The status of periodical surveys for maintenance of class during the period in which the boat was out of service.

200. Lay-up declaration

201. A Lay-up Declaration shall be issued by the ship's classification society covering as a minimum the following:

a. the ship is safely moored with periodical mooring watch, and emergency operation of mooring winches available at short notice

b. navigation lights, fire and bilge alarms are in operation

c. fire extinguishing and bilge systems are operable on short notice by competent personnel

d. safety arrangements for personnel on board, if any, are in place.

A3. TYPES OF LAY-UP

100. Hot, cold and long term lay-up

101. The choice of lay-up conditions will be typically determined by a trade-off for the following factors:

a. The intended duration of the lay-up period

b. The time need to re-activate the vessel

c. The costs considered

d. The relocation of the vessel to its next destination

e. The age of the vessel and the scrap value of the same

102. The vessel is moored in a safe location and is held within Flag State and Classification Society requirements.

200. Hot ship short term lay-up

201. This lay-up condition is suitable for up ro a month out of service. The vessel is held within Class and Flag State requirements, although crew may be reduced to certified minimum safety crewing limits, except if, by request to the Maritime Authority, a crew level below the safety manning is granted.

202. The machinery will be kept operational, but economies are made.

203. In this type of lay-up, the estimated time for reactivation is 24 hours.

300. Hot ship longer term lay-up

301. This lay-up condition is typically defined for a maximum period of 12 months out of service. The vessel's crew may be reduced below the Safety Manning level in agreement with the Flag State, the Classification Society and the Insurance Company. Engineering and navigation officers are required among the reduced crew.

302. Some ports may issue a temporary permit to lay-up a vessel provided that Class and Flag surveys are carried out. There may be local restrictions on vessels' operations such as transfer of oily bilge water.

303. ISM and ISPS certificates may still be valid for a maximum of 6 months after the decommissioning, but additional verifications shall be carried out during re-activation.

304. The expected time for reactivation is one week.

400. Cold ship lay-up not exceeding 5 years

401. This is a lay-up condition suitable for up to five years out of service and requires the vessel to be moored in a secure location. All systems are shut down with minimum ongoing maintenance to prevent deterioration of the hull structure and machinery.

402. A common or specialized lay-up crew may be employed to deal with emergency requirements such as fire, flooding, mooring and security watch, depending upon Maritime Authorities permit.

403. Upon reactivation the vessel may need to go directly to dry-dock before full class notation is restored. This is the case if the renewal survey is overdue, the hull has excessive incrustation or the statutory certificates have lost validity, among other reasons.

404. All preparations and processes during the cold lay-up must be well documented and presented to the Class Society upon occasion of the annually lay-up maintenance surveys.

405. **Note:** the statutory certification is under Maritime Authority regulations, and therefore, in case the statutory certificates expire during the lay-up period or the ship has been laid-up for more than 180 days, it is possible that a statutory dry-docking and renewal surveys will be required.

406. The expected time for reactivation is 30 days (one month) minimum.

500. Cold ship long term lay-up

501. This is a lay-up condition suitable for more than five years out of service. In this condition, the extent of preparations will be comprehensive. It is recommended that original equipment manufacturers are consulted for critical equipment.

502. Repairs for re-activation are unpredictable, like the need to renewal of alarm system, electrical windings, sophisticated computerized equipment, as there is an uncertainty that such systems will start out after the long lay-up.

503. Reactivation procedures must be correctly carried out to avoid serious long term damage to the machinery.

504. A specialist crew may be employed, possibly only a watchman. Specialized offices may be called in monthly to proceed to the required maintenance of the vessel.

505. The expected time for reactivation is over ninety days (three months).

A4. LAY-UP CYCLES

100. Guidance for lay-up cycles

101. When the ship's class cycle expires during the lay-up period, class may be extended provided the ship has

a. an approved lay-up maintenance program;

b. is subject to annual lay-up condition surveys; and

c. an extension of class survey is carried out according to RBNA's regulations.

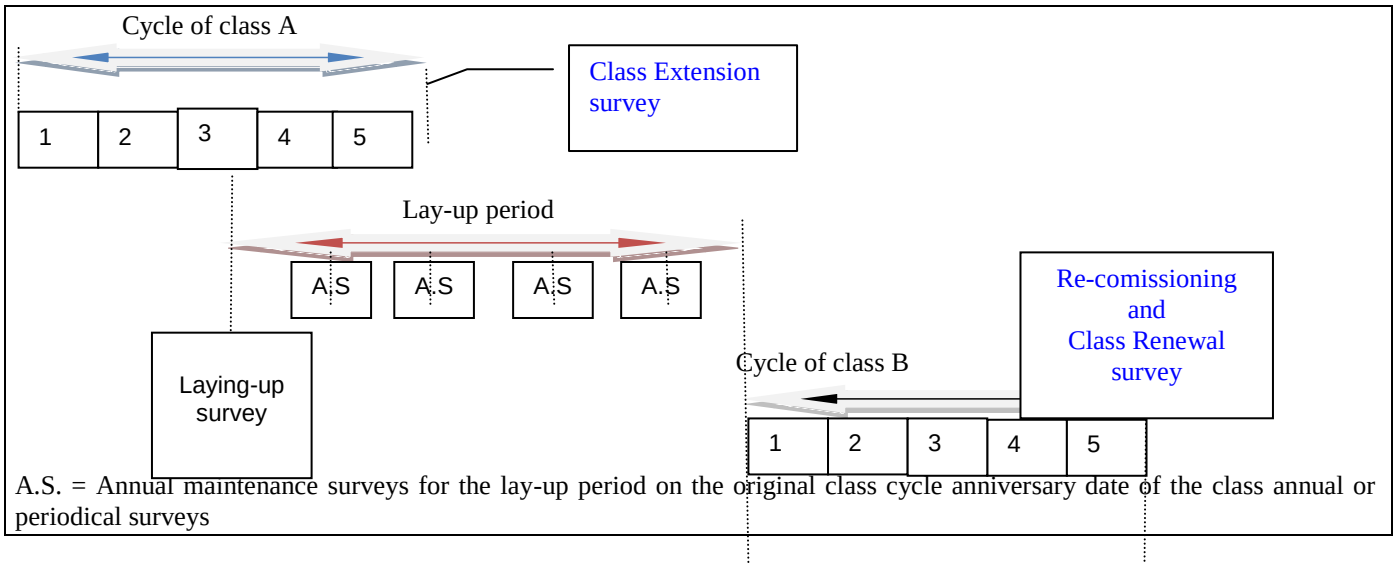
102. The periodical surveys carried out during the lay-up period may be credited, having particular regard to their extent and dates, either wholly or in part, at the discretion of the Society.

103. When a ship is re-commissioned, the Owner is to notify the Society and make provisions for the ship to be submitted to the following surveys:

a. an occasional survey prior to re-commissioning, the scope of which will depend on the extent of the lay-up period;

b. all periodical surveys which have been postponed during the lay-up period taking into account the credits granted on item A4.102 above.

FIGURE F.A4.104.1 – LAY-UP PERIOD GOING BEYOND THE EXPIRY DATE OF THE CLASS PERIOD



A.S. = Annual maintenance surveys for the lay-up period on the original class cycle anniversary date of the class annual or periodical surveys

104. When the previous period of class expired before the re-commissioning and was extended, a complete class renewal survey is to be carried out prior to re-commissioning. Those items which have been surveyed in compliance with the class renewal survey requirements during the 15 months preceding the re-commissioning (see item A4.101 above) may be credited. A new period of class is assigned from the completion of this class renewal survey.

105. When the reactivation occurs within the period of class, a reactivation survey is to be carried out which will include an underwater survey as required in Chapter T of this Guide.

106. **Note:** the statutory certification is under Maritime Authority regulations, and therefore, in case the statutory certificates expire during the lay-up period or the ship has been laid-up for more than 180 days, it is possible that a statutory dry-docking and renewal surveys will be required.

A5. CLASS STATUS DURING A LAY-UP

100. Class notation

101. Ships that are laid-up immediately after service and are reactivated before the due date of the renewal survey will receive the class notation **LU**.

102. Ships that remain laid-up after the expiry date of the renewal surveys will receive the class notation **LURO** (***L**aid-**U**p **R**enewal **O**verdue*).

103. The Owners will be given the option of having the ship's class withdrawn or continue to carry out the annual maintenance inspections before issuing.

CHAPTER B
DOCUMENTS, RULES, REGULATIONS AND STANDARDS

B1. DOCUMENTOS E REGISTROS

100. Documents and records relating to the condition "Laid-up"

101. The following documents and records are necessary for the admittance of a vessel to the class notation "Laid-up":

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a. Communication to the Maritime Authority

102. The following documents and records are necessary for the reactivation of a vessel that has the class notation of "Laid-up":

a. Declaration of Owner that the vessel will return to the operating condition of active service

b. Class Society survey and report of reactivation of the vessel

c. Endorsement of the Hull and Machinery Class Certificates

d. Registration on the Status of Class

e. Note in the RBNA Ship Register Book

f. Communication to the Maritime Authority

B2. RULES AND REGULATIONS

100. Rules and Regulations

101. During the period in which the boat is out of service the recommendations in this guide will apply for the maintenance of class.

102. For reactivation of class, the following Rules and Regulations are applicable in full:

a. NORMAM 01;

b. NORMAM 02;

c. IMO conventions, codes and resolutions as applicable;

d. COLREG

e. RBNA Rules for Inland Navigation ;

f. RBNA Rules for Open Sea Navigation

g. RBNA Guide for Laying-up Ships 2010 edition

200. References

201. References

a. "Guideline for Lay-Up of Ships", GAC Ship Solutions

b. "North of England Briefing: Vessel Lay Up", North of England P&I Association, 2009

c. "Guidelines for Lay-up Ships", UK P&I Club (Thomas Miller)

CHAPTER C
CLASS REQUIREMENTS FOR LAID-UP SHIPS

C1. SAFETY CONDITIONS

100. Recommendations for procedural safeguards to ship out of service provided

101. A crew sufficiently qualified to maintain security surveillance referred to fire, mooring anchoring and flooding hazards shall be kept on board.

102. The crew shall include persons qualified to operate the emergency communication equipment and to undertake emergency action while awaiting the arrival of help.

103. Flooding and fire alarms in the Engine Room, bilges and other spaces where needed are to be kept operational, fed by an independent source.

104. The fire-fighting equipment including emergency fire pump must be in operation prior to entering the condition out of service, and shall be kept in working order and for readily available for use throughout the lay-up period.

105. Lifesaving equipment shall be available for the crew on watch.

106. Independent and efficient means of communication shall be available to the crew on watch.

107. Adequate power supply is to be supplied, or readily available, all around the clock, either from independent means on board the ship or from shore.

108. When the emergency power source on board is a portable generator mounted on deck, the fuel and electrical installations shall be adequate and safe.

109. The emergency source of power, emergency generator and/or emergency air compressor are to be kept in working order and tested weekly.

110. All flammable waste products, chemicals, toxic, oily rags and rags, trash, painting, pyrotechnics, etc.. must be removed from the ship.

111. Provide adequate facilities for the periodic removal and garbage produced by the crew on watch.

112. Cargo spaces and piping systems are to be cleaned and ventilated where there is the possibility of forming any pockets.

C2. MEASURES TO PRESERVE THE MAINTENANCE OF THE SHIP

100. General

101 A lay-up Logbook, which may be the Deck Log Book, is to be kept on board, registering the maintenance work and tests carried out during the layup period with the corresponding dates.

102. Communication: Reliable means of 24 hours communication shall be available for immediate contact for local assistance or rescue facilities.

103. Anti-pollution measures: As far as possible a zero discharge policy shall be adhered to. If laid up near populated areas care shall be taken to keep noise and visual disturbance to a minimum.

104. Emergency contingency plan: An emergency contingency plan shall be available.

105. Security: Means to prevent unauthorized access to the ship shall be established. Doors and openings shall be kept locked, bearing in mind emergency escape possibilities for the persons onboard. Regular watch-keeping routines, reflecting the security situation at the lay-up site shall be established.

106. Apertures, inspection openings where covers have been removed for air circulation shall be covered with fine mesh wire gauze to prevent ingress of foreign matter.

107. The following methods are used to reduce corrosion during the lay-up period, as presented in the items C2.200 to C2.900 that follows:

a. Total and effective sealing of major accommodation and machinery spaces from external atmospheric conditions, particularly where high humidity levels exist;

b. Controlled dehumidification of internal air spaces (including void spaces within machinery and pipelines) to prevent sweating and humidity corrosion damage as well as moisture absorption into electrical cables and fittings;

c. Application of preservatives and suitable lubricants to external equipment and machinery not within the dehumidified spaces;

d. Hull cathodic protection to be maintained, and for long term lay-up ballast tanks to be suitably protected. This could mean that they are totally emptied, cleaned and dried out or fully ballasted to remove air pockets and corrosion inhibitor added;

e. Regular turning of rotating machinery to prevent corrosion damage to bearings, seizure and component distortion. Equipment would be identified and highlighted on the check lists for this purpose.

200. External hull

201. The coating of the hull above the waterline including exposed decks, access doors, hatch covers and hold accesses is to be maintained in a satisfactory condition.

202. he underwater parts of the hull are to be preferably protected by an impressed current cathode protection system. In case such system is not installed, sacrificial anodes are to be provided and checked at the annual lay-up condition surveys.

203. All accesses leading to internal spaces are to be kept closed. All vent pipes and ventilation ducts are to be kept closed as well.

300. Internal spaces

301. Conduct periodic soundings of all compartments and record the results in the Logbook as well as the drafts of the vessel during the sounding.

302. Ballast tanks are to be kept either full or empty throughout the lay-up period. In case the ballast tanks are completely filled up, they are to be topped on a weekly basis and protected by means of corrosion inhibitors or sacrificial anodes. Empty tanks shall be dried out to minimize corrosion. All sludge and mud are to be removed prior to lay-up.

303. Cargo tanks and cargo holds are to be emptied and kept clean and dry or alternatively kept full and carry out periodic topping.

304. Sea inlet and outlet valves not in use are to be kept closed. However, the spindles are to be well greased. All sea valves are to be fitted with internal blank flanges, except where they are in use. External sea suctions are to be closed off by divers using fiberglass blanks fitted with neoprene seals. Blanks are to have a pocket to allow a biocide brick to be inserted, to prevent marine growth in the grids.

305. Lubricating oil tanks which are kept full are to be sampled regularly and the oil analyzed. In case the results are not satisfactory, the tanks are to be emptied and if refilled shall be cleaned up before.

306. Bunker tanks are to be kept full or shall be cleaned and gas freed. A biocide may be added to the fuel to prevent microbiological degradation.

307. Engine room bilges and tank top to be cleaned and kept dry. Bilge high level alarm system must be kept operational. In case such a system is not installed, a temporary alarm system is to be fitted.

308. Dehumidification units of adequate capacity are to be installed with associated distribution ducts to provide sufficient air circulation major individual items of machinery, equipment and systems.

309. Chain lockers are to be drained, cleaned and kept dry. Coating with bituminous paint is recommended.

400. Deck machinery and fittings

401. The deck machinery must be tested in all operating conditions and properly lubricated and protected before laying-up.

402. Weather deck accessories such as rollers, closing cleats and hinges of hatch covers and access doors, swivel pin, opening/closing valves of hatch covers must be properly coated with grease or preservation.

403. All cables for lifting gear, equipment, lifeboats, mooring lines and towing shall be removed as necessary, greased and stowed in dry places. At least one lifting gear must be kept operational during the lay-up period.

404**.** Anchoring and mooring equipment: greased and turned once a month. Where the laying-up conditions make it necessary, windlass and mooring winches must be kept ready for use.

405**.** Steering gear and bow thruster: greased and turned once a week.

406. Deck outfitting: greased

407. Hatch covers: moving parts greased, panels shall be checked for corrosion and pitting formation, cleats inspect periodically, gaskets checked. On surveyor's discretion, a water hose test to be carried out.

408**.** Ventilation and fire dampers: to be kept closed. Periodical opening and closing is required.

409. Lifesaving equipment and distress signals appropriate for the lay-up site and the total complement on board shall be kept available.

500. Controlled humidity space sealing and dehumidification

501. The Owners shall provide all the necessary trunking to establish and maintain a controlled dehumidified atmosphere within designated areas such as:

a. Machinery spaces; 30-50% relative humidity

b. Accommodation spaces: 45-55% relative humidity

502. The following are to be secured and sealed: all openings including doors, windows, port holes, vent extraction apertures, sanitary outlets, scuppers, drains and air intake grids.

503. Dehumidification units to be installed with associated distribution ducts in selected spaces such as:

a. Major individual items of machinery

b. Equipment and system within those spaces

c. Cabins and public spaces

504. The circulation of dry air will be arranged such that desired levels of relative humidity will be achieved throughout. All water and steam systems and tanks within the controlled spaces except those required for the lay-up operation, will be drained free of water (including bilge areas), dried and left open to dehumidified atmosphere. Non-return valves will be removed where necessary to improve air circulation within the systems.

600. Acommodation

601. Adequate means are to be provided for removing periodically and frequently the waste produced by the crew on watch.

602. All provision store to be emptied, cleaned, and secured in an open position.

603. All access alleyways to be covered with H/D polythene. If carpets are fitted, these are to be cleaned and covered with a breathable fabric for protection.

604. All automation items and computers turned off, isolated and kept in a dry atmosphere.

605. All remote control panels and instruments on bridge to be turned off, isolated and kept in a dry atmosphere.

606. All navigation and communication systems to be turned off, isolated and kept in a dry atmosphere, with the exception of the VHF.

607. All sanitary fittings openings are to be sealed and water supply systems isolated.

700. Machinery

701. The machinery space and bilges are to be clean and dry at all times.

702. All rotating machinery such as diesel engines, generator, pumps, electric motors are to be turned at regular intervals, and not to be stopped in the same position as before.

703. Diesel engines: manufacturer's instructions for stopping the engine operation for a longer or shorter time are to be followed. However, the preparations are not to be less than the following:

a. Engines that have run o fuel oil should operate on diesel duel for a sufficient time before shut down to ensure that the fuel lines and the injection system are free from heavy fuel oil.

b. Engine shut-down for 3 months: approximately every two weeks, the engine is to be lubricated and turned through at least two revolutions, taking care to ensure that on each occasion the crankshaft comes to res in a different position. Where the engines are fitted with cylinder lubricators, it is recommended that these should also be turned by hand during the rotation of the engine. After turning, the indicator cocks are to be closed back.

c. Engine shut-down for longer periods: atomizer is to be employed to spray anti-corrosion oil through the openings in the combustion chamber (injection valve or inspections ports). The compatibility of the anti-corrosion oil is to be confirmed by the engine manufacturer.

d. Engine casing for smaller engine casings: the crankcase vents and all apertures provided on the engine are to be sealed to prevent any air. An oil analysis is required. The limit values specified by the engine manufacturers must not be exceeded.

e. Larger engine casings shall be ventilated and a relative humidity of 35% is to be maintained.

f. Gears, camshaft and all control elements to be protected with anti-corrosion oil. Crankcases to be provided with desiccant

g. Fuel oil lines to be isolated and injectors cleaned, oiled and stowed

h. Cooling systems to be drained of water and left open to dehumidified atmosphere. Where neoprene

sealing rings are fitted, system shall be left charged to prevent dry-out and corrosion inhibitors added

i. Sea water systems to be drained and opened to dehumidified atmosphere.

j. Scavenger pipes are to be cleaned

k. Oil for the governors is to be replaced.

704. Turbochargers: the turbocharger intake filters must be cleaned and protected according to the manufacturers' requirements. Internal parts of the turbochargers are to be protected against corrosion. The rotor shall be locked and all openings closed. Charging air coolers are to be drained.

705. Fresh water system and pumps

a. Lines to be drained and dried out.

b. Suction strainers to be drained and left open.

705. Sea water systems: where the systems are not in operation:

a. All sea water to be drained from pumps and associated systems left open to the dehumidified atmosphere.

b. All strainers are to be drained, mopped dry and left open together with selected valves, thus permitting the circulation of dry air.

706. Air compressors and starting air systems

a. Lube oil to be drained, system recharged with clean oil and system operated before shut-down.

b. Covers and valves on all stages to be removed and cylinders lubricated.

c. Air filters and inspection covers to be removed and drains left open to allow air circulations.

d. Air receivers to be opened, cleaned, mopped dry and oiled.

707. Reduction gears

a. Large reduction gears are to be fitted with a fan to circulate hot air in closed circuit with air hoses.

b. Safety valves removed, cleaned and slightly greased.

708. Fuel oil purifiers

a. Internals to be removed, cleaned, coated with grease and stowed

b. Bowl and crankcase to be left open

c. Crankcase to be cleaned and charged with new oil.

709. Heat exchangers and condensers

a. To be drained and kept dry

b. Desiccant is to be places in steam spaces.

c. The condition of zinc anodes, if any, is to be regularly checked.

710. Shaft lines

a. Shaft lines to be coated with grease

b. For water lubricated stern tubes, the gland packing is to be tightened to prevent water leakage.

c. Oil-lubricated stern tubes lubricating oil Is to be analyzed and renewed if not satisfactory.

d. Propeller shaft lines are to be rotated an integer number of revolutions plus one quarter so that the shaft will not rest in the same position as before. It may be necessary to lock the shaft line when towing the vessel.

e. The stern seal to be checked externally by divers to ensure there are no ropes or lines penetrating the seal assembly that could result in leakage.

711. Boilers

a. Smoke sides to be swept, washed clean and dried in hot air.

b. Water and steam sides preserved using the dry method, keeping moisture at the lowest possible level.

c. Drum doors are to be kept closed.

d. Air heaters are to be cleaned and kept dry.

e. All outlets are to be cleaned and kept closed with watertight hoods.

f. Burners are to be dismantled, and atomizers greased.

g. The internal condition of boilers is to be checked every three months.

h. Boilers may be preserved alternatively by inert gas (nitrogen) provided the installation allows an over-pressure of 0,05 bar minimum.

i. Boilers run on fuel oil are to change over to diesel oil prior to shut down, and no residues of heavy oil are to remain in the lines.

712. All exhaust lines are to be blanked.

713. Refrigerating equipment: before the refrigeration plant is shut down, care must be taken to ensure that there are no leaks in the coolant circuit. Coolant should be drawn off into the condenser or collector. Condensers are to be opened on the water side and dried. Refrigerating spaces are to be ventilated.

714. The bilge pump shall be kept ready for use.

800. Electrical installations

801 All switchboards and panels are to be provided with desiccant.

802. Contacts of relays, breakers and switch breakers are to be coated with neutral Vaseline.

803. Bearing of generators are to be cleaned of old grease and coated with new oil or grease.

804. Carbon brushes are to be lifted off their commutations.

805. Electrical insulation of each item is to be kept at a minimum of 200.000 Ohms and general insulation is not to be less than the Rule value given in Part II, Title 11, Section 7.

806. Insulation resistance is to be confirmed regularly.

807. Power for operation

a. Power for operation of navigation lights, fire and bilge alarms, and fire extinguishing and bilge systems is to be available. This may be arranged by the use of a portable diesel generator set mounted on deck.

b. Adequate power for operation of windlasses and mooring winches shall be available. If steam-driven, the anchor windlass and any necessary mooring winches shall be fitted with emergency air connections, and sufficient air capacity shall be available for their operation. If electric, an emergency source of power shall be available for their operation.

900 Fire protection and fighting

901. The fire-fighting system is to be kept fully operational, with special attention to:

a. Fixed fire-fighting installations to be kept ready for operation and checked regularly;

b. Emergency fire pumps must be operational and ready for use, and checked and run regularly.

c. There must be a power supply for the main fire pumps. The main fire pumps are to be checked and run regularly.

902. The fire main is to be readily available and periodically tested under pressure.

903. The fire-fighting installations are to be readily available and tested regularly.

904. Alarm systems are to be in working order and operational. Where no fire alarm system is installed on board and provision is not made for a permanent watch, a temporary fire alarm system is to be fitted in the engine room and other relevant spaces.

905. Fire doors and watertight doors are to be closed.

906. Fire dampers are to be kept closed and checked for operation regularly.

907. Hot work on board a laid-up ship is to be carried out only with a valid hot work certificate and appropriate local measures.

908. Navigation lights and fog signaling System: Anchor lights, and if necessary, additional position markings, e.g. lights marking the bow and stern, shall be well maintained. Fog signaling system shall be kept readily available.

CHAPTER D
RECOMMENDATIONS FOR LAY-UP SITE

D1. RECOMMENDATIONS FOR THE LAY-UP SITE

100. General

101. The responsibility for the choice and suitability of the mooring site lies with the Owner. However, upon Owner's request, the mooring arrangements may be reviewed by RBNA.

200. Recommendations for the lay-up site

201. The following recommendations shall be considered by Owners or, upon requet, by RBNA with respect to the mooring arrangements.

202. The items to be surveyede shall include but not be limited to assessment of the following:

a. Degree of shelter provided from open seas, winds, waves, swells, etc.

b. Method of mooring vessels

c. Availability of spare or replacement mooring equipment

d. Detailed climatological information of the site

e. Local currents and tides

f. Depth to remain afloat under all conditions and type of holding ground

g. Proximity of submerged obstacles, underwater pipes, wrecks, etc.

h. Local availability of tugs, fire-fighting, medical and safety services

i. Security of the location

j. Availability of supply services such as fresh water, waste disposal, etc

k. Assessment of likely hull fouling

l. Location of any effluent or corrosive discharges

m. Proximity to passing traffic and other moored vessels

n. Space available for designated lay-up positions

o. Facilities for shore monitoring of vessel position

D2. MOORING ARRANGMENTS

100. Mooring arrangements

101. The bottom of the sea, river or lake at the place of lay-up to check shall offer safe conditions for -anchorage.

102. The site shall have enough depth for the vessel to stay afloat throughout the year. For lay-up sites located in rivers or reservoirs that do not show enough depth during droughts, check as much as possible the nature of the bottom.

103. The length of the mooring lines shall be sufficient. The length of the chain shall be at least seven times the water depth.

104. There shall be ways of releasing the anchors or moorings in case of emergency.

105. The wear of the mooring point of contact with the ship shall be assessed.

106. When anchored by a single chain, the ship must have space around to turn around safely at the changes of wind and tide.

107. When anchored by two chains, one the rotational movement of the vessel shall be avoided so that the chains are not entangled in one another. This is normally carried out by anchoring the ship by the stern.

108. Marks of anchorage or fog shall be readily available, especially if the lay-up site is near navigation routes.

109. There must be means to release the anchors or moorings in case of emergency.

110. Fenders shall be provided appropriate to avoid possible contact with other ships or fixed structures.

111. Where several boats are morred to each other, cables with similar elasticity shall be employed.

112. An emergency towing cable shall be available on board and arranged for prompt use.

CHAPTER T
SURVEYS AND TESTS

T1. GENERAL

100. Lay-up maintenance program

101. In accordance with sub-chapter A1 of this Guideline, the Owner is to submit to RBNA a survey program for approval.

102. The lay-up maintenance program is to include:

a. the safety conditions to be kept throughout the lay-up period

b. the measures taken to preserve the maintenance of the ship throughout the lay-up period

c. the survey requirements to be complied with for lay-up, maintenance of class throughout the lay-up period

d. the survey requirements for reactivation

103. The initial lay-up surveys and annual maintenance surveys shall verify whether the class requirements of Chapter C of the present guidelines are being complied with, in accordance with the approved survey program.

104. The extension of the surveys, however, will be in accordance with the type of lay-up.

T2. LAY-UP INITIAL SURVEY

100. Lay-up initial survey criteria

101. An initial lay-up survey is to be conducted at the beginning of the lay-up period.

102. The initial lay-up survey is to verify whether the requirements of Chapter C of this Guide for preservation and maintenance have been complied with.

103. The initial survey is to verify whether the requirements of Chapter D of this Guide for the lay-up site mooring arrangements have been complied with.

104. Upon satisfactory results the relevant survey report is to be issued and an endorsement made in the Hull and Machinery Class Certificates to confirm that the ship has been placed in lay-up. A corresponding entry is to be made in the Status of Class of the vessel.

105. A lay-up declaration shall be issued, except for hot ship lay-up for less than one month.

106. A Class Notation “LU” is to be added to both the Hull and Machinery class certificates or a new certificate issued adding the notation “LU”. In case of a new certificate, the survey dates are to be maintained.

T3. LAY-UP ANNUAL MAINTENANCE SURVEYS

100. Annual layup survey criteria

101 The annual lay-up maintenance survey is to be carried out in lieu of the annual class surveys.

102. While the initial survey checks whether the requirements of Chapters C and D have been attended to, the purpose of this survey is to check whether the maintenance program implemented is continuously complied with.

103. The survey is to check that the conditions and arrangements found in the initial survey are unchanged and that the programmed maintenance work, and tests are being carried out and registered in the Log Book as required by sub-chapter C2, item 100 of this Guide.

104. Upon satisfactory results, the relevant survey report is to be issued, and endorsement made in the Hull and Machinery Class Certificate and an entry registered in the Status of Class.

105. The endorsement mentioned in item T3.104 above must state clearly that an annual lay-up maintenance survey has been carried out.

106. Additionally, a preservation declaration shall be issued to the Owners. This declaration could be useful for the Owners (may have positive effects upon P&I and Insurance).

T4. CLASS EXTENSION SURVEY

100. Class extension survey criteria

101. Whenever the date of validity of the certificate expires during the lay-up period, the Owner of the vessel shall be consulted to determine whether the class will be withdrawn or whether an extension of class is to be granted.

102. In case the Owner decides to extend the class and proceed with the laying-up of the vessel, a Class Extension Survey will be carried out in accordance with the applicable RBNA rules and procedures.

103. The class extension will only be granted if the following requirements have been complied with:

a. The annual lay-up surveys have been carried out;

b. The Class Extension Survey has been carried out with satisfactory results; and

c. An annual lay-up survey is carried out in parallel with the Class Extension Survey with satisfactory results.

104. **Note**: where the checklist for the class extension survey mentions the validity of the class certificates, the surveyor shall verify whether the lay-up endorsements are updated.

105. UTM (ultra-sonic thickness measurements) may be required if deemed necessary by the RBNA surveyor.

106. Upon satisfactory results, the Hull and Machinery Class Certificates are endorsed as follows:

a. An endorsement for the class extension.

b. A separate endorsement for the annual lay-up survey stating clearly that it does not substitute the renewal survey. It shall also state clearly the results of the survey.

107. A class notation “LURV” is to be added to both Hull and Machinery class certificates, or a new certificates to be issued adding the notation “LURV”. In case of a new certificate, the survey dates are to be maintained.

108. Additionally, a preservation declaration shall be issued to the Owners. This declaration could be useful for the Owners (may have positive effects upon P&I and Insurance).

T5. REACTIVATION SURVEY

100. Reactivation survey criteria for hot ship short term lay-up

101. The reactivation survey for hot ship short term lay-up shall consist of carrying out any surveys which have become overdue during the lay-up period and any outstanding items which may have been raised during that period.

102. It is to be checked whether any arrangements made for the lay-up period have been removed.

103. If there is no evidence that the ship has been preserved according to the lay-up maintenance program, the reactivation survey is to have the scope of an annual class survey.

104. Upon satisfactory results, the relevant report is to be issued and the Hull and Machinery Class Certificates shall be endorsed to the effect that the lay-up period is ended and the ship is back into full class.

105. The “LU” notation in the class certificates is to be cancelled or a new certificate issued maintaining the original survey dates.

200. Reactivation survey criteria for hot ship longer term lay-up

201. The survey criteria are the same as in T5.100 above.

300. Reactivation survey criteria for cold ship lay-up for more than 12 months

301. The following surveys are to be carried out:

a. All surveys overdue at the time of the reactivation, therein including n overdue renewal survey and dry-docking.

b. If the vessel has been laid-up for more than 12 months the submerged hull shall be checked by a diver. The sea chests shall either be confirmed free from excessive marine fouling, or such fouling shall be removed.

c. Sea trials.

d. Any class recommendations due at the date of reactivation or which have become due at the time of reactivation are to be dealt with.

e. In case the renewal survey is not overdue, the survey shall follow the additional requirements as in item T5.302 and T5.303 below.

f. Vessels under the ESP program are to follow the survey requirements for that program.

302. In addition to the requirements of item T5.302, and where there is no renewal survey to be carried out, the following items are to be checked:

a. In case there are no overdue surveys, a survey having the scope of an annual hull and machinery is to be carried out.

b. The temporary arrangements for lay-up have been removed. Necessary consideration shall be given to protective oils or inhibitors applied; that they are either removed or that it is confirmed that they will not have harmful effects if remaining in the systems.

c. Overall survey of representative ballast tanks when the lay-up period does not exceed 2 years

d. Overall survey of all ballast tanks when the lay-up period exceeds two years

e. Analysis of the lubricating oil of main engines, auxiliary engines, reduction gears and stern tube. Representative samples of all fuel oils kept on board during lay up (residual and distillates) shall be taken and thoroughly analyzed prior to use in diesel engines.

f. Crankshaft deflection to be taken

g. One piston is to be disconnected and one liner removed for inspection

h. Condition of pressure relief valves after overhauling

i. For installations on liquefied gas carriers, the primary barrier is to be inspected and a global gas test of membrane tanks, if fitted, carried out and compared with those obtained upon delivery of the ship

303. For vessels reactivated within the period of validity of class certificates:

a. Upon satisfactory results, the relevant report is to be issued and the Hull and Machinery Class Certificates shall be endorsed to the effect that the lay-up period is ended and the ship is back into full class.

b. The “LU” or “LURO” notation in the class certificates is to be cancelled or a new certificate issued maintaining the original survey dates.

304. For vessels for which the renewal date has been exceeded, class certificates for a new cycle are to be issued based on the date of the dry-docking of the reactivation / renewal survey.

400. Sea Trials criteria

401. In addition to the RBNA Rule requirements for sea trials, the following minimum checks are to be carried out:

a. Verification of the satisfactory performance of the deck installations, main propulsion system, essential auxiliaries, testing of the safety devices and alarms

b. An anchoring test

c. Full ahead and full astern tests

d. Tests of automated machinery system, if fitted.

T6. MOORING ARRANGMENTS REVIEW

100. Criteria for mooring arrangement survey

101. On Owners’ request, the mooring arrangements may be reviewed by the Society.

102. The Owners’ are to submit for approval arrangements, specifications and diagrams of the mooring arrangement, geometry of mooring arrangements and type of mooring equipment.

103. On completion of the installation, the mooring arrangements are to be surveyed by the RBNA.

104. When the ship is anchored, an underwater inspection of the mooring installations is to be carried out by an accredited diver and the report submitted to RBNA.

105. However, it is the responsibility of the Owners to ascertain the efficiency of the mooring arrangement during the lay-up period. The mooring arrangements are to be re-examined at regular intervals of not more than a year after the ship has been moored and when abnormal weather conditions occur.

T7. SUMMARY OF THE INSPECTIONS

100. Summary of the inspections

101. The tables T.T7.101.1 to T.T7.101.7 show a summary of the inspections to be carried out during the initial and annual maintenance surveys.

TABLE T.T7.101.1 – SUMMARY OF LAY-UP CONSIDERATIONS

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
Reactivation period	Approximately 24 hours	Approximately 01 week	Approximately 03 weeks	Approximately 03 months
Class status	In full class or Change status to laid-up notation LU	Out of service Laid-up condition Class notation LU	Out of service Laid-up condition Class notation LU Change to LURV passing renewal survey date	Out of service Laid-up condition Class notation LU Change to LURV passing renewal survey date
Class attendance	Normal class annual attendance in case there are any surveys due	Next renewal survey or Reactivation survey Whichever comes first	Annual maintenance during the lay-up period Reactivation or renewal survey (whichever comes first) to restore the ship to operation	Annual maintenance during the lay-up period Reactivation or renewal survey (whichever comes first) to restore the ship to operation
ISM and ISPS certificates	Full certification	Suspended after 6 months	Suspended after 6 months	Suspended after 6months
Maritime / Port Authority status	Normal operational status in port	Refer to local Maritime Authority lay-up requirements	Refer to local Maritime Authority lay-up requirements	Refer to local Maritime Authority lay-up requirements
Manning levels	As in operation	Minimum engineering and navigation officers (1)	Fire, flood, mooring, security watch only (1)	Fire, flood, mooring, security watch only (1)
Lay-up on board generator	None	As required	Deck generator	Deck generator
Lay-up dehumidifier	None	As required	De-humidifiers with ducts	De-humidifiers with ducts
Combustible materials control	Normal operation	Normal operation	All combustibles removed	All combustible removed
Lay-up declaration	Not required	Not required	Upon satisfactory conclusion of surveys	Upon satisfactory conclusion of surveys

(1) The minimum crew for a laid-up ship must be determined by request to the Maritime Authority. This table contains a recommendation for a minimum.

TABLE T.T7.101.2 – GENERAL MEASURES TO PRESERVE THE MAINTENANCE OF THE SHIP

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.101 Lay-up Log Book	Required	Required	Required	Required
C2.103 Anti-pollution measures	Zero discharge ´policy	Zero discharge ´policy	Zero discharge ´policy	Zero discharge ´policy
C2.104 Emergency contingency plan	Normal operation	Lay-up emergency contingency plan to be available on board	Lay-up emergency contingency plan to be available on board	Lay-up emergency contingency plan to be available on board
C2.105 Security	Normal operation	ISPS while valid Doors and openings locked, watch keeping.	Doors and openings locked, watch keeping.	Doors and openings locked, watch keeping.

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.106 Inspection openings	Normal operation	Open for air circulation Fine wire mesh	Open for air circulation	Open for air circulation

TABLE T.T7.101.3 – EXTERNAL AND INTERNAL HULL

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.201 Hull coating	Routine maintenance	Maintenance by crew	Painted prior to lay-up Maintained by crew	Painted prior to lay-up Maintained by crew
C2.201 Doors, Hatch covers, hold acceses	Routine inspection	Check coating, gaskets, closing cleats and bolts, water tightness. Hose test may be required.	Check coating, gaskets, closing cleats and bolts, water tightness. Hose test may be required	Check coating, gaskets, closing cleats and bolts, water tightness. Hose test may be required
C2.202. Underwater parts of the hull Impressed current cathode protection system. Or sacrificial	Normal operation	Impressed current and/or anodes Diver's inspection on annual and reactivation LU (*) surveys	Impressed current and/or anodes	Impressed current and/or anodes
C2.203 All accesses leading to internal spaces, pipes, ventilation ducts	Normal operation	To be kept closed	To be kept closed	To be kept closed
C2.301 Periodic soundings recorded in the Log Book	Normal operation	Weekly checking by crew. Records to be verified at annual LU surveys	Weekly checking by crew. Records to be verified at annual LU surveys	Weekly checking by crew. Records to be verified at annual LU surveys
C2.302 Ballast tanks	Normal operation	To kept	F	F
C2.303 Cargo tanks	N	F	F	F
C2.303 Cargo holds				
C2.304 Hull sea inlet and outlet valves				
Lubricating oil tanks	Normal operating condition	Tanks kept full are to be sampled prior to reactivation	Tanks kept full are to be sample periodically. If not satisfactory tanks to be emptied, cleaned up, refilled	Tanks kept full are to be sample periodically. If not satisfactory tanks to be emptied, cleaned up, refilled
C2.307 Engine room bilges and tank top				
C2.500 Dehumidification units of adequate capacity				
C2.309 Chain lockers.				

(*) LU surveys = Annual and reactivation Laid-Up surveys.

TABLE T.T7.101.4 – DECK OUTFFITING AND EQUIPMENT

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.405 Steering gear and bow thruster	Normal operation	Greased and turned once a week	Greased and turned once a month	Greased and turned once a month
C2.404 Anchoring and mooring equipment	Normal operation	Greased and turned once a week	Greased and turned once a month	Greased and turned once a month
C2.402 Deck outfitting	Normal operation	Routine maintenance	Greased	Greased
C2.407 Hatch covers	Normal operation	Routine maintenance	Moving parts greased Check panels for corrosion and pitting formation	Moving parts greased Check panels for corrosion and pitting formation
C2.409 Life saving aplpliances	Fully operational	Fully operational	Operational for lay-up crew	Operational for lay-up crew
C2.408 Ventilation and fire dampers	Normal operation	Routine maintenance	Sealed and periodically operated	Sealed and periodically operated
C2.900 Fire-fightinhg system	Fully operational Fixed fire-fighting systems ready Emergency fire pumps operational Main fire pumps operational, checked and run regularly Fire main readily available Alarm system Fire doors kept closed Fire dampers kept operational but closed	Fully operational	Fully operational (*)	Fully operational (*)
C2.403 Lifting gear	Fully operational Routine maintenance	Fully operational Routine maintenance	At least one crane operational. Cables not in use removed, greased and kept in adequate stores	At least one crane operational Cables not in use removed, greased and kept in adequate stores

(*) Local Maritime Authorities may grant differentiated requirements for laid-up ships.

TABLE T.T7.101.5 – ACCOMMODATION AND DEHUMIDIFICATION

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.601 Removal of waste	Adequate means for removing garbage	Adequate means for removing garbage	Adequate means for removing garbage	Adequate means for removing garbage
C2.602 Provision stores	Normal operation	Normal operation	All provision store to be emptied, cleaned, and secured in an open position	All provision store to be emptied, cleaned, and secured in an open position
C2.603 Deck alley-ways	Normal operation	To be considered	All access alleyways to be covered with H/D polythene	All access alleyways to be covered with H/D polythene
C2.604 to C2.606 Electronics: navi-gation, automation and control	Normal operation	To be considered	Systems to be turned off, isolated, and kept in a dry atmos-phere, except for VHF. Doors to the compartments to be kept open.	Systems to be turned off, isolated, and kept in a dry atmos-phere, except for VHF. Doors to the compartments to be kept open.
C2.607 Sanitary fittings	Normal operation	To be considered	Kept closed	Kept closed
C2.501 to 504 De-humidification and trunkings	Normal operation	According to C2.501 to 504. Machinery 20-50% relative humidity Accommodation 45-55% relative humid-ity	According to C2.501 to 504.	According to C2.501 to 504.

TABLE T.T7.101.6 – MACHINERY

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.701 Machinery spaces	To be kept dry, clean and free from oil residues	To be kept dry, clean and free from oil residues	To be kept dry, clean and free from oil residues	To be kept dry, clean and free from oil residues
C2.702 Rotating machinery turning (1)	Normal operation	Turned at regular intervals Not stopped at the previous position Manufacturers' instructions to be followed for first start at reactivation	Turned at regular intervals Manufacturers' instructions to be followed for first start at reactivation	Turned at regular intervals Manufacturers' instructions to be followed for first start at reactivation
C2.703 Diesel en-gines – general (1)	Routine mainte-nance	Operated monthly. Manufacturers' instructions to be followed for first start at reactivation	Opened and venti-lated with forced dehumidified air Turned at regular intervals Manufacturers' instructions to be followed for first start at reactivation	Opened and venti-lated with forced dehumidified air Turned at regular intervals Manufacturers' instructions to be followed for first start at reactivation
C2.703.a) Flushing with diesel oil (1)	Normal operation	Routine mainte-nance	Required prior to laying-up	Required prior to Laying-up

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.703.b) Engine shut-down for 3 months (1)	Normal operation	Not applicable	Not applicable	Not applicable
C2.703.c) Engine shut down for more than 3 months (1)	Not applicable	Routine maintenance	Spray anti-corrosion oil prior to laying-up.	Spray anti-corrosion oil prior to laying-up.
C2.703.d) Engine casing for small engines (1)	Normal operation	Routine maintenance	Ari vents and aperture to be kept sealed	Air vents and aperture to be kept sealed
C2.703.e) Engine casing for larger engines (1)	Normal operation	Routine maintenance	Casings to be ventilated and 35% humidity maintained	Casings to be ventilated and 35% humidity maintained
C2.703.f) Gears, camshaft, control elements, crankcase (1)	Normal operation	Routine maintenance	To be protected with anti-corrosion oil. Crankcases provided with desiccant	To be protected with anti-corrosion oil. Crankcases provided with desiccant
C2.703.g) Fuel oil lines	Heavy fuel lines flushed with diesel oil	Heavy fuel lines flushed with diesel oil	Heavy fuel lines flushed with diesel oil and injectors removed	Heavy fuel lines flushed with diesel oil and injectors removed
C2.703.h) Cooling systems	Normal operation	Routine maintenance	Emptied and opened to dehumidified atmosphere	Emptied and opened to dehumidified atmosphere
C2.703.i) Sea water systems	Normal operation	Routine maintenance	Emptied and opened to dehumidified atmosphere	Emptied and opened to dehumidified atmosphere
C2.703. j) Scavenger pipes	Normal operation	To be cleaned	To be cleaned	To be cleaned
C2.703.k) Oil for the governor (1)	Normal operation	Routine maintenance	Oil to be replaced	Oil to be replaced
C2.704 Turbochargers (1)	Normal operation	Routine maintenance	Filters cleaned. Internal parts protected from corrosion Rotor locked Openings closed	Filters cleaned. Internal parts protected from corrosion Rotor locked Openings closed
C2.705 Fresh and salt water systems and pump	Normal operation	Emptied or 100% filled of water plus corrosion inhibitor	Lines emptied and dried Left open to dehumidified atmosphere	Lines emptied and dried Left open for dehumidified atmosphere
C2.707 Air compressor and systems	Normal operation	Routine maintenance	Drained and filled with clean oil Covers removed Cylinders lubricated Air receivers to be opened, cleaned, dried and oiled	Drained and filled with clean oil Covers removed Cylinders lubricated Air receivers to be opened, cleaned, dried and oiled
C2.708 Reduction gears (1)	Normal operation	Routine maintenance Manufacturers' instructions to be followed for first	Safety valves removed, cleaned, slightly greased Forced circulation of dry air in closed	Safety valves removed, cleaned, slightly greased Forced circulation of dry air in closed

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
		start at reactivation	circuit with air hoses Manufacturers' instructions to be followed for first start at reactivation	circuit with air hoses Manufacturers' instructions to be followed for first start at reactivation
C2.710 Shaft lines	Normal operation	Routine maintenance Check regularly for leaks	Check regularly for leaks Water glands tightened Oil lubricated sealing to analyze oil and change if not satisfactory	Oil lubricated sealing to analyze oil and change if not satisfactory
C2.711 Boilers (1)	Normal operation	Routine maintenance	Smoke side cleaned Water/steam side: dry method Burners dismantles, atomizers greased Internal condition checked every 3 months Alternatively, filled with nitrogen Oil lubricated sealing to analyze oil	Smoke side cleaned Water/steam side: dry method Burners dismantles, atomizers greased Internal condition checked every 3 months Alternatively, filled with nitrogen Oil lubricated sealing to analyze oil
C2.712 Exhaust lines	Normal operation	Routine maintenance	To be blanked air tight	To be blanked air tight
C2.715 Bilge pump	Normal operation	Routine maintenance	Fully operational	Fully operational
C2.716 Engine room ventilating systems	Routine maintenance	Operated every month	De-humidifiers deployed	De-humidifiers deployed
C2.717 Lub oil system	Normal operation	Routine maintenance		
Hydraulic oil systems	Normal operation	Operated monthly	Operated or turned monthly	Operated or turned monthly

(T) For all items of main machinery, this table contains a recommendation for minimum proceedings. Manufacturers' recommendation are to be followed.

TABLE T.T7.101.7 – ELECTRICAL SYSTEM AND NAVIGATION EQUIPEMENT

Lay-up period	Hot ship < 1 month	Hot ship < 12 months	Cold ship < 5 years	Long term > 5 years
C2.801 – Switch-boards	Normal operation	Routine maintenance	Provided with desiccant / dehumidified atmosphere	Provided with desiccant / dehumidified atmosphere
C2.802 – Contacts of relays, breakers	Normal operation	Routine maintenance	Coated with neutral vaseline	Coated with neutral vaseline
C2.803 / 804 – Generator bearings and brushes	Normal operation	Routine maintenance	Cleaned and coated with new grease Carbon brushes lifted off commutations	Cleaned and coated with new grease Carbon brushes lifted off commutations
C2.805 –Cables and equipment	Normal operation	Routine maintenance Check for minimum of 200.00 Ohms if annual LU inspection due	Regular electrical insulation tests Check for minimum of 200.00 Ohms Check at annual LU inspection	Regular electrical insulation tests Check for minimum of 200.00 Ohms Check at annual LU inspection
C2.807 – Power for operation	Normal operation	Must have power for: Navigation lights -Fire and bilge alarms -Fire and bilge pumps -Fire extinguishing systems Additional if required: -Windlasses and mooring winches	Must have power for: Navigation lights -Fire and bilge alarms -Fire and bilge pumps -Fire extinguishing systems Additional if required: -Windlasses and mooring winches	Must have power for: Navigation lights -Fire and bilge alarms -Fire and bilge pumps -Fire extinguishing systems Additional if required: -Windlasses and mooring winches
Electric motors and starters	Routine maintenance	Local heating of spaces	Local heating of spaces	Local heating of spaces
External electric motors	Routine maintenance	Local heating and turning of motors	Motors removed to dry space if failed in insulation tests	Motors removed to dry space if failed in insulation tests
C2.906 Navigation lights, fog signalling, anchor lights, bow and stern lights	Normal operation	Normal operation	Operational Check condition at annual LU surveys	Operational Check condition at annual LU surveys
C2.102 Communication	Reliable means for 24 hour communication VHF operational	Reliable means for 24 hour communication VHF operational	Reliable means for 24 hour communication VHF operational	Reliable means for 24 hour communication VHF operational
EPIRB	Operational	Operational	Removed ashore	Removed ashore
Radar Transponders	Operational	Operational	Removed ashore	Removed ashore

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