

## Winterizing Tips from BoatUS and Gull Lake Marine

Nothing is harder on your boat than neglect, and neglect is exactly what recreational boats are subjected to when cold weather settles in. But proper lay-up techniques can minimize the ill effects winter disuse will have on your boat. A prime objective of lay-up is to prepare your boat for the inevitability of freezing conditions. Fluids must be removed or protected, and nothing should be aboard that might be damaged by freezing temperatures.

### **Prepare a checklist**

The most important tool for properly winterizing your boat is a pencil. Unless you prepare a comprehensive checklist - and follow it - chances are good that you will miss a step or two. Spending a few minutes now tailoring the generic checklist below to your specific requirements will next spring save you hours of dealing with the consequences of an oversight.

\* **Empty lockers of perishables.** Take home all food stuffs, including canned and bottled goods. Bunk cushions should be propped up, or better yet, taken home. Open various locker doors, hatches, ice box lids, etc., to circulate air and inhibit mildew. Metal zippers on cushions will benefit from a few squirts of light lubricating oil. Also take off any cans or bottles containing liquids that could freeze.

\* **All flammables** - spare cooking fuels, charcoal, paints, thinners, and varnish--should be stored ashore, preferably in a tool shed away from the house. All are fire hazards. Portable propane canisters should never be stored below on a boat, even during the season, as the canisters can rust and leak. Leave at least one fully charged fire extinguisher in clear sight.

### **\* Freezeproof the toilet**

Pumping a toilet "dry" may prove inadequate. Disconnect the inlet hose from the closed seacock and submerge it in a 50-50 mix of water and propylene glycol antifreeze. Operate the head until you are sure the antifreeze has passed through the toilet and all lines.

If you have an onboard sewage treatment system, follow the manufacturer's instructions for winterizing. NOTE: For all pump, tank, and hose winterizing, use only non-toxic propylene glycol antifreeze. Never use the ethylene glycol type--common automotive antifreeze--which is poisonous.

### **\* Pump out the holding tank**

If the holding tank was empty and clean when you treated the toilet, you can leave the antifreeze mix in the tank, but an empty tank is better.

### **\* Empty all freshwater tanks**

Antifreeze is not practical because a 50-50 solution is required, and you then have to empty the tanks in the spring anyway. Remember that the pump pickup is above the bottom, so you will have to pump or sponge the tank dry through the clean-out port. This is a good time to wipe down the interior of the tank with a chlorine solution.

### **\* Drain the water heater**

If your water heater has an electrical element, electrically disconnect the heater before you drain it. Because the element will burn out unless submerged, attach a tag to the electrical connection to remind you to refill the tank before restoring the connection.

### **\* Drain baitwell, livewells and/or washdown pumps and hoses**

Check valves can prevent the lines from draining completely, so you may need to disconnect hoses at both ends. Baitwell tanks must, of course, be empty.

### **\* Drain or protect pumps, hoses and the accumulator**

Even though you are going to drain pumps and hoses, it is advisable to pump a 50-50 antifreeze solution through them to protect pockets or low spots that could be harboring residual water. If your boat is fitted with a water heater--now empty--bypass it (by disconnecting inlet and outlet hoses and connecting them together) so the antifreeze reaches the hot-water side of your plumbing. Water doesn't actually flow through your accumulator tank, so pumping antifreeze through the lines puts very little into the accumulator--like pouring more water into a full jug. If it doesn't drain when you remove the hoses, blow through the T connector, or dismount the tank and shake it empty.

Water pumps should be serviced and impellers should be replaced a minimum of every four years unless your owner's manual recommends sooner. NOTE: For uncomplicated water delivery configurations, draining--without the antifreeze treatment--will be adequate as long as you make sure no water remains in pumps or low spots in hoses.

### **\* Protect refrigeration and air-conditioning condensers**

Internal loops in the water passages typically prevent complete drainage, so disconnect the raw-water connection from the closed seacock and submerge it in a 50-50 antifreeze mix. Run the system to force the antifreeze through the pump and all lines. Drain.

### **\* Empty shower sumps**

Don't expect the pump to leave the shower sump dry. You will need to release the sump and pour it empty or sponge the sump dry.

### **\* Empty propane lines**

Light a burner on the galley stove--and any other gas appliances--then turn off the manual valve on the propane tank(s). When the burner(s) goes out, close it and flip the solenoid switch to off.

### **\* Remove electronics**

Spending winters in a warm, dry place prolongs the life of your electronics. Taking them off the boat also eliminates the risk of theft. Spray the open connectors with a moisture-displacing lubricant to protect the contacts from the formation of corrosion. Extract the log impeller and replace it with the plug. If you have an EPIRB, make sure it won't be activated accidentally.

### **\* Protect batteries**

If wet-cell batteries are allowed to discharge the electrolyte becomes pure water, which will freeze and ruin the battery. On small boats, bring batteries to a fully charged condition, then remove them from the boat and store in a dry, cool (not frigid) location. Wash and thoroughly dry the tops of stored batteries to reduce the potential for self-discharge. Do not leave stored batteries connected to a portable charger. Unless the charger turns off completely--few do--the batteries will suffer damage. However, stored batteries should be brought to full charge once a month, so post yourself a reminder.

If the batteries will be stored aboard because they are too heavy for convenient removal, they must be maintained in a full charge condition all winter. This requires a power connection and a charger with a "float" stage.

### **\* Scrub the exterior**

Flushing salt residue from hardware and rigging reduces the potential for corrosion, and grime left on fiberglass or painted surfaces until spring will be that much harder to remove.

**\* Touch up brightwork**

Do not leave damaged spots bare all winter.

**\* Wax fiberglass surfaces**

A light coat of soft wax will protect the fiberglass from dirt and moisture. No need to buff it until spring.

**\* Empty the bilge**

Bilge pumps typically fail to remove all water from the bilge. Any that remains will freeze. Pump and sponge the bilge completely dry.

**\* Open drain plug**

Trailerable boats should be stored with the drain plug removed and the bow elevated so precipitation that finds its way inside the boat will drain out. . Having the drain plug in the boat is not something you want done when your boat is outside on a trailer. Rainwater and melted snow will collect on the floor and the bilge and a deep freeze can result in some cracks in places you don't want cracks. Sailboats are sometimes fitted with a garboard drain plug to serve the same function when wintering ashore. Remove the plug and tag it conspicuously or attach to the steering wheel so you cannot forget to reinstall it in the spring.

**\* Close all seacocks except cockpit drains**

If the boat is hauled, lubricate and exercise the seacocks--all of them--before closing them for the winter. Out of the water an open seacock still admits moisture, frigid air, and perhaps vermin, so close them.

**\* Vacuum, clean, and polish**

Dirt and grease promote the growth of mold and mildew. Vacuum cushions, clean cabinet interiors, and damp-wipe all hard surfaces. Scrub the interior of refrigerators or ice chests with a mild chlorine solution. Place an open box of baking soda inside and leave the lid open or off.

**\* Prop up cushions**

Air circulation to all sides of cushions is essential. Better still, remove all loose cushions from the boat entirely and store them somewhere warm and dry for the winter. This also applies to other fabric items aboard, like linens, blankets, and PFDs.

**\* Open lockers and drawers and hatches**

Adequate air circulation is the best way of combating mildew. Latch-hooks can be employed to hold cabin and locker doors slightly ajar. Prop bilge access and other compartment hatches open. Hanging a mildew control bag in the cabin is a good precaution.

**Goodbye Bimini/Dodger**

For whatever reason, some recreational boaters believe because the canvas that is spread over aluminum frames can keep the sun off them on an August day, the same material is going to keep three feet of snow off the boat in December. Snow weighs more than the sun. BoatUS Insurance files are filled with reports of bent aluminum frames because owners mistakenly figured their biminis could support a week's worth of snow. While we're on the subject, the canvas that is stretched across your boat can be torn by strong winter winds. Remove the equipment that is designed to protect you from the sun.

**\* Cover**

A canvas or shrink-wrap winter cover doesn't just keep precipitation out of the boat's interior, it also protects the deck. In the winter, moisture between hardware and the deck or in minute cracks in the gel-coat repeatedly freezes, jacking the cracks wider with each cycle. Covers should be padded to prevent chafe, well secured to resist buffeting, and well ventilated to allow the circulation of air beneath the tarp.

### **Pick a Parking Place**

If your boat is going to sit outside, point the trailer tongue away from the street. This may mean some extra time when taking the boat to the ramp next season but not doing so makes it easier for someone looking for a boat on a trailer to back up and take it away within 30 seconds time. BoatUS insurance records show a trailer with personal watercraft is five times more likely to disappear from a driveway than any other kind boat on a trailer. A number of BoatUS Trailering Club Members lock their trailer at the hitch to ensure any potential getaway takes longer than originally thought.

**Remove the Removables** Take the battery inside and, if possible, store it on a slab of wood (cold concrete on a garage floor can be the same as leaving it on the boat outside). If electronics can be removed, do so. If you keep registration information onboard, take it inside for the winter.

**Inspect the Inspectables** This is the right time to take a look at expiration dates of flares as well as the charging status of the fire extinguisher. It is always better to discover out of date equipment when at home on land than when you need them or when the Coast Guard has just come alongside while on the water asking to do an inspection. While you are in this mode, bring the first aid kit inside and replace bandages that may have become wet or medical supplies that have expired.

### **The Engine**

Books have been written about how to winterize an engine. If it is an outboard, this is the time to change the lower unit oil. If you can run the engine using the garden hose as a water intake, fog the carburetor so that engine parts are coated with a protecting oil. It is here where the four most common mistakes are made when the job is to winterize a boat-and some of these may not apply to your particular boat:

- The engine block isn't drained
- Use a paper clip or similar item to open any blocked holes through which water normally drains on the leg of outboards.
- the Sea Strainer isn't drained
- Seacocks or gate valves aren't closed
- Petcocks that are used to drain water from the engine aren't inspected for possible clogging (Source the BoatUS Marine Insurance Division). If it is at all possible, take the outboard off the boat and store it in an upright position in the garage.

### **Top off the fuel tanks**

If the tanks are full (but provide room for the gas to expand), water can't appear and corrode the tank's interior. A full tank will also keep fumes minimal. Add stabilizer to keep the gasoline from losing its kick. Fuel should be stabilized only if it is fresh. There is nothing you can do to stabilize old fuel. Use the majority of the stored fuel early next season. There is no ethanol or alcohol in marine fuel. Regular gas stations can have up to 10 percent alcohol without warning you that it has any alcohol. Cars have a closed fuel system, marine engines vent to the outside.

Alcohol draws moisture out of the air. If you ran gas with ethanol or alcohol you would have to constantly adjust the carburetor to get the right air / gas ratio to run the engine. Alcohol also effects the fuel lines and other components. Newer automotive engines are designed to be able to cope with alcohol and the subsequent water that alcohol fuel attracts.

## Sailboats Have Additional Tasks

### \* Remove sails and canvas

Exposing awnings and sails to winter storms--even folded or furled--definitely shortens and too often terminates their lives.

### \* Lubricate furling systems

If your furling system requires lubrication, this is the time to do it.

### \* Service winches

If you do this in the fall, you will know that the internal components are well protected from corrosion for the winter, and the winches will be ready for service in the spring without further attention.

- Ideally, a sailboat's mast should be unstepped and stored in a shed over the winter with plenty of support along its entire length. Unstepping the mast reduces windage, which is especially helpful when the boat is stored on land. Unstepping also eliminates rig vibration, which is one source of cracked fittings, especially lower fittings, as vibration tends to travel downward. Cracked fittings are often the culprit when boats are dismasted. If you unstep the mast while its down, be sure to check the fittings for tiny cracks and signs of corrosion that could spell trouble next season.
- If the mast must be left up, relax the entire rig by loosening shrouds and stays, which should have some (but not too much) give when pressed with the palm of your hand. By keeping a record of the exact number of turns you've taken on each turnbuckle, you can quickly re-tune the rig next spring. Finally, tie off the halyards. Besides driving live-aboards crazy, slapping halyards scar the mast.
- Sails should be stowed below or taken home. Fold or roll them neatly so they'll last longer. You can also add to a sail's longevity by taking them to a sailmaker for a bath. Smaller sails can be cleaned in your own bathtub using one of the sail cleaners available.

## A Few Notes About the Trailer

- If it is possible, take the wheels off and block the hubs so they sit off the ground.
- Cover the hubs with a few thorough wraps of plastic so that moisture is kept out of the bearings and brakes.
- Take the tires inside or cover them if they will remain on the trailer (this is done because tires will begin the process called dry rot when sitting unused for long periods of time and the sun will harm a tire as well).
- Don't park the boat (and trailer) under a tree because tree limbs and leaves fall during the winter. In one case, you have a mess to clean up and in another case, you have a bigger mess to clean up. In both cases, it is something that can usually be avoided.
- Check the trailer from time to time. Do a walk-a-round and make sure nothing has shifted during the layover. This is especially important to do if your boat and trailer are stored at a marina or another area that is away from your line of sight.

For more information about boat maintenance, consult *This Old Boat* by Don Casey.

Finally, even if your boat is stored ashore, secure the wheel or tiller to keep the rudder from swinging all winter. For more information about winterizing, you can read the entire article from our sister publication *Seaworthy* (October 1993) on the BoatUS web site:

<http://www.boatus.com/seaworthy/winter/>