

ACE RECREATIONAL MARINE INSURANCE

# GOING INTO LAY-UP

IMPORTANT RECOMMENDATIONS  
FOR WINTER PREPARATION



insured.™

# GOING INTO LAY-UP

It's been a great summer of boating and now it is time to begin preparing your boat for winter. If your boat is hauled out for winter storage, here are some suggestions from ACE Recreational Marine Insurance® that will help you ensure that your vessel will be ready for safe and reliable cruising again next year.

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# BEFORE HAULOUT

## Outside the Boat

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When the boat is afloat and tied to the dock, it's easier to get on and off than it will be when she's hauled out, so now is the time to do as much of the heavy lifting as possible.

### Anchors and Canvas

Remove canvas covers, deck and cockpit cushions, extra mooring lines, fenders and anything else on deck that should go ashore for winter storage. If it's possible, tie the boat with her bow over a dock or walkway, drop the anchor on the dock and pull out all the anchor rode so you can rinse the chain and rope with fresh water. If you plan to leave the rode in the anchor locker for the winter, be sure to let everything dry thoroughly, and be sure the locker is clean and dry before re-stowing it.

### Sails and Rigging

If you have a sailboat, now is the time to remove the sails, flake them neatly on the dock and put them in their sailbags. It's a good time to give the sails a careful inspection to identify any repairs or cleaning that may need to be done by your sailmaker during the winter. Tie messenger lines to your halyards and remove them so they won't be damaged by winter weather. Even if the mast will be removed for the winter, it's easier to pull the halyards out when the mast is vertical.

It's a good idea to take all your running rigging off the boat (don't forget to reeve messenger lines) so you can inspect it all, repair any frayed ends or replace any chafed lines that you didn't repair during the season. Dacron running rigging can be cleaned by soaking in a mild detergent solution, then soaking in fresh rinse water, and drying before stowing. Nylon mooring lines can be cleaned the same way, which will rid them of abrasive salt residue and extend their service life. Check with the manufacturer before cleaning high-tech cordage like Spectra, etc.

### Unstepping the Mast

Even if you don't normally unstep the mast for winter storage, it's a good idea to do it every few years so you or your rigger can inspect all the rigging and fittings, especially the ones at the masthead. If the mast will be removed this year, straighten the cotter pins in the turnbuckles so that they can be quickly removed when the yard sets up the crane to lift the mast. Remove the mainsheet, and then remove the boom and lay it on the coachroof or side deck. Use lifejackets or cushions to pad the boom so it won't scratch the boat. Keep track of any shims that come out of the gooseneck, so that you can replace them in the spring.

Before you loosen any turnbuckles, measure the distances between the upper and lower halves of the turnbuckle bodies and write them all down. That way, you'll be able to set all the stays and shrouds at the same tension next spring, which could save a lot of time tuning the rig. Disconnect and tag the mast wiring, and remember to protect the connectors from the weather if they're on deck.

### Check Your Shore Power

If your boat is equipped with AC shore power, turn off the circuit breaker on the dock first, and then disconnect the cord from the boat. Take a close look at the boat's shore power receptacle. If you see any sign of darkening of the plastic around one of the prongs, replace the connector. You don't need to buy a whole new receptacle fitting; just replace the internal parts.

If one of the prongs in the connector in the boat's receptacle is damaged, it's possible that the corresponding clip in the end of the cord is damaged too, and it may be time for a new shore power cord as well. That receptacle, where the cord plugs into the boat, is a very common source of fire on boats. Be sure your shore power connection is in like-new condition!

### Check the Gas System

If your boat is equipped with a propane (LPG) or compressed natural gas (CNG) system, be sure the valves are turned off at the tanks. Take a close look at everything in the tank locker (tanks, regulator, pressure gauge, solenoid valve, wiring, etc.) to be sure all is properly secured and in good repair.

Be sure the vapor drain at the bottom of the locker is clear, and that every wire and hose that passes into the locker is properly sealed so any leaking gas can't get inside the boat.

Finally, since running water isn't always available in storage yards, give the boat a thorough washing before she's hauled out.

## Inside the Boat

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### Checking for Leaks

After you've washed the boat, go inside and look for deck leaks. Try to look at as much of the hull-to-deck joint as you can see, and around all the windows, hatches, portlights, chainplates and any other hull and deck penetrations. Make notes of any leaks you find, keeping in mind that water might show up inside the boat in a different place than where it's getting in from the outside. Chasing leaks can involve quite a bit of detective work, but it's an important part of maintenance. Try to have any leaks repaired right away, especially if the boat will be stored outside for the winter.

### **Gasoline Engines and Tanks**

If your boat has gasoline engines, you'll want to run the fuel levels in the tanks down as much as possible before hauling out. Since most gasoline now contains a fair amount of ethanol (alcohol), the fuel will get "stale" fairly quickly. Left untreated, this will get worse as condensation forms in the tank and mixes with the alcohol, eventually causing "phase separation" and resulting in a watery alcohol mixture in the bottom of the tank. This can cause serious engine damage. In the spring, the remaining fuel in the tanks can be treated with fuel stabilizer, and when fresh fuel is added, it will mix and dilute the small amount of stale fuel that spent the winter in the tanks.

When the boat has been delivered to the haulout site, leave the engines running and turn off the fuel supply, and let the engines run at idle until they use up all the fuel and stop running. This will purge all the gas from the fuel system, reducing the possibility of varnish forming as gasoline evaporates, which is often a problem with gasoline engines equipped with carburetors.

Another suggestion is "fogging" a gasoline engine to coat its internal parts and protect against corrosion. Fogging oil is available at most marine stores and at engine parts stores. Remove the flame arrestor before running the engine to use up the fuel. The engine will start to run "rough" and stumble just before it stops. When this happens, spray the fogging oil into the carburetor or throttle body until the engine stops. Read your engine's operating manual for more suggestions on protecting it during winter storage.

### **Diesel Engines and Tanks**

Diesel fuel is more stable than gasoline with ethanol, but it still absorbs water, and water will do serious damage to injectors. It's a good idea to fill the tanks on a diesel-powered boat before hauling out. With full tanks, there's less internal air space and less tank surface to collect condensation. Add a dose of biocide to the tanks to prevent algae growth before you top them off. Running the engine out of fuel isn't necessary with a diesel engine, and it's difficult to purge the air out of some diesel engines to get them running in the spring.

### **Winterizing Systems**

If you have harsh winter climates where you store your boat, her systems will need to be winterized. You can do a lot of these chores while the boat is in the water. Close the seacocks (except for propulsion engine cooling water intakes), and drain the strainers. Depending on the boat's layout, it may be necessary to remove hoses from generator and air conditioning pump cooling water intakes, and perhaps remove pump covers, to drain all the water out. Pump out the toilet holding tank, rinse it, and pump it dry again. You may have to remove hoses from the toilet as well.

The domestic water system should be drained, but in some cases it's not possible to drain all the water out of hoses in hidden spaces, so it may be necessary to add some non-toxic anti-freeze to the water system.

### **Protect the Batteries**

If there's a separate set of house batteries, they can be removed for winter storage before the boat is delivered to the yard for haulout. The same applies to the generator starting battery, if there is one. The engine starting batteries can be removed at the yard's service dock, just prior to haulout. Batteries are heavy, so it's easier to get them ashore while the boat is afloat rather than trying to deal with them once she's on the hard.

Storing the batteries at home will extend their life, since cold weather will cause them to self-discharge more rapidly, and once they've spent more than a few weeks in a discharged state, they can't be trusted. When you take the batteries home, store them on a dry surface in a location that's not subject to freezing temperatures, and plan to trickle-charge them for a day or two once a month through the winter. Don't forget to clean the terminals before returning them to the boat in the spring.

### **Clean Out, Clean Up**

Remove as much gear from the boat as you can, including electronics, lifejackets, binoculars, clothing, cushions, fishing gear, and anything else that could be damaged by moisture and cold weather, or that may be attractive to thieves. Clean out galley cabinets and take home extra food, spices and condiments. Dishes, pots and pans, and glassware might benefit from a trip through the dishwasher at home.

And here's a hint: the flame arrestors on gasoline engines need periodic cleaning. If they're a bit dirty, take them home and soak them in solvent or paint thinner, let them air dry, and then run them through the dishwasher on the bottom rack. They'll come out shiny and clean. You'll also want to cover the engine intakes with plastic bags when you take off the flame arrestors.

With the lockers empty and the batteries ashore, give all the stowage and bilge spaces a good cleaning. Add a bit of baking soda and wash out the battery boxes to neutralize any spilled battery acid. Use lots of fresh water and a biodegradable cleaner that's safe to pump overboard, and then use a wet-dry vacuum to suck all the remaining water out of all the interior spaces. You'll appreciate getting aboard a clean, fresh-smelling boat next spring!

# DURING THE HAULOUT



Everyone wants to get in a few more days of boating late in the season, so when the weather finally starts to turn, boatyards often get very busy hauling out and blocking boats. Sometimes it can get a bit rushed and careless. It's important that you or someone who knows the boat is actually present when the yard picks the boat out of the water. If the yard staff know ahead of time that the owner or a representative is watching, they may be more likely to handle her with care.

## **Haul Her Properly**

If the yard isn't familiar with your boat, be sure to let the yard foreman or the lift operator know where it's safe to set the straps so nothing on the bottom will be damaged. You probably won't be painting the bottom until spring, but you may want to have the bottom pressure-washed as soon as your boat is out of the water and while the slimy residue and marine growth on the bottom is still soft.

If you have a sailboat with a keel-stepped mast and your mast is coming out of the boat this fall, have the partners cover loose and the wedges out ahead of time. Protect the interior surfaces near the mast to prevent any damage if the base of the mast swings around a bit while it is being lifted. Don't forget to cover the partners once the mast is out.

As mentioned earlier, it's advisable to remove the mast from a sailboat at least every few years, so everything can be inspected thoroughly. Additionally, with the mast out of the boat, there will be less windage and surface area to collect ice during winter storms. If the mast is removed, and the rigging has to be removed before it goes into storage, be sure to tag every piece with its location. The wind vane and windspeed cups are fragile, so they should be unplugged and taken home for safekeeping. Be sure to cover the connectors to keep out moisture and spiders' nests!

## **Correct Blocking Techniques**

It's very important that your boat is blocked properly. You should know ahead of time how the yard will block your boat, and you should insist that they use proper methods and equipment. The boat's keel should be supported by solid wood blocking or sturdy wood cribbing, and her hull should be stabilized with proper tripod jackstands.

She should be blocked in a way that will allow any rainwater that may collect aboard to drain out through deck drains and scuppers. She should be supported by at least two jackstands on each side, and more than two may be needed depending on the length of the boat. Jackstands should be located where structural bulkheads meet the hull. Each leg of every jackstand should be supported by plywood or planking to keep the bases of the stands from sinking into the ground, especially if the yard surface is gravel. What may look like a solid surface in the fall could become soft during extended rainy periods. Each jackstand should be secured to the one on the opposite side of the hull by a safety chain that passes under the keel. Two very important things to remember about blocking your boat safely: No cinder blocks! No oil drums!

Any gear or equipment that could attract thieves or be damaged by the elements should be removed from your vessel, and stored ashore in a safe place.

# AFTER HAULOUT

## Outside the Boat

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Once the boat is safely blocked in the yard, grab a pencil and a clipboard and walk around the boat's bottom. Make a note of anything that needs attention.

### Inspect the Bottom

Check all through-hull fittings and scrape inside their openings. You want to be sure the bronze is bright and smooth. If any through-hulls are covered by grates, it may be necessary to remove them to get a good look. Pitting or a pink appearance can indicate corrosion problems. If the struts that support the prop shafts are painted, scrape off a bit of paint so you can inspect them. Be sure all seawater intakes are clear of obstructions.

### Through-Hulls and Zincs

Check all the through-hulls above the waterline. If there are any plastic ones, shine a flashlight into them and look closely for cracks. White plastic through-hulls are deteriorated by sunlight and they are under tension from the nuts tightened against the inside of the hull. Cracks are common and they can be a cause of sinking. Any questionable through-hulls should be replaced with marine-grade bronze or fiber-reinforced plastic.

If there are sacrificial zinc anodes attached to the hull, they should be removed prior to painting next spring. The hull under the zincs can be painted but be sure not to paint the studs to which the zincs attach. Mask the studs before painting and be sure they are bright and clean before replacing the zincs. It's important that the studs and the zinc anodes have a good electrical connection. Install fresh zinc anodes if the old ones are half depleted.

There may also be zinc anodes attached to underwater metal parts, like prop shafts, prop nuts, trim tabs, rudders, bow and stern thrusters, and outdrives. Those zincs should be removed, the surfaces to which they attach cleaned to bright, shiny metal, and the zincs replaced.

### Transducers and Running Gear

Underwater transducers for depth sounders, fish finders, and knot meters should be inspected. The faces of depth transducers should be clean and free of marine growth. Knot meter paddle wheels should turn easily and smoothly. Transducer faces can usually receive a thin coat of bottom paint. Check with their manufacturers before painting.

Check propellers for damage and straightness. A screwdriver, held tightly against the hull or against a strut, can be used as a reference. Check prop tips, and the leading and trailing edges of each blade. If you find variances of more than about 1/16 inch, have the yard remove the prop for service. Put a light coat of waterproof grease on the shaft taper and key when installing the serviced prop (hint: the narrow nut goes on first). When the clean, straight props are back on the shafts, check them again. If you still find too much variance, a prop shaft may be bent.

Check shaft bearings for wear. Try to move the shaft up and down. A small amount of movement is okay, but too much slack can mean the rubber bearing is worn out. If you're unsure, ask your yard to check them for you. Also, check the rudders by trying to move the bottom of the rudder from side to side, and up and down. Too much slack can indicate a worn bearing, shaft or support collar.

Inspect swim step supports, trim tabs, thruster grates and boarding ladders. If the ladder is telescoping and mounted under the swim step, be sure it deploys properly. Operate the trim tabs to be sure they have the proper range of motion.

### Outdrive Hints

Outdrives often have rubber bellows between the drive and the transom. Those flexible rubber bellows can be damaged by sunlight, marine growth and chemicals, and they can wear out from normal raising and lowering of the outdrive. They don't last forever. Inspect them carefully! It may be necessary to raise and lower the drive to see everything. Pay close attention to the "valleys" in the bellows, where cracks often occur. If a bellows looks less than perfect, have it replaced. Failed bellows are a major cause of sinking of outdrive-powered boats!

Run your finger along the edge of the skeg at the very bottom of the drive. If you find any oil, a seal may need to be replaced. Changing the oil in the drive would be a good idea. If the oil that's drained out is cloudy or milky, it's another sign that a seal is failing. Have bad seals replaced right away, since water in the oil can ruin expensive internal parts.

### Important Tips to Remember

If the exhaust ports in the hull are normally plugged to keep critters out, remember to insert the plugs but don't forget to remove them in the spring! If it's an open boat and the hull has a drain plug, remember to remove it so rain and melting ice and snow will drain out. In the spring, be sure that plug is in place and tightened securely! Many a boat has sunk because a drain plug was overlooked.

Visit the yard every month or so to check on your vessel, or have a friend or service personnel check on her occasionally.

### **Inside the Boat**

Keep that clipboard and pencil handy as you take care of the final chores in the boat's interior spaces. Make a note of anything that needs attention as you finish winterizing the boat's systems.

#### **Inspect All Seacocks**

You already closed most of the seacocks before haulout. Now close the seacocks for the main engines. Did all the seacocks feel smooth and easy to operate? Make a note of any that felt stiff or rough. It may be time to service or replace them.

#### **Change Engine Oil**

Engine oil always contains a bit of moisture from condensation that collects on internal surfaces when the engine cools down. That moisture can cause damage if it's left in the engine all winter. That's why it's a good idea to change the oil just before winter storage, regardless of how recently it was changed the last time. The oil filter should be changed too. Does the boat have a generator? Remember, all the things you need to do to the drive engines, you also need to do to the genset as well.

#### **Cooling Systems**

Now that you've run the engines for the last time this season, you need to drain the water from their cooling systems. Drain the seawater intake strainers and open them up for a good cleaning, and be sure all the water drains out of all the hoses between the seacock and the engine. If the seawater pump on the engine has a drain plug, remove it to drain the pump. If there's no plug, remove the pump cover. That's a good time to pull the impeller out and inspect it. If the impeller shows signs of wear, make a note to replace it. Even if it's in good shape, you might want to leave it out of the pump for the winter so the blades won't take a set.

If the engine is raw-water cooled, the entire cooling system must be drained to prevent damage from freezing. When you drain the block of a V-6 or V-8 engine, remember that there are drain plugs on both sides of the block. There are also drains on the bottoms of the exhaust manifolds. The mufflers may have drain plugs, too. Don't forget the generator!

A marine engine that's fresh-water cooled is full of coolant that should be a 50-50 mix of water and anti-freeze. Just like your car, a marine engine will need fresh coolant every few years to provide freeze and corrosion protection. If your engine is due for a coolant change, now is the time to do it. Remember that there is still some raw water in the heat exchanger and the exhaust system, and those components must be drained. Check your engine manual for the location of drain plugs and any other winterizing instructions specific to your engine.

#### **Shrink-Wrapping**

If you have arranged to have your boat shrink-wrapped for winter storage, be sure the plastic wrapping won't react with any painted surfaces. Some urethane paints and some shrink-wrap plastics aren't compatible, and a ruined paint job can be the result. Also, it's nice to know if all that plastic can be recycled in the spring when it's removed. Many shrink-wraps can now be recycled.

#### **Don't Forget Her!**

Now that all the chores are done and the boat is snug in the yard for her winter nap, don't forget her! Plan to drop by the yard every month or so to check on her. Make sure water or ice isn't collecting where it can do damage. Be sure winter covers are secure. If you spend the winter a long distance from the boat, have a friend or service person check on her occasionally. You'll enjoy next year's boating season even more when your boat is ready to go in the spring, with everything working properly.

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