

WINTERIZATION

Tips & Tricks

NEPEAN
SAILING
CLUB



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BEFORE HAUL-OUT

Fuel Stabilizer

Add preservative: To stabilize the fuel, add preservative to the fuel. Typically, do that **a week or two before haul-out** and go for a good motor around the lake to work the preservative through all lines and filters on the boat. Note that some stabilizers for diesel include sulphur replacement additives. If your engine is designed for the use of "old fashioned" diesel, use these or add them separately whenever filling your tank with the Ultra Low Sulphur Diesel [ULSD]. Calculate the stabilizer based on the amount of fuel that has not been treated before.

There are theories about filling the tank to the top to avoid the build-up of condensation. The drawback of doing that is that you will have a tank of old fuel next season. Diesel deteriorates and breaks down, forming potentially more water by doing that, than would be caused by condensation. See also:

http://www.yachtsurvey.com/myth_of_condensation_in_fuel_tanks.htm

Holding Tank/Head

Clean the holding tank: Pumping the holding tank at the NSC is free of charge. Pump the holding tank empty **about two weeks before haul-out**. Add subsequently a strong solution of dish soap [scented to your preference] with about 2 buckets of water through the pump out connector (not the head). This will slush around in the tank while motoring/sailing around and clean the tank. Pump out at the service dock and rinse twice before haul-out. Try to put some weight on the boat to heel the boat in the direction of the pump-out side of the holding tank to get as much as possible out of the tank (there is always some liquid remaining).

Speedometer

Protect the speedometer sensor (paddle): If your speedometer is exchangeable with a plug and potentially can get damaged by the slings of the crane or the posts/pads of your cradle, remove the sensor and replace it with the plug. Be sure to have all things within reach as water will gush in when doing this job. Make sure the notch of plug is lined up with the indentation at the top of the thru-hull fixture and hand-tighten the screw. (Some brands use this indentation to align the sensor horizontally and have a similar notch on the plug.) Mop up any water/ pump out bilge and inspect for water leakage afterwards.

Engine oil

Replacing the engine oil. After warm-up of your engine (go for a spin on the lake, or let it run in gear at your dock), your engine and transmission oil have warmed up and should be easy to pump out/drain and replace. Use oil as specified per your engine manual.

Suggestion: Use an empty windshield wash bottle and measure/mark on the outside the amount that should come out of the engine and/or the transmission. This makes it easier to judge how much oil still might have to be pumped out. The bottle with the removed oil must be disposed off at the appropriate site (not the NSC - some Canadian Tire and garages will take it).

Note for diesel engines: the oil API classification should typically exceed "CD". Viscosity depends on the ambient operating temperature. In Ontario, SAE 30 would be a good choice. The use of oils with a dual SAE rating (e.g. 10/30) is not recommended (besides that: you are not operating the engine at temperatures requiring the lower SAE qualities). Also make sure that the oil is NOT marked as intended for gas engines. If possible stick with the same brand over the years.



Mast

Prepare mast for removal: Remove clevis pins and other “sinkable” items at your dock. Replace the clevis pins (and specifically the one holding your furler) with bolts and nuts and remove all boots. Before doing this measure with a calliper all turnbuckle openings and write them down for next year’s settings. Mark the shrouds with red/green electrician’s tape and identify “which shroud is which”, if necessary (i.e. B, M, S). Next spring you will use the calliper setting to re-rig the boat at the same tension.

Once marking and measuring is done, relax the backstay turnbuckle and the turnbuckles of the shrouds. Undo spring rings and tape top and bottom spring ring together near the midsection of the turnbuckle, so they cannot interfere with the threaded portion of the turnbuckle – keep tape on until after launch next spring. Loosen each turnbuckle a few turns.

To exchange the clevis pin of the furler, secure the foresail halyard to the toerail or anchor roller (whichever is farthest forward and sturdy enough to hold the substitute forestay). Tighten and secure the halyard. Replace the clevis pin with a long bolt and a locking nut. Undo the halyard. You can do this exchange while standing in front of your boat, which is much easier and secure than when you are laying on the deck in the well. (When de-masting in the well, it will be easier to remove a long bolt from the furler base as your body will be in an awkward position to pull it.)

To exchange the clevis pin of the backstay, use the main halyard. If the halyard is too short to reach the farthest sternward point of your boat, secure a line between the two stern cleats and attach the halyard to this line (it will form a triangle). Tighten and secure the halyard before removal of the clevis pin. When done, undo the halyard from the stern (line).

The clevis pins on the shrouds and the boots can be removed one at the time without rigging any securing lines.

Undo Wire connections: Undo all deck connections to antenna, mast light etc.

Organise de-masting: Book the time for de-masting well in advance in the crane book at the office. Make sure that you have adequate crew: One person to handle the furler, one to handle the mast foot and one for operating the masting crane. Assign one extra person (maybe yourself) to supervise and keep an eye on the activity to ensure that nothing gets snagged.

Most boats de-mast with the stern facing east (the back of the well). When de-masting, ensure that the crane is centered with the boat and about 2 feet to the front of the mast. This way the strop will slide up against the spreaders and the crane will not wreck the windex on top of the mast. Do not over-tighten the strop or you will not be able to remove the mast pin. After securing the mast with the crane, remove the bolts from all stays/shrouds. [When removing the mast at the well, the locknuts can be undone easily and any lost items will be at low cost.] The mast pin comes out last. When this occurs the mast may “jump up”. Make sure that the person assigned to the mast foot keeps control of this and subsequently will walk towards the bow meeting up with the person holding the furler. Use bungee cords to secure the furler and mast together.

If you take your mast off the boat, and the mast is heavy arrange a fourth person to receive the mast from the boat. You can swing the top of the mast to the south-east corner of the well and use the masting crane to move it horizontally towards the receiving person on shore. Crew on the boat can be released as this movement is in progress.

Have temporary sawhorses set up to leave your mast on, while you are busy with the cleaning/moving of your boat. You will have to strip the spreaders from the mast before storage on the mast racks. Coil-up the shrouds/stays and use a couple of wire ties to keep them together. Unscrew the turnbuckles so they don’t fall off.

If your mast has an open end, fill the cavity with bag or slide the bottom half of a plastic bottle/can over it to keep spring birds from building their nests.



BEFORE OR SOON AFTER HAUL-OUT

Water Systems

Drain raw water from engine and all water systems, once they not need to be operated anymore (and before the first night frost when on the hard!).

Head: Replace water in head and waste hose with antifreeze. Pouring antifreeze in the head and flushing it does not fill the dip at the back of the head (where the intake hose flushes into the top of the bowl). Therefore, close the thru-hull intake valve and disconnect the raw water intake hose. Stick the hose in a bottle of pink antifreeze. Alternatively, if this is done after haul-out, stick a hose in the water intake thru-hull and put the end of the hose in a bottle of anti-freeze. Pump the head until it pumps solid pink. Reconnect the intake hose and open the valve so that it is not forgotten in the spring.

Head Pump: The pump mechanism of the head contains various rubber parts that tend to dry out. Use a small amount of mineral oil in your last flush of the head and the pump will run smoothly the next season.

Water Supply: Empty all water reservoirs (tanks and heaters). Disconnect hoses at lowest point to drain any remaining water. Dry out water hoses with pressurized air to avoid the build-up of mildew. Apply antifreeze if hoses cannot be drained or dried out.

Reconnect all hoses and leave all valves and drains open.

Bilge: Empty the bilge as much as possible and add pink antifreeze in a moderate amount.

Engine Cooling

Closed circuit engine cooling: Check your engine antifreeze to make sure the antifreeze is able to withstand the cold of winter. Replace/ top up fluid as necessary with the green (glycol) antifreeze as prescribed in your manual.

Raw water cooling: It is best to do the cooling system with a warm engine, if there is a cold "by-pass". Therefore, if possible, do the cooling system while still in the water at the haul-out well (after letting the engine run for a while). If you still have to use the motor, you have to postpone this activity until after haul-out.

Before draining the lake water from the engine close the water intake valve. Drain all water from the engine using the engine's drain plug. Inspect the drain plug and remove any muck. Reinstall drain plug. At this point your engine does not contain any water, but the mixing elbow and exhaust system still do.

Suggestion: With the intake closed, you may want to take the opportunity to inspect your impeller for wear (not a winterization item – add to list of spring items, if needed).

Disconnect the intake hose from the thru-hull and stick it in a bottle of antifreeze. Run the engine (or crank engine manually) with pink "plumbing antifreeze" until the exhaust is solidly pink. Reconnect the hose so that it is not forgotten in the spring and open the intake valve.

Note: Use plumbing antifreeze for this purpose (the use of glycol-based antifreeze is for closed cooling circuits in operating engines only, whereas the use of plumbing antifreeze is to displace water with liquid that does not freeze). Use antifreeze without glycol/alcohol as otherwise it could damage nylon parts (if any – the Chandlery sells the right stuff).

Suggestion: Inspect your all belts and fuel lines for wear (not a winterization item – add to list of spring items, if needed).

Engine Fogging (protecting the engine against corrosion with oil)

Fogging oil is applied in spray form to the inner surfaces of the engine's cylinders to prevent rust and corrosion damage to the cylinder. Fogging oil also provides lubrication and extra protection to the moving parts of the engine. In gas engines, fogging oil is sprayed into the air intake as the engine is running. In diesel engines, it is applied to the intake manifold. Refer to your owner's manual for specific instructions on how to fog your particular motor. After completion of the fogging, a rag can be stuffed into the intake to keep moisture out. Don't forget to remove the rag before starting the engine in the spring.

Note that the starter should not be used for diesel engines, but that the oil should be spread by turning the engine over by hand, as the engine can start using the oil as fuel.

AFTER HAUL-OUT

Bottom cleaning

Removal of algae and other growth: the bottom can be cleaned easily if this addressed soon after haul-out. A stiff brush and/or power washer is all that is required. The longer the attached material has the time to dry up, the harder it will be to remove it. If you take your boat out with a service provider, wash it immediately following the haul-out. For club haul-out, make arrangements in advance.

Drainage

Levelling the boat: Ensure proper levelling (vertically 90° to the water line, horizontally to the waterline), ensuring that any water will run off to the cockpit drains. Proper drainage is important as any standing water in the cockpit will freeze up. (Build-up of ice in the cockpit can topple the boat sternwards, particularly on trailers that are not properly blocked up.) Ensure all cradle pads are secured in place without blocking any drainage, but do not over-tighten.

Valve Drainage: Remove any water contained in the thru-hull valves.

Ball-valves: Some ball-valves have a drain to remove liquid from the ball: water could collect in these when the ball is put in "closed" position. Leave the ball valve in "open" position and drain – dry-out the drain cavity.

Gate valves: with the exception of cockpit drain valves, gate valves can be protected from freezing up. Open the gate valve to drain any water and close the valve. Plug the through-hull with a plug or some duct tape. Submerge the valve with plumbing antifreeze and open the gate. This will fill the cavity in which the gate retracts with antifreeze. Remove the plug. Turn the gate one turn to leave it ¼ "open". This can also be applied to ball valves with a drain when they were opened and closed during the season.

Batteries

When all things requiring 12V power are done, take them home. While this is not scientifically explained, it is recommended that they will not be stored on the concrete floor without a big board, such as a few 2X4's, underneath. Charge the batteries once/month with trickle charger to full capacity.

Cleaning/Waxing

Clean the hull with soap (such as dish soap with lemon) [and/or liquid VIM as maybe required]. Like the bottom, removal of caked-on dirt takes more effort the longer it has been allowed to remain. If time allows, use a wax cleaner (i.e. Mother's wax cleaner sold at Canadian tire) to clean the wax of the boat before lay-up.

Engine propulsion components

Prop, Cutlass Bearing and Stuffing Box Inspection: Prop (inspect for damage), Cutlass bearing (inspect for play), and Stuffing Box (inspect for surface cracks).

Electronic Instruments

Remove all (easily) removable instruments for off-site storage. This will reduce damage and/or theft (it will less time and cost to reattach the current instrument in the spring than to obtain a replacement and installing that). Sandwich the resulting hole between two pieces of board with some foam rubber (squeezed together with one or two bolts and nuts in the middle of each hole).

Interior

Perishables: Remove all food, canned and bottled drinks.

Non-Perishables: Remove all gear, fire extinguishers, sails, carpets, cushions for storage off-site, where possible (in particular if the boat has no interior liner and is prone to condensation). Position all cushions that must be stored on board, vertically to allow maximum of air circulation around them.

Stove: Ensure pressurized stove is de-pressurized (should be done any time when stove is not used for a longer period of time in summer and winter).

Rigging

Shrouds, stays and turnbuckles: Inspect for wear and fraying. Order your replacements in the fall to avoid delays in launching.

FALL, WINTER AND SPRING

Tarp

Installation: Ensure with ropes and weights (water bottles) that sufficient tension exist to keep the tarp from sagging during the winter to avoid ice build-up along the edge of your boat (toe rails covered with a tarp serve as a dyke for standing water). Inspect and retighten the tarp during the winter.

Ventilation: Mildew will form if insufficient ventilation exists when early spring sun rays build-up heat under the tarp. Allow for a cross-breeze, specifically if you use polyethylene tarps. Remove the tarp early in spring even if there is still a chance of snow. Tarps with open ends (for cross-breeze) are an invitation to birds to nest on your boat in the spring.

FALL OR SPRING

Woodwork

There are various Cetol variations on the market (suggestion: use Cetol Marine only). Cetol is an oil based emulsion with a UV inhibitor in it (that makes the stuff look yellow). A light sanding with 220-230 grit paper or a scotch brite pad (to give the new layer a better bite) is recommended – not too much or you get to the bare wood! Make sure that the surface is degreased thoroughly. Wash with soap water and let it dry. Clean the surface with Interlux 216 (or similar surface degreasing product). Apply the Cetol when the temperature is above 10 degrees. Don't use masking tape but use a steady hand instead: Cetol will dissolve the glue of the tape. Have a bottle of Varsol handy when applying Cetol. Leaving drips a few minutes on the gelcoat will discolour it, so act quickly when it is where it should not be.

Note: Cetol Gloss is a finishing coat, which gives lustre to the underlying Cetol coats. If Cetol Gloss has been applied, it must be removed completely before a new coat of any Cetol is applied, or it will not bond and flake off during the season.

SPRING

Bottom Paint

Antifouling Paint is typically done in the spring. VC17: Get the VC17 in the February spring sale of the Chandlery (15% off). One litre should be sufficient for a 25 foot boat, but since VC17 stays good when the can is closed well, you might as well buy a back-up and keep it if it is not needed. Mix the VC17 and the copper powder that is packaged in the lid in a wind-free place and stir well. (I do it at home and take the can to Rona for a good shake.) Stir the can regularly when applying the VC17 as the copper powder settles in the bottom of the can.

No sanding or chemical cleaning is required: The new layer will bond to the old one by dissolving the old one (part of the product characteristics). VC17 evaporates quickly. Avoid being interrupted. Use a small roller and a small tray. Home Depot has them for about \$6.--. The roller is 4-5" with a matching tray. The roller and tray can be used over again without cleaning as the new VC17 dissolves what is left on the roller/tray from previous years. When applying VC17, keep going without running too many times over the same place (just a waste, there is no big build-up). VC17 can be removed with Varsol. Taping the boat at the water line is recommended as it allows quicker application than when you have to be really careful.

Waxing/Rubbing

Rubbing: Use rubbing compound only if and where there is a need. The gelcoat of your boat gets softened and is then rubbed away.

Waxing: Instead of wax sold (and priced) for marine use, there are various good car waxes that are carnauba based (i.e. Mother's Carnauba Cleaner wax and/or Mother's Pure Carnauba Treatment). Apply the liquid wax with a rag onto one side of the boat all at once (contrary to the instructions on the bottle). Let the wax haze over and remove the white haze with a woollen sock in which a dense piece of foam rubber is stuffed (like the ones used for wet sanding). Tap/hit the sock regularly to remove the white "dust" that collects when shining the boat. In the spring you can redo the cleaner wax. (I have skipped the Pure Carnauba treatment a few years without much regret.)

Valves

Inspection: Inspect valves (specifically gate valves) for any cracks due to freeze-up during winter. Use a small mirror where your view is obstructed. Replace before launch.

Mast

Wiring and lights: check wiring and lights while to mast is horizontal.

Antenna and windex: Don't leave home without them and mount the antenna and windex before erecting the mast!

Miscellaneous

Take pictures of things you have to take apart, so you can remember where and what the sequence of assembly is.

Take old fluid (oil and antifreeze) and any other (hazardous) materials to the appropriate **offsite** disposal site.

Take inventory of all things you need from the Chandlery and have a list handy when they have their sale in February. Impellers are a non-stock item and need to be ordered in advance.

