# OCEAN CRUISING CLUB

# Guide to Practices in Laying Up a Vessel for an Extended Period

***Equatorial/Tropical Climate – rainy season***

***and***

***High Latitudes – winter season***

## Contents

## 1. Introduction

1.1 This guide has been collated by members of the Ocean Cruising Club to assist cruisers prepare their boats for an extended lay-up. It draws on the experience of members who have laid up their vessels in the extreme conditions of winter in high latitudes and the rainy seasons in equatorial/tropical climates, and all climatic conditions in between.

1.2 Although there are substantial climatic variations between the extremes, for simplicity this guide focuses on the extremes and it is then for the individual cruiser to consider climatic variations and make adjustments accordingly.

1.3 The choice of leaving the boat in the water or hauling out will depend on local conditions. In high latitude Gulf Stream regions (where the water temperature is above zero e.g. Iceland and Tromso) it may be better to overwinter in the water and avoid the risk of haul out given the absence of facilities. High latitude overwintering in the water assumes that it will be in a region that does not habitually freeze over. If the water freezes then far more precautions will be required. A lot of damage can occur to "frozen in boats" by commercial craft churning up the ice when manoeuvring, even without the influence of wind and tide.

1.4 The guide does not purport to be the final say on these matters and suggestions will be welcome and incorporated in future versions.

1.5 Agreeing on "one, true way" is nigh impossible – we are cruisers after all – as people have their tried and tested methods, and importantly, there is very little scientific evidence for some practices as the field does not lend itself to controlled experiments and rigorous research involving such as destruction testing. People do things to prepare their boats based on their own experiences, the experience of others, published checklists and recommendations, and advice that is passed on by word of mouth. Some of these things "appear to work" because there have been no adverse results. The practices set out here therefore include some of the things that people do which others may question, but no attempt has been made to challenge or contradict them. In essence, there are many ways of achieving the same result – a safe, secure boat and its systems preserved in good order ready to be re-commissioned for further cruising.

1.6 The guide is structured around boat systems and expanded explanations giving the reasons for particular guidance, are provided where appropriate.

1.7 The responsibility for laying-up a vessel always rests with the owners/skipper, who should not rely on any single source of information and who will always remain solely responsible for the safety of their boat and crew. The OCC is not responsible for any adverse results from using this guide.

| | Equatorial/Tropical Climate – rainy season | High Latitudes – winter season |
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| **2. Threats** | Major threats to the boat are:<br>➢ Humidity;<br>➢ Ultra-violet degradation;<br>➢ Pests such as ants, cockroaches, birds and termites;<br>➢ Rain;<br>➢ Hurricanes. | Major threats to the boat are:<br>➢ Ice damage to the engine, generator and plumbing;<br>➢ Ice build up on masts and rigging;<br>➢ Blown fine particle snow<br>➢ Frost on deck;<br>➢ Condensation;<br>➢ Very high wind speeds. |
| **3. HAUL OUT** | | |
| **3.1 The Haul Out** | Facilities for haul out are generally available in the busier parts of the cruising world.<br><br>The hull should be thoroughly washed and all growth, barnacles and so on removed.<br><br>The propeller and any rope cutter should also be thoroughly cleaned and checked for wear. This is a good time to remove a propeller that needs attention so repairs or refurbishment can be completed in time for re-launch.<br><br>Check the cutless bearing (if not a saildrive) for any movement/wear and plan for changing it if necessary.<br><br>If fitted, the bow thruster propeller will require cleaning of any fouling. The bow thruster lip seal should be protected to prevent drying out in sun, using a silicone grease or lanolin.<br><br>Further guidance on Haul Out practice is provided in Annex 1. | It is unlikely that a travel lift will be available due to the scarcity of leisure boats. Some improvisation will be required if a commercial ship yard is used and there will be a significant risk associated with haul out.<br><br>It is unlikely that the facilities to unstep and step a mast will be available.<br><br>If the vessel is ashore with the mast up and in a high wind area, some cruisers take lines from the masthead to fixed points at ground level to increase stability.<br><br>Also, as E/T C.<br><br>Further guidance on Haul Out practice is provided in Annex 1. |

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| **3.2. The vessel on chocks and stands** | Cyclones are an important threat and while it is highly preferable that the vessel will be laid up outside a traditional cyclone-susceptible zone, this may not always be possible (see Annex 1 for further observations). It is vital that chocking/stands are appropriate for the vessel size and design.<br><br>Some cruisers carry a portable ladder in case they are not available in the boatyard, but clearly this takes up a lot of space and is not an option for many cruisers.<br><br>If the boat has been placed in an oversized cradle, the support pads may be above the boot top so padding or cling film may be needed for the pads.<br><br>Chocks/stands provide an easy route for pests such as ants and cockroaches to enter the vessel, as do any electricity cables that might be left connected to run de-humidifiers or air conditioning units.<br><br>Similarly, in wooden vessels where it is prudent to lower the anchor and chain to a pallet on the ground, but still leaving the chain attached to the vessel.<br><br>Pests can be extremely difficult to eradicate so efforts at prevention are worth the trouble: it is good practice to smear grease on chocks/stands and any other items that link the vessel to the ground. Usually this is a ring of 5-6cm around stand legs and cables at about 2 metres off the ground. Grease should also be smeared on chocks for the keel and any other parts of the boat.<br><br>In some parts of the Tropics, security can be an issue with the threat of break-ins and theft. The arrangements in the boatyard for ensuring security should be determined and robust locks used for deck lockers and the entrance to the boat. | Yacht cradles will rarely be available so some improvisation will be required with jack stands and other supports if the boat is hauled out.<br><br>Security of the boat is important as in Greenland, for example, crime is an issue for boats overwintering and there are several reported instances of boats being broken into. |

| 4. ON DECK | | |
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| **4.1 Sails and sail management** | Sails should be washed down in clean water to remove salt and grime, dried, checked for any required repairs, and removed below or to another dry location for storage (subject to cost, security and safety).<br><br>It is also a good time to carry out preventative maintenance on the roller furler, including stripping and lubricating the roller furler gear, checking the grub screws holding the genoa furler to the forestay as these can work loose and prevent the top furler ring sliding down. A cloth wrapped above the furler will prevent ingress of dirt with rain.<br><br>If necessary, restore any anti-corrosion treatments between stainless steel and aluminium items. | Same as E/T C |
| **4.2 Bimini, sprayhood (dodger) and other deck canvas** | These should be dealt with like sails, taking care to avoid creases in clear 'windows' in such as sprayhoods.<br><br>Problems which may require repair during layup should be identified. Clean items avoid risks of mildew and mould. | Same as E/T C |
| **4.3 Running rigging** | All running rigging should be removed using light messenger lines in the rigging runs. Securely attaching a messenger line to such as halyards and reefing pennants can be problematic. There are various methods but two successful ways are:<br>1. if the halyard ends are whipped, use a marlin spike to make a hole through the halyard near one end and tie the messenger line via the hole using a bowline. Electrical tape can be wound tightly over the knot and back to the halyard end to prevent snagging on blocks and sheaves. The hole will close up once the messenger line is disconnected;<br>2. if the halyard end is finished off with a Flemish eye, the messenger line is attached to the eye; with the halyard core removed from the Flemish | Same as E/T C |

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| | eye, together with the messenger line it will not be bigger than the halyard itself and so it should run smoothly.<br><br>Where the two ends of the messenger line come together such as with halyards (but not with such as reefing pennants in the boom) the two ends can be tied together and then secured to an appropriate fitting. There should be sufficient tension on the messenger lines to prevent them flapping and becoming tangled, and preferably secured away from the mast to such as guardwires, grabrails or granny bars.<br><br>Other methods used include securing one end of the messenger line at the entrance to the foot of the mast and, for such as a jib halyard, wrapping the other end around the foil all the way down to the pulpit where it is secured. Shrouds may also be used to wrap the free end of other halyard messenger lines.<br><br>Even with the best efforts on return to the boat some months later the wind can have created a tangle of lines that requires patience to sort out.<br><br>Running rigging should be washed (going after those dirtier spots with a brush), dried and stored below or in another dry location.<br><br>Some cruisers finish off the washing of running rigging by soaking in fabric softener and this certainly makes them more pleasant to handle but care should be taken to thoroughly rinse as residue can make lines too slippery to be trapped effectively in rope clutches.<br><br>Other cruisers do not remove the halyards, but pull as much of the halyard as possible out of the foot of the mast, coil them above the deck and cover with a tarpaulin to stop UV damage. The tiny length of rope exposed at the masthead can be cut off and a new knot tied every few years because of chafe.<br><br>If the boom is to be used as a ridge pole for a boat cover then it may not be possible to remove the topping lift for the duration of the lay-up. In which | |

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| | case prior to re-rigging the boat the boom can be lowered to the deck and the topping lift removed for washing and checking. | |
| **4.4 Jackstays** | Remove, wash, dry, check for any damage or chafe and store down below – this is assuming that no-one uses wire jackstays that can roll underfoot and cause slips. | Same as E/T C |
| **4.5 Hull** | On GRP boats check for stress cracks and blisters; cracks could indicate a serious problem and need proper evaluation; blisters in the gel coat could also indicate a serious problem but if there are only a small number they can be punctured, any water drained and patched. | Same as E/T C |
| **4.6 Topsides** | On GRP boats a thorough clean and a wax coating/polish can help to protect the paintwork.<br><br>Some cruisers leave the wax/polish unbuffed and simply buff off prior to relaunch – check the technical advice for your product as some polishes left unbuffed can become rock hard. | Same as E/T C |
| **4.7 Paintwork and brightwork** | For deck paintwork and brightwork the same processes as for the topsides can be applied. | Same as E/T C |
| **4.8 Hatches** | With tropical heat, the rubber seals on hatches can be susceptible to sticking to metal frames, so these can be cleaned and then a light smear of silicone grease or lanolin will protect the rubber.<br><br>Hatch covers will also protect the hatches against UV damage.<br><br>Aluminium foil inside transparent hatches will protect inside varnish and upholstery. | Hatch covers that incorporate some closed cell foam will help to reduce the risk of condensation causing mould and mildew. |

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| **4.9 Boom** | Both ends of the boom should be stopped by fastening fabric over the ends to prevent birds and other flying creatures from using the boom for nesting – cloth, mesh or netting will allow some air to circulate. | Same as E/T C |
| **4.10 Rope clutches, blocks and other fittings** | Wash, dry and to prevent rust lightly apply a dry lubricant (WD40 now produce one or use McLube). Winches may best be left for servicing prior to relaunch. | Same as E/T C |
| **4.11 Exhausts** | A lightly oiled rag stuffed in the outer end of exhausts will prevent pests from entering. | As E/T C but also prevents fine snow particles blowing in. |
| **4.12 Wind generator** | This should be tied off, or the blades removed if easily done. Follow the service guidelines for such as bearing lubrication and change. | In high wind areas remove the blades. For some models the manufacturer recommends covering the wind generator with a suitably sized bag. |
| **4.13 Dorades** | If a dehumidifier or air-conditioning unit is to be left running, remove the dorade cowls and screw in the covers as this reduces the inflow of humid, warm air.<br><br>If neither is to be used then the cowls might form part of a ventilation plan.<br><br>A soft ball of the correct size can also be used to block off dorades from inside the boat.<br><br>A de-humidifier or air-conditioning unit left running will need some guardianage – regular checking by a trusted and capable person – often a person from whom units may be hired. Some units do not have automatic start-up if a power outage closes them down. In addition, there can be electrical problems potentially leading to failure and even fire. So, care should be taken to ensure that units are of good quality and in good working order, and preferably have a separate electricity supply rather than using the boat's system. | Same as E/T C<br><br>A dehumidifier can be quite desirable in cold wet climates as it also pumps out heat (c. 3kW for 1kW electricity consumed). |

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| **4.14 Windlass** | Depending on the model and fittings, it may be important to loosen the windlass from its mounting so that any salt between the two can be washed away with fresh water. If salt is left unattended it will attack the aluminium on the base of the windlass.<br><br>A sealed base should require only a wash down.<br><br>Follow the service guidelines for greasing and oil change. | Same as E/T C |
| **4.15 Anchor and chain** | These should be washed down with fresh water and any mud, sand or weed in the anchor locker removed and the locker washed out.<br><br>Check the anchor chain depth markings and ensure they are clearly visible prior to relaunch.<br><br>Break apart shackles before they seize shut permanently, grease the threads and re-mouse with seizing wire. | Same as E/T C |
| **4.16 Deck lockers** | Empty deck lockers and check that all items are still required.<br><br>Clean, dry and re-fill as necessary and lock. | Same as E/T C<br><br>Remove bottles and tins that might freeze and rupture, and place them in their own buckets. |
| **4.17 Electronics** | Easily removable on-deck chartplotters, AIS, radar screens, VHF radios and so on should be disconnected and moved down below if possible.<br><br>Cable plugs and sockets should be sprayed with an electronics corrosion inhibitor and taped over.<br><br>Terminal ends, if exposed to weather, should be situated so they are not in a "catch-rain" position. | Same as E/T C |

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| **4.18 Other deck equipment** | Items such as lifebelts, MOB recovery equipment, Danbuoys, boathooks and deck brushes should be washed in fresh water, dried and stored down below. | Same as E/T C |
| **4.19 Boat covering** | Many cruisers cover as much of the boat as possible to keep off UV, rain and bird and bat droppings.<br><br>In addition, if a de-humidifier or air-conditioning unit is not being used a cover can allow hatches and portlights to be left ajar to enable air circulation. Given the risk of entry by pests, any hatches or portlights left ajar should have sufficiently strong and fine netting to prevent entry, and particularly stop swarming termites that can get inside and attack wood.<br><br>There are three principal cover options:<br>1. Polyethylene tarpaulin – this can be an inexpensive solution, but there are different qualities of material. In the Caribbean the ubiquitous blue polyethylene tarpaulins have a tendency to barely survive a lay-up season as the securing eyes tear with wind and the fabric disintegrates through UV damage. Flapping tarpaulins can cause damage to the boat. The heavier grey/silver tarpaulins available in such as the Caribbean, are much more durable and will last multiple seasons. A frame using pvc pipes, wood or even rope will support the tarpaulin to ensure a flow of air over the boat and help prevent on-deck mould and mildew.<br><br>2. Custom fabric covers – these will be more exact to the design and structure of the boat and its deck, but are generally much more expensive and are likely to be heavier and bulkier than polyethylene tarpaulins thereby taking up much more locker space.<br><br>3. Shrink-wrap – in the tropics a frame is usually created using pvc pipe and the shrink wrap goes over the frame rather than wrapping the boat itself, as again there is a need for effective ventilation on deck. The major downside is cost and it is a one-off deployment. This covering should be installed by experienced and capable professionals. | Winter storms are very common in high latitude winters and will destroy poorly secured covers, risking further damage to the boat.<br><br>A well-secured low-profile cover that is below the boom will assist and reduce windage. A strong, waterproof fabric can survive wind of >100kts. For storage it can be packed into a sailbag.<br><br>The cover will keep the snow off the deck and allows lockers to be left ajar to assist in ventilation. It also discourages intruders.<br><br>Freeze:thaw cycles in Autumn and Spring regularly occur and a cover provides more protection to a teak deck, for example. |

| 5. DINGHY | | |
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| | Thoroughly wash the dinghy in fresh water.<br><br>Clear the bottom of any weed or barnacles that may have accumulated.<br><br>Remove any sand and grime that can get into the spaces between the sponsons and bottom/deck.<br><br>If the sponsons and the bottom have discoloured (often becoming a shade of brown) regular cleaners should be used. In parts of the Tropics boatyard staff will use Muriatic acid/Hydrochloric acid. However, this is a very powerful acid and great care must be taken to avoid splashes to eyes and skin. It needs to be washed off quite quickly too, so ensure that a hosepipe is at the ready for this part of the process if you are present when such work is being undertaken.<br><br>A hard-bottom dinghy can be left inverted on deck but a soft bottom dinghy can be rolled up and stored down below or in a locker.<br><br>Inflatables should be left inflated, but with a little air bled off so that hot weather will not cause excessive pressures. Cover with a tarpaulin to block UV light if left outdoors. | Same as E/T C<br><br>A well-secured hard bottom dinghy may be fitted under the cover on the foredeck, for example. |

| 6. OUTBOARD ENGINE | | |
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| | Consult the owner's manual before starting the lay-up process. However, there are common steps to be taken regardless of the make and size of the engine – unless you have an electric outboard motor which only requires a wash down. | Same as E/T C |
| **6.1 Wash** | Clean the outside of the engine with fresh water so that dirt or salt cannot interfere with such as oil changes. | Same as E/T C |
| **6.2 Flushing** | Flush the engine with fresh water to get rid of salt, dirt and other contaminants that could cause blockages and corrosion.<br><br>Depending on the model, if the water inlets are at the side of the bottom unit, engine "ear muffs" can be used, connected to a hose pipe. The water should be flowing before the engine is started, which should be run in neutral for about 5 minutes.<br><br>Some outboards have a water hosepipe attachment point that enables flushing without running the engine. In this case the flush should last about 10 minutes. A special connector is required which may have a lower capacity for water flow than "ear muffs" and running the engine could cause overheating, so again the owner's manual should be consulted for the correct flushing procedure. | Same as E/T C<br><br>The fresh water flush should be finished off by running antifreeze through the water inlet. |
| **6.3 Fuel** | It is preferable to drain fuel from the carburetor and fuel lines on the engine and also the tank if it is an integral part of the engine. Fuel left in the engine can cause a gummy build up that can clog the carburetor and fuel lines:<br>➢ If fuel is to be left in the engine and engine tank, then the tank should be filled and a stabiliser added in the correct quantity. The engine needs to be run for about 10 minutes to distribute the stabilised fuel, so this can be done at the same time as a fresh water flush; | Same as E/T C |

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| | ➢ If the outboard has a separate tank then it too should be filled and a stabiliser added. The fuel pipe from tank to engine should be emptied, again to prevent gummy deposits. | |
| **6.4 Fogging** | In order to prevent corrosion inside the engine, fogging oil needs to be introduced. The owner's manual will provide guidance for the specific outboard but the general procedure is as follows:<br>➢ Spray a generous quantity of fogging oil into the engine air intake while it is running;<br>➢ Then disconnect the fuel line and continue spraying fogging oil into the intake until it stops running;<br>➢ The engine will give out a lot of white smoke during this process;<br>➢ Fogging oil can be introduced without running the engine, simply remove the spark plugs and spray fogging oil directly into the cylinders. The engine needs to be turned over to coat the cylinders with the fogging oil. With a handpull starter, gently pull on the starter a few times to turn over the engine;<br>➢ Replace the spark plugs to prevent humid air entering the engine. | Same as E/T C |
| **6.5 Oil and Grease** | Change the engine oil according to the owner's manual for four-stroke engines.<br><br>Change the gear oil according to the owner's manual and check for any cloudiness or metal particles – both being indicators that a fuller service is required.<br><br>Grease all required points as per the owner's manual. | Same as E/T C |
| **6.6 Anode** | Check the anode and replace as necessary. | Same as E/T C |
| **6.7 Storage** | If the boat's insurance policy will allow, store the outboard inside the boat or in a suitably dry location, ensuring that it is in the correct orientation. | Same as E/T C |

| 7. INBOARD DIESEL ENGINE | | |
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| | Check the owner's manual for the correct procedure for your engine. However, the following procedure is generally common to most engines. It can be easiest to undertake some of the procedure with the boat in the water. | Same as E/T C |
| **7.1 Engine oil and filter** | Change the engine oil and filter – a hot engine provides an easier flow of the oil, so it should be run for an appropriate time. | Same as E/T C |
| **7.2 Pre-filter** | Check the diesel pre-filter and change if necessary. A vacuum gauge, if fitted, will indicate when the pre-filter needs to be changed, otherwise it is by having a look. | Same as E/T C |
| **7.3 Fuel filter** | The fuel filter at the engine should be changed in accordance with the manufacturer's service schedule. | Same as E/T C |
| **7.4 Air filter** | Clean the air filter. | Same as E/T C |
| **7.5 Drive belt(s)** | Check the drive belt(s) which can be loosened to remove tension during lay-up. | Same as E/T C |
| **7.6 Hoses and raw water strainer** | Check hoses and fastening clips.<br><br>Clean the raw water strainer. | Same as E/T C |
| **7.7 Cables** | Check gear and throttle cables and lubricate as necessary. | Same as E/T C |
| **7.8 Transmission** | Change gearbox/transmission oil if necessary. | Same as E/T C |

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| **7.9 Flushing** | Flush the heat exchanger and change the coolant according to the service schedule.<br><br>The seawater system also needs to be flushed. Clearly this will be done with the boat out of the water and there are a variety of methods for doing this; the easiest will depend on the design of your boat's raw water system:<br>➢ Fresh water needs to be introduced to the system via a hosepipe and the engine then started; the engine should be run for several minutes in neutral;<br>➢ Then for corrosion inhibition, antifreeze and water (50/50) should be run through the engine;<br>➢ The impeller should be checked and if the boat is to be left, it should be removed to prevent the blades that are "squeezed" most from losing their elasticity. | After flushing with fresh water as E/T C, run antifreeze with anti-corrosion properties via a service valve through the engine which effectively fills all the raw water hoses, passages, and the silencer/muffler and exhaust.<br><br>The engine filled with antifreeze ensures the engine passages are not exposed to the salty marine air and are protected from corrosion and freezing.<br><br>If laying up in the water close the raw water intake valve, flush through with antifreeze, suck out the dead space between strainer and valve and either leave dry or backfill with antifreeze. |
| **7.10 Anti-corrosion** | Spray electrical connections with moisture repellent.<br><br>Some cruisers lightly spray the entire engine with anticorrosion treatment such as Corrosion X or WD40. | Same as E/T C<br><br>Condensation on the engine can be an issue in boats that do not run a de-humidifier and unless anticorrosion treatments are applied damage can be caused. |
| **7.11 Fuel tank** | Adding a diesel fuel stabiliser will ensure that fuel quality is maintained for longer. This should be added in advance so that the stabiliser runs through the fuel lines and engine.<br><br>Fill the fuel tank (although condensation may not form as in a cold environment) and turn off the fuel line valve. | Same as E/T C |

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| **7.12 Finally** | Place a rag in the exhaust to stop unwanted creatures from entering.<br><br>Close the seawater seacock.<br><br>Make a list of all you have done that needs to be undone before you start the engine when recommissioning – some people tape the engine key to the list to avoid potential senior moments. | Same as E/T C but also to prevent fine snow particles blowing in. |
| **8. GENERATOR** | | |
| | Follow the same procedure as with the main propulsion engine(s). | Same as E/T C |
| **9. AIR-CONDITIONING** | | |
| | Check the owner's manual for correct procedure for your air conditioning. | The sea water part of the system needs to be addressed, and the options are to force compressed air through the sea water system or to pump anti-freeze through the system. The latter method aims to ensure that any water trapped in low points is replaced by anti-freeze solution.<br><br>To pump potable antifreeze though the entire system: close the air-conditioning intake seacock, remove the supply hose, dip it in a bucket of antifreeze, and then run the system until you see antifreeze coming out of the overboard discharge (some is pink but clear antifreeze will be more viscous than water). Make sure you reattach the hose when you have completed the process. |
| **10. HEATER** | | |
| | If the heater has not been run for some time then it should have been shut down as per the owner's manual for correct procedure.<br><br>Stuff an oiled cloth in the exhaust outlet to prevent pests entering. | Check the owner's manual for correct procedure for your heater.<br><br>If the heater is diesel ensure it is run through with fuel that has been stabilized. |

| 11. SANITATION | | |
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| | Holding tanks should be emptied while at sea or through a pump out facility.<br><br>While still in the water, thorough flushing with fresh water will help to prevent build-up of bacteria and odours both in a holding tank and the rest of the sanitation system.<br><br>Once on the hard, further flushing with a proprietary holding tank and sanitation product will maintain the cleanliness and hygiene of the systems.<br><br>Some cruisers flush a small amount of vinegar and vegetable oil through the heads which is intended to keep micro-organisms from growing and rubber lubricated.<br><br>Consult the owner's manual in respect of electric toilets and macerators. | Same as E/T C but the final flush through should be with anti-freeze.<br><br>Make sure that the raw water intake and pump for the heads is either dry or backfilled with antifreeze as well as the soil pipes. If laying up in the water it will be necessary to suck out the dead space above the valve. |

| 12. FRESH WATER SYSTEM INCLUDING WATERMAKERS | | |
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| | Although it is not necessary to drain the fresh water system and tank or to add any special products, some cruisers do fill all water tanks and add 15 ml (1 tablespoon) of chlorine bleach per 100 litres (c.25 US gallons) water.<br><br>Other cruisers do drain the water tanks and run the system as dry as possible to avoid water "going off" and a dry tank will be ready for fresh water at recommissioning.<br><br>Follow the owner's manual for long-term storage of the watermaker using the correct chemicals for storage of the membrane.<br><br>Clean and dry raw water intake filters. | The aim is to remove all fresh water from the tanks and systems or replace fresh water with anti-freeze that is suitable for potable water systems.<br><br>Some cruisers use a compressed airline to blow out all fresh water pipes. There may be a difficulty in removing all the water from pumps using this method, which is why the use of propylene glycol anti-freeze is preferred by others.<br><br>It is highly preferable to use only propylene glycol antifreeze when winterizing the boat's fresh water systems as antifreeze made with ethylene glycol is variously described as "highly toxic", "toxic" or "harmful". A higher proportion of propylene glycol than ethylene glycol will be needed as it does not lower the freezing point as much. A 50:50 solution should be effective down to -30C. Some products come ready mixed and do not need to be diluted.<br><br>Some cruisers do use ethylene glycol given the comparative costs in different parts of the world, but then undertake extensive flushing when recommissioning the boat. However, there is the risk that a residual taste will be left no matter how much flushing takes place. To address this, some cruisers have a valved T-connection in the system just above the valve shutting off the tank(s) and then pump the tanks dry, close the tank exit valve and feed antifreeze in through the T-connection to fill the pipes. This small amount is then easily flushed out.<br><br>It can be a good time to change water filters before getting them saturated with anti-freeze fluid or remove them completely.<br><br>When the hot water tank/calorifier is empty, disconnect it from its AC shore power receptacle to ensure it does not get powered up when tank is empty.<br><br>Given the capacity of the water heater/calorifier, requiring a significant amount of anti-freeze, it may be preferable to drain it and bypass it when |

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| | | flushing the rest of the system with anti-freeze. This also avoids having antifreeze residue to flush out when recommissioning.<br><br>Anti-freeze can be very costly - in North America cheap 'potable' propylene glycol antifreeze is sold as "RV Antifreeze" or "Plumber's antifreeze".<br><br>The watermaker requires careful attention:<br>➢ Drain the filters and wash and dry or replace them;<br>➢ Fill system with the manufacturer's recommended preservative;<br>➢ Either remove the main panel and store in a non-freezing area, blow through the high pressure and priming pumps with air;<br>➢ Or, fill the system with a mix of glycerine/sodium metabisulphate antifreeze and preservative. |
| **13. CABINS, SALOON AND INTERIOR** | | |
| **13.1 Cleaning and prevention** | Extensive cleaning is required:<br>➢ Fizzy/carbonated drinks may explode so run them down and give away any left over to the people working the boatyard;<br>➢ Remove all fresh food;<br>➢ Remove any obvious mould and mildew with an appropriate cleaner;<br>➢ All surfaces including bulkheads and headlining should be cleaned and wiped down with a vinegar solution to prevent mildew and mould;<br>➢ Bilges and lockers should be cleaned and dried;<br>➢ Curtains and cushion covers should be washed and dried depending on usage;<br>➢ Vacuum, wash and dry carpets, depending on usage;<br>➢ Clean refrigerators and leave doors/lids open;<br>➢ Clothing that has been sprayed with seawater should be washed and dried according to the manufacturer's recommendations, paying particular attention to zips and zippers which should be lightly sprayed with a dry lubricant, if necessary; | Same as E/T C<br><br>A good quantity of anti-freeze should be left in the bilge if there is a risk of water ingress from such as keel-stepped masts. In addition, leaving a bilge pump switched on may be necessary and also a requirement of insurers if the boat is left in the water.<br><br>Some cruisers remove from the boat:<br>➢ All water-based drinks unless in coke/ lemonade style bottles –wine, beer and lower proof spirits;<br>➢ Cleaning products that are water based or in hand sprayers;<br>➢ Eye wash, water-based disinfectants and similar products;<br>➢ All tinned goods unless they have a high fat content, in which case they should be placed in a plastic bucket in case of leakage.<br><br>However, other cruisers have left such as cans of food and bottles of wine on board in temperatures down to -35C without damage once thawed. |

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| | ➢ Turn off the gas both inside the boat and at the tank.<br><br>With a keel-stepped mast it is possible that water can enter and reach the bilges, in which case it will be necessary to leave a bilge pump switched on (see 13.3 Engine and Service Batteries – High Latitudes regarding power options). | The following (if fitted) should be blocked with rags or tape to prevent fine snow particles entering:<br>➢ Engine space air inlet and outlet vents;<br>➢ Microwave vent;<br>➢ Galley extractor vent;<br>➢ All dorades;<br>➢ Companionway.<br><br>Humidity and temperature fluctuations are important in determining the practice that is chosen:<br>➢ Condensation leading to mould and mildew is a huge risk so it is really important not to leave any cushions in contact with the hull regardless of whether or not a boat is continually dehumidified;<br>➢ Very low humidity levels and limited temperature fluctuations are unlikely to lead to mildew forming. |
| **13.2 Anti-corrosion** | Protect electronics by spraying any exposed connections with a corrosion inhibitor, or if your aim is suspect, use dielectric grease.<br><br>Remove batteries from torches/flashlights and other battery-operated items, and lightly spray the battery compartment with a corrosion inhibitor. | Same as E/T C |
| **13.3 Engine and Service batteries** | Fully charge the engine and service batteries.<br><br>Whether they are left connected or are disconnected will depend on the boat being completely unattended or having some guardianage, and if such as solar panels will be delivering a charge.<br><br>Batteries left connected over an extended period but without any charging can run down sufficiently through "parasitic draw" to be destroyed. Some cruisers leave service batteries connected if they are being charged by such as solar panels, but disconnect the engine starter | Fully charged AGMs in good condition can safely be left for 9 months provided there is absolutely no draw on them. Disconnecting them completely ensures that no unexpected discharges occur. Like all batteries if partially discharged then they will be more likely to freeze.<br><br>It is probably safer to remove flooded (lead acid) batteries as they are more susceptible to freezing at less extreme temperatures.<br><br>Some cruisers disconnect some of the batteries if they are leaving such as bilge pumps switched on – for example, disconnecting 80% of the service |

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| | battery. As an alternative, a small, uncontrolled solar panel installed inside a hatch will keep batteries from discharging. | batteries and leaving 20% connected which can in turn be connected to a 4-stage smart charger if shore power is available.<br><br>Clearly, solar power is of no use in a very high latitude winter due to limited sunshine and snowfall.<br><br>In latitudes where there is some sunshine, some cruisers have been advised by a boatyard to purchase clear covers for the solar panels to maintain a trickle charge. |
| **13.4 Seacocks** | Check all seacocks and lubricate.<br><br>Some cruisers close seacocks to prevent pests entering the boat. However, others leave them open and also remove the instrument transducers leaving the holes open to contribute to ventilation and to act as a drain in case of rainwater leaking in.<br><br>The choice will depend on local environmental conditions and the ventilation strategy. | Close all seacocks if the boat is in the water.<br><br>On the hard, leave all seacocks open to avoid the chance of water collecting and then freezing. |
| **13.5 Finally** | Position cushions so that all lockers can be left open for ventilation.<br><br>Although significant steps will have been taken to prevent pests entering the boat, leave a few cockroach traps on the cabin sole in the corners of the galley, and place ant powder also on the cabin sole and on the inside of the companionway.<br><br>Some cruisers also leave mothballs in the vicinity of clothing, linen and towels.<br><br>Yet others will place around the interior jars of vinegar with the tops perforated to allow evaporation, as a means of warding off mould and mildew. | At very cold temperatures expect the unexpected: for example, a cruiser experienced the low temperatures contracting the throttle cable thereby shifting the clamp position on the throttle and auto-adjusting the idle speed to 2,000 rpm – this was not discovered until the engine was started during the launch.<br><br>Long, dark winters and insecure ship yards seem to encourage intruders and theft in some high latitude destinations. Alcohol on board seems to be a common attraction for intruders so sturdy locks should be used where this risk exists.<br><br>Same as E/T C |

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| | Ensure the grab bag (abandon ship bag) is winterised, removing batteries and dealing with such as liquids.<br><br>Disconnect shore power and water hosepipe and stow in suitable locker.<br><br>Take down the OCC burgee/house flag, courtesy flag and bring inside along with the ensign. | |

## ANNEX 1 SOME FURTHER CONSIDERATIONS FOR LAY-UP

### 1. General

1.1. Guardianage i.e. an occasional caretaker such as a boatyard worker or another cruiser is beneficial, and should:
- have keys to the boat;
- have written permission to enter the boat;
- have the owner's contact details;
- check the battery voltage and charge as neccessary;
- check the bilge;
- have good relations with boatyard staff and management.

1.2. Check the insurance policy for any caveats for lay-up, for example some policies demand periodic reports of the vessel being in good condition.

### 2. Haul Out

2.1. Attend the haul out and launch if at all possible:
- make sure there are marks on the toe rail so that hoisting slings avoid such as the log paddle wheel and depth transducer;
- a power wash will get rid of growth and a scrape will remove barnacles;
- ensure that the ground is firm and will not allow stand feet to sink – if the ground is is not extremely solid, it may be necessary to have such as plywood pads under the feet of the stands;
- with some boats it may be necessary to ensure that hard-stand braces are placed where the hull is well supported internally i.e. on or very near bulkheads.

2.2. If the boat is positioned where vehicles might come close, hanging such as a fender from the bow or stern will give a visual aid to drivers.

2.3. If there may be high winds then ratchet ties downs will be required, especially if some boats around have sails and other canvas still up, and could be susceptible to falling over. This will be essential in cyclone zones. In some such zones, for fixed keel boats a pit may be dug under the keel so that the boat can be lowered and even rested on tyres.

2.4. Check stands with any wooden pads that will be placed against the hull for protrusions that may damage the hull – plastic pads or thick plastic sheet inserts may be required.

### 3. In Water Lay-Up

3.1. Fenders might benefit from having dive weights tied to the bottom to hold them down; this is especially important when the dock/pontoon is low and wind and boat roll might pop the fenders out.

3.2. Try to position the boat's securing lines to pull the boat away from the dock thus ensuring that the fenders are only in play in really adverse conditions, thereby avoiding scuffing the topsides.

3.3. Some cruisers use metal springs or rubber tension absorbers to deal with surge, but they are not always reliable and can break. Other options are to use old tyres as shock absorbers or leave the dock lines slightly slacker than usual. Some cruisers augment their dock lines with thinner 3 strand nylon so that they are holding the boat most of the time as they have plenty of stretch to absorb the surge, with the main dock lines coming into play in more boisterous conditions.

## 4. Removing the Mast

4.1. Attending the un-stepping and stepping of the mast is essential to ensure that yard workers take proper care.
4.2. The mast storage area should be checked to ensure that the mast will be safe and not susceptible to accidental damage.
4.3. Many cruisers undo and redo the mast wiring themselves.
4.4. Similarly most cruisers loosen the rigging screws themselves. If design allows, it is better to leave the rigging screws on board the boat to make servicing easier. If the rigging screws are left attached to the shrouds taping some cloth or such as old socks will protect them from being dragged in dirt.
4.5. With a keel-stepped mast that has partner wedges it is advisable to record their position before removal, and to do the same regarding the position of the mast bottom in the step and its rocker.
4.6. Recording the rigging screw adjustment will ensure repeatability when stepping the mast.
4.7. Check all fasteners/fixtures on the mast and if necessary renew any anti-seizing materials such as Duralac or Tef-Gel.
4.8. Remove antennae and such as radomes that might be vulnerable to damage.

## ANNEX 2 CONSIDERATIONS FOR RE-COMMISSIONING

Although thorough checks should have been made prior to and as part of Lay-up, it is advisable to recheck critical features of the boat as part of re-commissioning as some deterioration or adverse effects could have occurred. The following is not intended to be an exhaustive list and clearly checks will depend on the action taken at Lay-up and the circumstances of individual boats and the climatic conditions.

1. Re-check all hoses and clamps and replace as necessary.
2. Re-check seacocks for ease of movement.
3. Check for deck leaks at ports and hatches and repair as required.
4. Test bilge pumps for correct operation.
5. Check cooker and gas tanks, fittings and hoses for any leaks.
6. Check the engine's raw water strainer.
7. If drive belts have been loosened, re-set.
8. If fitted, re-check the engine shaft and rudder stuffing boxes.
9. Check that fuel lines are in good order.
10. Check the engine and transmission control cables are working correctly.
11. Check battery cables and terminals and charge batteries as necessary.
12. Grease the propeller as necessary and ensure cotter pins are secure.
13. Check the steering to ensure it works properly.
14. Re-check a GRP hull for blisters, distortions and stress cracks that could have developed during lay-up.
15. Check all standing rigging parts, including chain plates, and lubricate turnbuckles as necessary.
16. Check that safety equipment is in-date: flares, fire extinguishers (and shake up powder extinguishers), EPIRB.
17. Inflate lifejackets manually and check auto-inflate equipment.

18. Test all safety alarms: carbon monoxide, smoke, LPG, and bilges.
19. Check anchor, running and deck lights.
20. Carry out radio checks for VHF radios and HF radio (if fitted).
21. Check medical kit and replace out-of-date items as necessary.
22. If the boat has been laid-up ashore, check all seacocks for leaks on launching.