

# Ten Top Tips of What to Look For When Buying Your Yacht'

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## Ten things to look for: Survey

Here is what I look for when inspecting the vessel:

1.      Topsides. In what condition do you find the topsides? Faded, scratched or waxed and clean. The vessel may show more neglect in other areas if the topsides are presented poorly. This is the first observation of a vessel overall and carries with it an indication of things to come. Check the stem area for signs of anchors scraping their way up to the anchor roller. Look inside the anchor well at the windlass connections that can be corroded, and accumulations of dirt and debris - also a good place to see the hull to deck joint. The Hawse pipe hole in the deck is a good place to observe the core material and or thickness.
2.      Look over all four corners of the vessel. Is she sitting on her lines? Has the boot stripe been repainted? Is the bow sprit centered or has it shifted from one side to the other. Check the stern rail for movement and straightness. Are the life lines still in good condition, or are they drooping and in need of further inspection and adjustment - remember, they do not call them life lines for aesthetics.
3.      Exhaust through hull. Is there excessive smoke sign or dirt in this area? Soot can come from leaking injectors or worse. Same with the generator exhaust. Look at the cockpit drains and connections. I find dirt has prevented proper draining of all the deck hatches. Check if one side of the vessel in better condition then the other. The sun may have faded more gelcoat, or has the owner liked docking more on port than starboard. It is easy to tell when comparing the scratches and scrapes.
4.      Deck area and Rig: Walk and bounce around the deck. Tap the base of a screw driver around the deck and listen for tight retorts, not a base drum type sound that would indicate delamination. I find the area just aft of the windlass to be suspect from strain from lifting anchors. Look for cracks and crazes around the stantion bases from hard dockings. Focus on the walking areas of the deck, especially the stay and chainplate areas. See if the deck has raised at all in these areas, indicating over tightening of the stays. The deck if raised in this area would be a difficult fix. If the chainplates are external, get up and close. I recommend getting on knee pads to examine all the lower terminations with a magnifying glass. Use bronze wool to clean these lower turnbuckles and terminations, including the fore and backstay for sighting cracks or corrosion. If the connections are swage fittings, there are probably original.
5.      Sight up the mast. Sight up the sail track. The mast should have some rake aft for upwind performance. The track should be straight otherwise. Examine the Gooseneck. Some are riveted onto the mast and separate over time. The goose neck should be stainless steel machined screwed and tapped into the mast and boom. Check all the fittings at the gooseneck for stress and corrosion. How is the mast boot at the deck, is there any compression in this area? Any signs of corrosion? Winches are normally neglected, make sure they spin freely. Check the halyards. They usually show wear at the

jam cleat, or the wire to rope splice. If the running rigging is lead aft, check for wear at the jam cleat section of the line, this is where they fail.

6. Steering station. Rotate the wheel from stop to stop. Try to observe the movement of the quadrant from below deck. Check the cable tension, cable terminations and any leaks from the rudder packing gland. Inspect the quadrant stops for signs of abuse and securing. If you have hydraulic steering, look for the ram secured to a heavy FRP lay-up and mountings. Try the shift and throttle controls for ease of movement, if not, the cables are probably frayed and worn. Where is the instrumentation clustered around the helm, is it easy to see? are there audible or just visual engine alarms? Is there an hour meter? Can you see the depth sounder, Wind speed instrument easily, even if guests are in the cockpit? How is the visibility from the helm? Is the eisinglass clear to see through or worn out and hazed? What is the condition of the Bimini top and canvas? is it weathered and worn or dirty with threads showing. Does the cockpit have good sun protection?

### **Inside the cabin:**

7. Keep organized in looking the cabin space over. Let someone know you're inside the boat and have them give you a ring or come by at a prescribed time. Or set a time for you to call them. You don't know what you're getting into. You will be in tight places with a bright flashlight. Just in case you get caught under something you can't get out of be prepared. Have your cell phone on; hopefully you can get to it. If the vessel interior is loaded with gear, get it out, all of it. Get your paper and pad ready. Your mind will think clearer and more organized with the gear removed. I generally start at the V berth and work aft. I finish with the engine space just in case I get dirty, and don't want to be cleaning the boat after the inspection is over. Most boats are liner boat construction, whereby the hull is mated with the interior hull from a separate mold. As such some inspection may be difficult if not impossible.

A note on through hulls: Through hull fittings should be sealed to the hull. Some thru hulls have backing blocks, especially if the hull is cored. The seacock should be a lever type, not a gate valve or a water spicket type. A bonding wire, a thick wire will connect all the 'through hulls' together with the engine block, and attached to a common ground along with a ground plate in the system. If the boat is out of the water, a continuity test between the 'through hulls' should be a consistent closed connection. The seacocks should open and close feely. We generally find sea cocks stiff and will need exercising. The handles and fittings should be corrosion free. I like to see wood plugs tied to every thru hull fitting to be used in an emergency and each sea cock labeled to their function. Connecting hoses below the water line are generally double clamped for security. Hoses over time will start to crack and will need replacing.

V Berth. I start with the forward most hatch area and look for signs of water intrusion. How are the hatch dogs, are they closing securely? How about the seal, is it brittle? Does the support arm keep the hatch open? Look for water stains wicking around the hatch. Are the stains from the seal, or was the hatch not closed properly? Anchor locker is next and a good place to see the hull to deck joint. Is it glassed in or fastened? You can usually

see some of the secondary bondings and tabbings in the anchor locker - are they secured? Look for loose or under laminated tabbings. Are the tabbings sticky? Perhaps the FRP was not mixed or cured properly. Use your nose and smell. Is it moldy? Any black signs of mold in the area show lack of ventilation. You can usually see the aft end of the bow sprit securing bolts and windlass base. Do they have backing plates or just washers? How are the 12VDC connections to the windlass motor, any signs of corrosion? How does the anchor chain and rode look? Any signs of corrosion? Is the three strand anchor rode frayed? How about the thimble, is there any wear on the line? Make sure the shackle looks serviceable and is safety tied. Is the standing end of the anchor rode secured to the stem? Generally this is tied on in case you're stuck in some predicament and need to cut the anchor loose if all chain anchor rode is used. Try to peer around to the aft bulkhead of the anchor locker. Tap the bulkhead with the aft end of the screwdriver and check for delaminated areas. Finally check the anchor locker doors for proper fit.

8. Remove the cushions from the V berth and inspect both sides for wear and mold. Open both halves of the V Berth and inspect the tabbings, or possibly the holding or water tanks for securing and leaks. These are the areas that you generally see how much care was put into the boat. Are the tabbings secured? Is there loose or jagged FRP showing? Use your eyes with a bright flashlight, and your nose. Cover every bit of the area with a scan. Feel the FRP tabbing and hull with your fingers. Now look up and check the headliner for stains, trim, and sagging. Generally the older boats we look at, the headliner is insulated with a foam backing, then glued into place. Over time the foam separates from the glue and sag starts. Check the 12 VDC lights in the V berth. Now turn around aft and open the hanging lockers to get a good look at the bulkhead. Get the screwdriver out and tap. Looks for signs of separation at the top. Any chain plates should be examined for corrosion and compressing the plywood bulkhead to the point where you notice a dish, or compression of the core of the bulkhead. Any leaks at the chainplates could spell big trouble. Any movement of the bulkhead is big trouble. Does the door to the V berth close evenly? If not the bulkhead may have shifted. Get into the bilge and check again for strange smells, evidence of water intrusion, and sound the base of the sole/bulkhead with the screwdriver. If there is a bilge pump, check its operation. Remember, regardless of the battery selector switch, power to the bilge pumps should always be available. The bilge pumps should be fused directly to the battery. Is there an anti siphon loop in the pump discharge? I have looked at more than one sunk boat where no anti siphon loop or non return valve was not installed and the discharge thru hull fitting was near the waterline. When the boat became just a bit heavy, the thru hull fitting let water into the boat and sank her!

We are now in the main cabin. If the mast is deck stepped, let's look at the cabin at the top of the bulkhead. If there is any sag, it means the mast is settling in the cabin top, this would be a difficult fix. If a compression post is used, look for any kind of movement. Follow the compression post or mast to the top of the keel. You will need to remove the bilge boards. Look for signs of corrosion at the mast step. Pick and prod the area. Generally there will be a collar that holds the base of the mast, check to see the bolts off this collar have not corroded. Are the wires coming out the base of the mast for the mast lights chafing at the exit? Are the wires brittle? If the keel is bolted on, look at the

threaded areas of the keel bolts and nuts. Find them all and check for signs of corrosion. Tap them with the screwdriver, a hammer is better. How much leaking has there been at the mast collar at the deck? Is the mast streaked with old water residue?

The forward cabin bulkhead should be examined for any movement at the edges. The tabbing to the hull should be sound and secured. Check the chainplates is bolted in this area for any signs of corrosion, movement or collapsed bulkhead core. Look around the cabin wall and sides. Any gel coat crazing, drooping headliner or signs of water intrusions seen at the portlights and port holes. Open and close the portholes and look at and feel the seal. Are the dog handles broken or twisted? Time to get on the cabin sole and look for signs of discoloration, which would mean at some point water was present long enough or from a partial sinking to stain the sole. Bilge boards should be fairly easy to remove for inspection. How does the bilge smell? I like to remove the cushions from the main salon and look behind them for signs of leaking or movement. Water tanks are generally located below the side berths in the main salon. Does the main bilge pump work? Get a coat hanger to test the float switch. Usually the manual pump pickup is in the main bilge. See if the screen on the end is clear of debris. Try to pump it if you can from the cockpit. Moving aft, we are now in the navigation area and galley generally located opposite one another. The navigation area generally has the AC and DC panels. Look for properly marked breakers. If you can get behind the panels, look for neat secure terminations. Wire looms over 18" need to be supported. The DC panel should have an analog or digital battery meter, master switch and accessories. . The AC panel should have a main circuit breaker, volt and amp meter. A reverse polarity indicator is required and lets you know the polarity is correct when plugging into the dock.

9. The galley area should be easy to maneuver. There should be several sea cocks in this area, check all for operation, signs of leakage and a solid hose connection. If the stove is Propane, it should have an operable solenoid switch near the stove. The switch energizes the solenoid located in the propane tank dedicated locker. A propane gas sniffer in the bilge is another good idea. Test the switch by turning on the gas at the bottle, lighting the stove with the solenoid switch on (usually illuminated) and turn the switch off - the flame should go out.

Run the 12 VDC pump at the galley sink, head and shower. Run the shower sump pump. If there is a cockpit shower head run it too. Turn off all the valves and listen for the fresh water pump to shut off.

Remove the cushions from the quarter berths and inspect below the panels, looking again with a bright light at the secondary bondings and tabbings. On most vessels, you should be able to inspect the steering quadrant. The wire rope cables ends should be neatly spliced around the thimbles, the tension strong enough to keep the sag out of the cable. Have an assistant move the rudder from stop to stop, watch when the cable and stops, looking for any signs of leakage from the rudder post and examine the packing flange for signs of corrosion. Likewise the rudder stock, usually stainless should be examined for pitting. The exhaust hose is usually in this area and should be well supported, with either a high anti siphon loop or anti siphon break.

10. The engine panels should all be removed before starting the engine inspection. Are the engine panels insulated? Do you see any signs of black smoke, or V belt chafe marks? Is the stuffing box conventional type with packing flax, or a new style dripless type? In either case, the packing should be relatively dry. A drip or two per minute is acceptable. There should be no known pitting on the shaft, especially in this area. How are the hose clamps for the packing gland, are they corroded or in good overall condition. Looking aft, can you see the strut plate for the shaft? Are the bolts secured or do you see corrosion forming? How do the engine intakes look? Check the operation of the seacocks, hoses on the raw water side of the engine. How does the coolant look, It should appear clean. Look over the heat exchanger for signs of corrosion, Is there an engine oil and transmission cooler? Check the ends for signs of verdigris. Check all the circulating hoses to the engine. Are the hot water tank hoses hooked up to your engines' heat exchanger? I usually take a small wrench and try to turn the engine mount bolts. Are the bolts corroded? Tap the engine mount longitudinal stringers with the screw driver and check for soundness. Look for any drilled holes in the stringers that could be a path for water to migrate to. Can you see the oil pan? Is it clean or lightly corroded? Look for any scum lines in the engine room for evidence of high water. Check the sides of the engine for leaks of any type. Is the Racor filter or other water separator easy to get to? Are there shut off valves to the filter? How about the top of the fuel tank, there should be shut offs there as well. Can you easily reach the engine oil dip stick? Is the oil full? It is difficult to tell how fresh the oil is by sight. Any white color to the engine or transmission oil would indicate water has migrated into the oil. How does the exhaust elbow look? Is it wrapped in insulation? Does it look corroded? Is the muffler in the system secured? I always look for white spots on the FRP muffler that would indicate a leak. All hose clamps should be double clamped in the exhaust system. How does the transmission look? Is the case corroded? How does this oil look? Transmission oil should look clean as if was just put in the unit. Look for leaks at the output flange and seal. Is the coupler safely wired? On the front of the engine how tight are the belts? Check the alternator belt for chafe and the alternator for solid wire connections. Sometimes the battery charger is located on the forward bulkhead of the engine room. Make sure the batteries are not located under the battery charger. Are the batteries secured? There should not be more then a quarter inch of movement. The positive cable should be insulated from shock. The batteries should have a battery one, two and off selector switch.

Prepare yourself for inspection with a bright flashlight, screw driver or plastic hammer. Magnifying glass pad and pencil, and lastly your cell phone. A pair of calipers, tape ruler and digital camera will be useful. Bring chalk to mark any questionable areas. Leave everything as you found it, if you change anything on the boat, tell the owner and broker what you did and document it. Give your self about three to four hours to go over the boat, and keep organized. Write down any questions or concerns as you see them to be reviewed latter. A boat is a big investment, become familiar with the boat and spend the time to know what you can do yourself, and realistic prices for upgrades and repairs to the vessel you are not capable of.

Armed with this knowledge you will be in a much better condition to make a sound decision on the purchase of your dream vessel. Nonetheless, in your own best interests I would still recommend that you employ the services of a registered marine surveyor. He has been practicing for many years, is a professional and will still see things that you would miss. In addition, it also gives you greater back up in any situation where problems may arise.

We have surveyed vessels, large and small, old and new, beautiful and ugly all over the world and have experience in all types of situations, so don't hesitate to call me if you wish. Check out my website [www.clarkemarinesurveyors.com](http://www.clarkemarinesurveyors.com) which contains all my contact details.

The best of luck in your search and I look forward to meeting you sometime, someplace on the oceans of our planet.

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