Out of Their Element

Best practices for hauling, blocking, and storing boats on dry land.

Text and photographs by Steve D'Antonio

Boats, particularly keelboats, are designed to be stable in the water, not on land. Hauling and storing an average modern cruising sailboat is a highly specialized, high-stakes exercise in handling an object that measures 70′ (21.34m) or more from the bottom of the keel to the top of the mast, weighs 40 or 50 tons, and terminates on the bottom and top in narrow appendages of varying delicacy. The boats are ungainly and awkward, like the proverbial fish out of water. A good service yard can make handling them look easy, but it's not.

Most boat owners don't give the subject more than a passing thought. They deliver their boat to a boatyard or marina, leave the keys, and return in a few days to find the vessel sitting high and dry. The proper, safe execution of this task, however, requires skill, knowledge, experience, and steady nerves. When I managed a boatyard, I would tell crew that feeling a little fear when hauling, blocking, and launching a boat is a good way to stay sharp and alive. I made it clear to customers and employees that this is most definitely a realm for trained professionals. Never secure anything—tarps, lines etc.—to the jackstands or timbers that keep a vessel upright while it's ashore. If something looks amiss, or if you need a stand moved to access a through-hull fitting or other below-the-waterline hardware, ask the yard foreman or manager.

Hauling

Methods for hauling and launching boats are many and varied. The most popular, for vessels in the 25′ to 150′ (7.62m to 45.72m) range, are the sling lift (often referred to by the brand name Travelift, although there are other manufacturers), the hydraulic trailer, and the marine railway. Self-propelled mobile sling lifts have

revolutionized boatyard operations in the last 40 years, making it more efficient, safer, faster, and less costly to haul, block, and launch a boat. They range in size from 25-ton capacity up to hundreds of tons.

It may be only accidental, but their growing popularity coincided with a decrease in the number of traditional plank-on-frame wooden boats in use. Because sling lifts concentrate lifting loads, they can be detrimental to a wooden boat's structure, and some experts consider it unwise to haul a traditional plank-on-frame vessel with this method unless it is known to be structurally sound and the loads are carefully distributed among multiple slings. If you have any doubts about a wooden hull's structural integrity, explain to the owner that it must be thoroughly evaluated by an experienced shipwright or surveyor who specializes in timber vessels. If it's not something you regularly do, it's reasonable to refuse to haul wooden vessels, or to do so only with a written disclaimer against liability for damages. (For more on lifting wooden classics in slings, see Jim Moores's "Blocking Drill" in *Professional Boat-Builder* No. 142, page 18.)

Marine railways, on the other hand, have been around for centuries. A steel car, which descends into the water on a set of rails, is set up with various blocking materials—wood, steel, etc.—to support the hull. The car is attached to a land-based winch via a steel cable. Once the vessel is properly positioned over the car—because the car is underwater this is often challenging—the winch hauls it up the railway. Moving the boat off the car is another difficult, labor-intensive process, often involving greased skids, casters, wedges, and tackles. It's apparent why railways have fallen out of favor in modern yards, but they are well suited to hauling large vessels, especially wooden ones, where it is typically preferable to support most of the weight on their keels.

The submersible hydraulic trailer (SHT) blends attributes of the mobile sling lift and the marine railway. Some facilities utilize SHTs in concert with sling lifts to maximize the benefits of each. Highly maneuverable, hydraulic trailers are either self-propelled or towed by a short-wheelbase tractor. They allow boatyards and marinas to block boats close together to optimize

Left—*Self-powered hydraulic trailers are great for moving vessels around the yard, especially when storing boats as close together as possible or in low buildings.*

Facing page—*Ease of operation and reliability have made the hydraulically driven sling lift the most popular mechanism for hauling boats of all sizes. The keel of this trawler yacht having its bottom pressure-washed is appropriately blocked so the slings don't carry the full weight of the vessel while someone works under it.* ***Above—****A conventional marine railway, with a custom-blocked cradle running on steel rails and powered by a mechanical winch, remains an option for large vessels and those requiring a lot of support along the length of the keel.* ***Right—****The submersible hydraulic trailer is another versatile means for hauling and moving boats in the yard and over the road.*

valuable real estate, and their lack of sling-lift superstructure enables them to move boats into low buildings. Another benefit is not having to remove headstays when hauling larger sailboats, as might be necessary with sling lifts. Like railways, hydraulic trailers offer excellent, evenly distributed support to a variety of vessels, though they are not useful for most multihulls. From a yard operator's perspective, SHTs require more maintenance than a railway or mobile sling lift due to repeated immersions of complex mechanical equipment. The electric, hydraulic, and pneumatic control and actuation systems must be completely waterproof in submersible models. If these systems are not regularly inspected, properly maintained, and corrosion-inhibited, the trailer's systems will become unreliable and possibly dangerous.

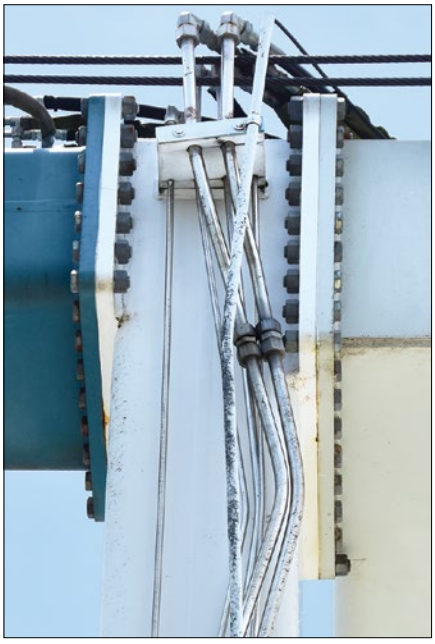
On this topic, any boat-hauling gear—sling lift, SHT, or a marine railway—requires regular, thorough, and sometimes costly maintenance. I encourage all boatyard staff to do formal, as well as casual "walk-by" visual, inspections of this gear. Training but not expertise is required to do this. Areas of particular concern include chafe or other damage to the web slings of a mobile lift. Most slings are manufactured with a red sewn-in indicator thread. When it becomes visible, the strap is ready for retirement. Also of concern are multistrand (usually galvanized) steel cables—best described as machines in themselves—employed in most submersible trailers, railways, and sling lifts. Along with their turning sheaves, all cables should be clean, well lubricated, and free of dirt, rust, and debris. The individual strands and the nonmetallic core must be free to move and must not be damaged, kinked, corroded, or broken.

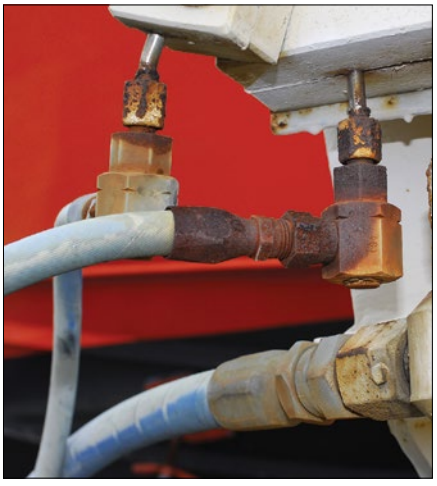
Left—*The slings on most lifts are woven with red threads that, when visible, warn when the essential gear should be replaced.* ***Right—****This sling, its steel-pinned joint, and protective cloth behind it are in good condition.*

The hydraulic trailer operated by the boatyard I managed had no fewer than 50 zerk, or grease, fittings. When the trailer is in high demand during fall hauling and spring launching seasons, these fittings should be greased several times a month with a battery-powered grease gun. Squirting a few strokes of grease into each fitting, while better than nothing, is not adequate. Instead, much like crankcase oil, the grease must be "changed" by pumping enough new grease into the fittings to displace the old, emulsified, debris-contaminated grease from the cavity. The task is messy and time-consuming, but hard-working equipment requires it.

Steel alloy equipment needs regular painting or corrosion protection. Poorly maintained equipment should

Left—*Galvanized steel cables on railways, hydraulic trailers, and sling lifts must be regularly inspected, cleaned, and lubricated.* ***Right—****With numerous moving parts, all equipped with grease fittings, submersible hydraulic trailers are particularly vulnerable to corrosion and require regular maintenance when in service.*





*The hydraulic hoses and fittings, **above left,** are well protected and maintained, while those at **left** are not. **Above center—**Hydraulic hoses and pipes on sling lifts are vulnerable to damage from unintended impacts. **Above right—**Tires on operating sling lifts should not look like this obviously worn one.*

be relatively easy to identify. If rust streaks and patches abound, it's often a sign that maintenance intervals need to be shortened. Are hydraulic hoses chafed, rusting (exposed steel braid will rust), and cracking? Are the vertical metallic hydraulic pipes kinked or bent? (Because they are exposed and vulnerable, it is a common sight on sling lifts.) Does the equipment leak oil, fuel, or hydraulic fluid? Are cables chafed, rusty, or worn? Are tires underinflated, deteriorated, or delaminating? Are operator's controls clean, rust-free, and in good working order, and not jury-rigged? Do the scales work? Controls on the machine should be covered when not in use, while remote controls should be safely stored out of the elements.

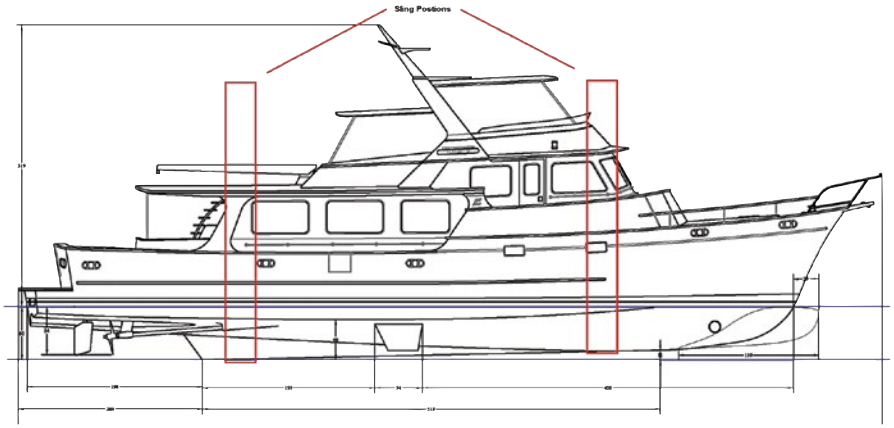
Haulout Contracts

Not long ago a client called to tell me his vessel had suffered damage during the haulout—the forward sling slipped and caught the bow pulpit, tearing it off and causing approximately $50,000 worth of damage. He was panic-stricken because he had signed a haulout contract, which he'd scrutinized only after the accident, absolving the yard of all responsibility for damages, regardless of their culpability. It seemed obvious in this case the fault was not that of the vessel owner; he provided the yard with a graving (hauling) plan, and his boat was a popular make and model. Subsequently, to the yard's credit and the boat owner's great relief, the yard took full responsibility for the damages and arranged for the repairs.

Is such a contract, or one that limits liability to a fixed and often low dollar figure (I've seen that set at $30,000), fair and reasonable, even if the yard is responsible for the damage? It's a subject worth debate, and one that no doubt would benefit from the expertise of attorneys and insurance agents. I gauge the virtue of any contract I craft by one overarching measure: would I, as a vessel's owner, be willing to sign it? In this case, absolving the yard of all responsibility, financial and otherwise, seems unreasonable, and the answer would be "no" unless I had no choice. Insisting that all vessels to be hauled, or hauled and stored, be covered by an insurance policy, up to and including a full loss, is not only sensible but also wise. *—Steve D'Antonio*

Boatbuilder Responsibilities

- Boatbuilders should provide information detailing lifting points, blocking diagrams, vessel-specific storage consideration including which hauling equipment, blocking, and storage methods are appropriate, and which are not. For example, if the keel of a boat cannot support the full weight, or if there are limits or restrictions about where blocking supports can be located, the builder should provide this information.
- Boatbuilders should indicate boat-lifting points with a label or the international mark. Vessels may be lifted by several methods. Lifting points should be determined in consideration of hull structure that can support the loads imposed during lifting, and running gear or appendages below the waterline that cannot. Identify chines, rails, deck edges, and other projections that cannot sustain the lifting loads imposed at lifting points.
- Boats intended to be handled by forklifts should be engineered and built to withstand the stresses when the boat is lifted according to the manufacturers' recommendations and hull markings. Builders should provide a diagram in the owner's manual showing profile and transom views specifying fork placement, minimum fork length, and structural support locations, as well as markings on the exterior of the boat to indicate the spacing of the forks. —*S.D'A.*



***Above**—Manufacturer's diagrams with sling locations are very helpful to service yards. **Below left**—Some builders install discrete labels on the boat itself. **Below right**—Crews should always check to prevent slings from bearing on transducers or other appendages or hardware.*

When it comes to the actual hauling, be sure boat owners understand that personnel must have access to the vessel's interior. The locations of the prop, strut, skeg, keel, transducers (especially if they are plastic), hull strainers, engine, stabilizer fins (these should be locked in the fore-and-aft position prior to haulout), bulkheads, and tankage are all critical information. On unattended vessels, inspect for excessive bilgewater accumulation that could cause the boat's center of gravity to shift during the lift, as well as adding unbalanced and unanticipated weight. Secure equipment, furniture, hatches, or gear within the boat prior to hauling. If the vessel is being worked on, it's up to the staff to ensure that the site is secured for a haulout—no precariously balanced hatches, furniture, lifting rigs, or tools. Boat owners should stow their loose personal gear and equipment but, just in case, have yard crew do a sweep to check for hazards before hauling. Bulwark, watertight, transom, and cabin doors should all be closed. If the boat will be pressure-washed, close all exterior hatches and doors.

Boat owners should provide equipment operators with the information they need to carry out a safe and successful haul—a photo, a line drawing, or even better, a graving plan of the vessel's below-the-waterline configuration. While every boat benefits from clear hauling plans of this sort, those with large expanses of glass and hull windows are especially prone to damage if not supported properly. Haul those only by following manufacturer-supplied graving plans.

Builder-specified sling marks take the guesswork out of sling placement, but they don't excuse yard personnel from performing an onboard inspection before hauling. Note that because most sling marks are designed for single slings, it's possible for one to be mistakenly placed on a shaft, transducer, or skeg while trying to follow the marks.

If lifting slings will touch a vessel's topsides (the hull above the waterline),

Left—*Slings should be covered in a clean protective sleeve to prevent damaging the hull finish.* ***Above—****On sloping or curved hulls, slings should be longitudinally lashed together to keep them from sliding out from under the hull.*

the sling material should be covered with *clean* padding or a plastic sleeve to prevent paint or gelcoat damage. But beware: this protective material can reduce the friction between strap and hull, making slippage more likely. In this case, and especially for vessels with long keels that slope steeply to the bow, lash the slings together to prevent them from sliding forward or aft, which could cause the vessel to fall. Take no chances. I've seen yards that, as a matter of course, keep slings tied together for all hauls, regardless of hull shape.

Not all rub, spray, or splash rails are designed to bear the shear and compressive loads imparted by slings. If the rails are part of the hull, molded in when the vessel was built, they are likely able to withstand this stress. If they were added later in the build or after it, if they are timber-screwed or bolted in place, or if you simply aren't certain about their structure, assume they are not designed to carry sling loads. In this case, use "sling blocks" to transfer the load from the rails to the surrounding hull. These blocks are typically made from pine covered with soft padding or carpet and are equipped with lanyards to place and secure them. Ensure that these blocks are clean—preferably freshly rinsed or supplementally padded with foam or plastic film—before placing them against any topside area. Keep them off the ground, as the padding will pick up sand or grit, which will be ground into the hull when compressed by the sling.

Hauling a boat should be calm and orderly. Excessive shouting, hand waving, and running indicate inexperience or undue haste, which lead to injury or damage. If that's how your haulouts look, review your practices and consider a training program. The equipment operator should always work with a spotter or assistant—never alone. Conversely, having too many people on the job is inefficient and disorganized. I've counted as

Clean, well-padded sling blocks, ***left,*** *protect protrusions that might not withstand the pressure of the lifting sling. Note that the block at* ***right*** *is too small to protect the rail below it.*

many as 11 staff members participating in a haulout, a waste, especially for a flat-rated task.

Working beneath a free load is dangerous and unnecessary. Even if a vessel is being hauled for only a short time—to replace a prop or install a through-hull—no one should be permitted beneath the load until it has been properly and safely supported. It can remain in slings, provided the keel rests on blocks. Before being worked on, any vessel supported above the ground by a cable or boom that lacks the lateral stability of slings should be fully supported by blocks and jackstands or a cradle. The keel should be touching the ground/blocks to relieve the machinery of the full vessel weight. This rule also applies to a vessel left in slings for an extended period or overnight, even if no one will be beneath it. Finally, no one should be aboard a vessel while it is being hauled or moved.

Blocking and Jacking

Blocking is an exercise in supporting a boat's full weight—a few thousand pounds to a hundred tons—on the relatively small footprint of the bottom of the keel. The blocking should support roughly 90% of the vessel's weight, while the jackstands accept the

Sturdy square pine blocking is the best support for a boat on the hard. Yard crews should be proficient at building a low crib of crossed timber blocks to safely support the keel at regular intervals along its length.

remainder to balance the vessel and counter wind loading. Accordingly, blocking material must be strong, compression resistant, sound, rot-free, and durable.

Though inexpensive and sometimes lighter than timber blocks, concrete blocks tend to crack, especially when exposed to repeated freeze-thaw cycles, or because of soil erosion from even moderate rain. Oil drums are not designed to support the compression loads imparted by even small power vessels, and they rust in contact with wet soil or pavement. Foam blocks are becoming popular to support small power vessels and catamarans, but foam density and UV resistance are concerns. Should a block split or crumble, the boat will almost certainly become unstable, with all the associated risks to personnel and property.

The preferred material is square section heart pine blocks, a *minimum* of

*Scavenged materials like oil drums, **left,** and tire rims, **above,** are neither reliable nor appropriate support for blocking a boat.*

Left—*Unlike this precarious tower, blocks should be stacked only two high. For more height they must be arranged in a square crib,* ***above,*** *to a maximum of 1.5 times the dimension of the base footprint. Note that the holes in these crib blocks weaken them.*

6″ thick (good for vessels up to about 40′/12.19m, and 8″/203mm stock for 41′/12.5m and up), which, if stacked higher than two, must be cribbed or stacked in twos and alternately crossed at a 90° angle log-cabin style. Timber blocks, though strong and durable, are heavy and susceptible to splitting and rot, which can set in rapidly in warm, wet climates. Yard crew should be taught to look out for and dispose of compromised blocking.

A boat should be blocked no higher than necessary to accommodate work such as bottom painting or running-gear repairs; all blocks must touch the keel; and at least three block sets should be used, spaced no more than 8′ (2.44m) apart. For every vessel, and especially for high-aspect-ratio fin keels and other less common designs, it is preferable to defer to the vessel manufacturer's graving instructions. Wooden boats benefit from closer block spacing and in some cases continuous support along the keel with a single heavy timber plank. Stack blocks in a crib to a maximum of 1.5 times the base footprint.

Purpose-made keel stands are a viable alternative to blocks. Typically, a square-base pyramid or sawhorse shape, they are made from reinforced steel and should be used only according to the manufacturer's instructions, particularly for loading. Common keel stands, sometimes called keel benches, are rated for between 20,000 lbs and 80,000 lbs (9,072 kg and 36,287 kg). Their main advantage is that they can't rot or split, so they last longer and often weigh less than their equivalent in timber blocks. They can be pulled into place

Proprietary fabricated metal keel stands are a lighter, more versatile option for blocking if you know what height is needed.

with a tag line, so personnel spend less time under a vessel that's hanging in the slings. Keel benches are available in painted and hot-dip-galvanized finishes.

Boat stands, or jackstands, are designed to support whatever the keel blocks don't, albeit a minority of the vessel's weight. Available in multiple sizes and configurations, boat stands have done for blocking and storage what sling lifts did for hauling. Still done in some locations, fully supporting a boat with blocking entails building custom timber cribbing or supports—essentially a wooden cradle for each vessel. That requires skill and experience. While off-the-shelf jackstands appear easy to use and have replaced most custom cradles, they require some crew training and experience as well.

On a windy day or during a squall or hurricane, loads on the stands may be considerably above the ideal 10% of the vessel's weight. That's why it's important to select stands of the right height and angle, properly support them, and locate them as far outboard as possible with the forward and aftermost stands within 8′ of the bow and stern. Each stored boat should have a jackstand positioned approximately every 8′ to 10′ (2.44m to 3.05m) along its length on both sides, with a *minimum* of five stands for even the smallest vessel. (Smaller powerboats might not need a bow stand.) If a sailboat's mast is to remain stepped, place an additional pair of stands adjacent to the maststep. Ideally, position the aft-most stand on a

Jackstands are easy to use, but crew must be trained to avoid unintentional point loading of the hull, as shown here.

powerboat within 1′ or 2′ (305mm to 610mm) of the transom.

With the exception of the lone bow stand, all angled stands must be equipped with chains that connect each pair of stands athwartships. This chain should be taut and attached to the stand's purpose-made slot, or lacking a slot, use a shackle. (Knotting the chain is not acceptable.) The chains prevent the opposing stands from "walking" away from the hull during cyclical loading caused by wind gusts or an oscillating mast or rigging.

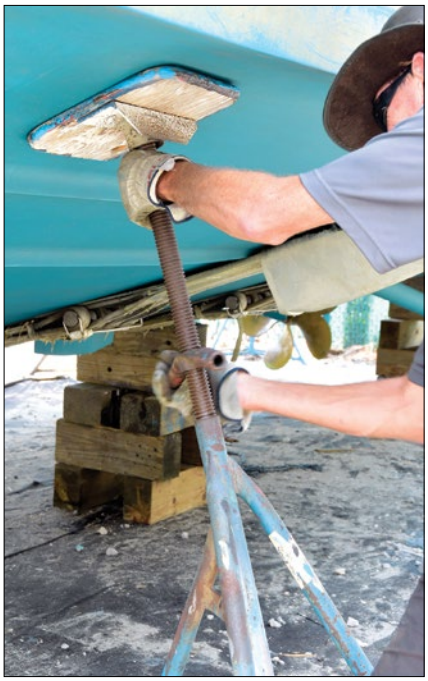
Yard crew should check stands after heavy winds or rain. Inspecting stand tension requires that the handle tension be "broken," often using an extension pipe, by slightly loosening, or turning the T-handle adjustment counterclockwise first.

Ideally, no more than 12″ (305mm) of the adjustment thread should be visible after you have placed and secured a stand. Enough thread should always remain for adjustment in either direction, but if you can see more than 12″ of thread, the stand is probably too short.

Install jackstands in opposing pairs on either side of the hull and connect them with a tight chain so they can't shift.

Most jackstand pads—the portion of the stand that bears against the hull—are plywood and should be free of rot, splintering, or other damage. The pads are often splintered by careless treatment like pushing them over when the boat is lifted. (Stands should be lifted and carried, never dragged.) The angle iron that supports the plywood pad should be oriented *parallel* to the vessel's longitudinal centerline to allow the plywood to conform to the hull shape without creating a potentially damaging hard spot.

Position the stand with its threaded shaft as nearly perpendicular to the hull surface as possible. It is sometimes



Left—*The stand should be close to perpendicular to the hull surface it supports, and the metal support on the plywood pad should parallel the vessel's keel.* ***Right—****Custom jackstands are available for boats of most any shape.*

necessary to block the two outer stand legs with a 4″ x 4″ (102mm x 102mm) timber. While this may look unusual or even unprofessional, it is correct.

The threaded shaft should be relatively free of anything more than surface rust. When these Acme threads and the head pivot are extended, lubricate them, and store idle jackstands with the threads run entirely into the tubular base to protect them from the elements.

Deep-draft fin-keel vessels require extra-tall jackstands. Some yards, unprepared for these vessels, have placed blocking *between* the jackstand head and the hull. This is incorrect and unsafe, as it can be "spit out" if the vessel shifts or rocks. Likewise, placing blocking beneath the stand in a way other than previously mentioned is undesirable and often unsafe. Invest in

Right—*Blocking wedged between the stand's plywood pad and the hull is likely to slip out of place with the first minor shift in the blocking or stand.*
Far right—*Check blocking and stands after rain and melting events that could cause running water to undercut a boat's supports.*

stands that are suitable for the boats you are storing.

Block a vessel level and trim so water will drain freely. Especially conscientious hauling crews pour water onto the deck or cockpit sole to confirm that water or ice won't accumulate and cause damage.

Stored vessels require periodic inspection and adjustment of the jacking and blocking material. Repeated freeze-thaw cycles can loosen stands and cause blocks to shift. Heavy rain or snowmelt can undermine blocking materials and jackstand bases. If the ground is soft—not paved or concrete—jackstands tend to sink or settle until the horizontal support bars touch the ground. While the resulting travel is rarely more than 1″ or 2″ (25mm or 51mm), it can cause a stand to separate from the hull, allowing the boat to rock and possibly fall over. Some yards prevent this sinking by

Above—*Especially on gravel or sandy surfaces, stands should be supported by plywood cookies under each leg to prevent settling over time.* ***Right***—*This boat is well-supported by jackstands at 8' (2.44m) intervals, cribbed blocking along the length of its keel, and a protective cover secured around it, not tied to the jackstands.*

placing small plywood squares, often called cookies, beneath the feet of each stand. If the wood is sound, this is a good practice. Cookies also keep stand bases elevated, which reduces rusting.

Finally, *never* attach winter tarps or covers to any portion of a jackstand or block. Repeated jerking and vibration from these lanyards can loosen or even remove jackstands from their position.

Above—*Sailboats with high-aspect-ratio keels often require special handling and storage on dry land, including custom cradles to effectively support them.* ***Right***—*Before being hauled, sailboats should remove their roller furling headsails to avoid rolling them while the boat is blocked ashore. In addition, to fit in the sling lift, many boats will need to drop their headstays.*

Storing Sailboats

If no road travel is involved and overhead clearances in the yard permit, it's fine to store sailboats outdoors with masts stepped, the hulls properly blocked, and all sails (including roller-furling headsails) removed. Some yards require that masts be unstepped for winter storage, a prudent measure that considerably reduces a boat's windage, making it more stable, but it's an unnecessary expense. As a rule, spars should be unstepped for thorough inspections at least every five years. Frequently the choice is left to the vessel owner. None of the yards I've worked in or managed *required* mast removal for seasonal storage. Through several hurricanes and many nor'easters, I never had a boat blown off its blocks, with or without its spars stepped.

However, reducing windage by unbending sails is still important for

Hauling and Storage Essentials

- Blocking material and jackstands must be sound and free of damage, rust, or rot.
- Place a set of jackstands every 8′ to 10′ (2.44m to 3.05m) along a vessel's hull.
- Concrete blocks, oil drums, and other similar materials are not suitable for blocking vessels.
- Remove roller-furling headsails before blocking a vessel. For long-term storage, remove all sails and canvas.
- Never leave stays detached after blocking.
- Never attach cover tie-down lanyards to jackstands.
- Because of the uniform support they offer, hydraulic trailers and railways are especially well suited to hauling wooden vessels.
- Speed kills—drive sling lifts and hydraulic trailers slowly.
- To limit damage if a strap fails, raise a vessel no higher than necessary.
- Tie slings together if there is any possibility that they'll slip on the hull contours.
- Always support the keel when people are under the boat for power-washing, surveys, repairs, etc.
- Discard split, rotted, or damaged blocks.
- Block vessels level to ensure drainage.
- Ensure that all blocks touch the keel.
- Never use fewer than three block sets.
- Crib height should not exceed 1.5 times the base footprint.
- Use a minimum of one block set every 8′.

—*S.D'A.*

stored vessels, and the timing of those measures is critical. Sails must be removed as soon as possible, preferably before hauling. In my yards, removing roller-furling headsails *before* hauling was mandatory, even for vessels out of water for one night. Never attempt to unbend sails from a vessel stored on land except in absolute dead-calm conditions, and even then, an unexpected solitary gust can lead to disaster. The windage of an unfurled sail, even unsheeted, is enough to pivot a high-and-dry vessel off its blocks.

While a stay may need to be dropped to fit a boat in the sling lift, once a vessel has been blocked, never leave stays detached. Unless the vessel is to be stored inside or for only a short time, ideally, dodgers, biminis, inflatables, rigid dinghies, paddleboards, etc. should be removed before hauling or shortly thereafter.

Launching

Whether it follows an entire winter storage season or an overnight haulout, launching requires skills and attention to detail similar to those with hauling. Some yards simply launch vessels and tow them to slips or moorings. Others provide a turnkey service, with a cost to match. Either approach is fine as long as yards make certain customers understand what to expect, so that no vital tasks are overlooked.

To prevent vessels from sinking at the dock, inspect the bilges and seacocks before and after launching. If, for instance, the do-it-yourself owner installed a replacement seacock but forgot to tighten the hose clamp, or if a mechanic removed the stuffing box packing but failed to replace it, flooding is likely to occur immediately. A thorough inspection of the bilges, looking and listening for signs of water ingress, will identify the problem and avert a sinking.

Ideally, all seacocks should be closed prior to launching. As each one is opened and each system is checked, any leakage should be immediately evident. Start by being certain the engine intake seacock is opened before starting the engine (I've seen professionals make that mistake). Once the engine is running, check that cooling water is exiting with the exhaust. Engage the other onboard systems in a similar systematic approach. PBB

About the Author: *For many years a full-service yard manager, Steve now works with boat builders and owners and others in the industry as Steve D'Antonio Marine Consulting. He is an ABYC-certified Master Technician and sits on that organization's Engine and Powertrain, Electrical, and Hull Piping Project Technical Committees. He is also technical editor of* Professional BoatBuilder.