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Monthly boat checks

During a short delivery trip, I found myself cramming my not insubstantial frame upside down into an engine room to fix a problem while the boat was rolling violently and banging my head on the turbo unit. This got me thinking about putting on paper the checks we should all make pre-trip and during a cruise.

Owning own boat means that you regularly check things, make small repairs, have the boat serviced regularly and have a good idea of its history. Often, you know about little niggles and issues that may cause a problem and be ready to fix them. It's worth noting though, that if you are about to set off on our two week cruise to the Continent or West Country, you may be about to use your boat for more hours than it has clocked up during the last twelve months.

Check the Boat

The start of the season is a good time to carry out a mini survey of the vessel; something that we should do every few months to throw up any issues long before they become a problem at sea.

- The history of the boat is important.
- Where has it been based?
- How much has it been used recently?
- Has it been serviced regularly?
- How many hours has she done during the last each year?

While this may not show up any actual problems, it will tell you if the boat is in need of a professional appraisal and perhaps a lift, wash and service before setting out.

Engine hours can give a false sense of security. A boat that has only clocked up 200 hours in the last six years sounds great. 'Like a new boat' – 'Only just run-in' I hear you cry, but any delivery skipper will get the heebie-jeebies about setting out on a 20 hour trip on a vessel that has only been run for 30 hours in a whole year. Engines like to work – it keeps parts lubricated and joints and seals as they should be. I would certainly want to run the boat locally for a while before setting out to sea.

General Condition – Look around at the general condition of the boat. Start outside and look at windows, hatches and covers because spending ten hours with water dripping on your head is no fun. I did once turn up to teach on a beautiful old wooden cruiser only to find the proud new owner gaffer-taping the bottom of the wheelhouse to the deck, he said "I found some rot so I cut it out and it's left a big hole round the bottom". Well, at least he'd checked!

Is the bottom clean? A coating of green slime will slow the boat down and use a lot more fuel, decreasing range and costing more money. Weed and barnacles make this much worse.

Look also at things like aerials, light fittings and wipers. Do the cockpit drains drain water away? Are lines and fenders serviceable?

Engine Checks



Open up the engine areas and with disposable gloves, torch and rag in hand, do these checks

- Fuel – Have we got enough for the trip.
- Oil – Dip the oil and top up if necessary, be careful not to go over the full line, too much is as bad as too little. Take off the oil cap and look for white deposits that might suggest water in the oil.



- Cooling System – Most modern engines have expansion tanks for the coolant so that you can see the level at a glance. It's worth taking the cap off the heat exchanger to check there's actually coolant in the engine, a blockage in the expansion pipe can leave plenty in the bottle but none where it's needed.

- Above the Raw water seacock there's usually a sea strainer, some have clear tops meaning that we can look in to check for weed or debris without taking the thing to bits. If we can't see in we should close the seacock and remove

the top to inspect the removable basket. We need to be careful, when putting it back together, that the seal sits properly and the cap is on and tight; it may not leak at tick-over but will pour water into the bilge at high revs if it's not fitted just right.

- Gearbox oil – Check the level on the dipstick.
- Fuel System – Look for leaks and corrosion on the supply system and look at the condition of the primary and secondary filters, if they look old and corroded then they haven't been changed for some time. There may be a glass inspection bowl at the base of the primary filter, we're looking for clean diesel without dirty deposits or water at the bottom.



- Belts – Look at the condition of drive belts, are they frayed or giving off lots of black dust? Twist the belt through 90 degrees, if it goes any further it may need tightening.

- Fire Extinguishers – Are they primed and in-date.
- Connections – Take a good look at electrical, hose and pipe connections, it's usually obvious if there's a problem.
- Shaft Seals – On shaft drive boats, look at the condition of the seals round the propshaft. Do they look worn, is there evidence of leaking. On leg drive boats the drive system is all encased in the leg but look around the area where the leg goes through the transom for leaks and if possible (don't fall in) look and feel around the rubber gaiters just outboard of the back of the boat for splits or damage.
- Batteries – We're looking for corrosion on the connections, tightness of the connections and battery condition. Many modern batteries have a little indicator window which is green for good amber for poor and red for dead.
- Sea-cocks – Make sure the raw water sea-cocks are open (in some stern-drive boats the sea water comes in the leg and they don't have sea-cocks). Open

and close the sea-cock to make sure it works and check for corrosion or damage to the unit or the pipework.

- Engine Condition – A general look around the engine and the bilge for evidence of leaks is a great idea. Keeping the engine clean in the first place really helps this. We're looking for diesel, coolant, oil or any other goo that shouldn't be there. If there is any, we need to find out what it is and where it's from.
- Linkages – Throttle and gear linkages need looking at, the connections should be good and the outer cable firmly trapped in place by a little metal hoop.

Other Checks

Go round the rest of the boat and lift floor hatches, look in cupboards and find and check all the things we might need later should there be a problem. It's much easier to diagnose things when you know where things like the breaker panel or the seacocks for the toilet are.

- Seacocks and Pipework – As with the engine seacocks, check condition and open and close them. Toilet seacocks may be best kept shut on a journey and opened only when needed. A boat, bouncing about in waves can put back pressure on the system and damage the seals, at worst this could end up in 'getting one's own back', a pretty unpleasant experience!
- Bilge Pumps – Check that the electric bilge pumps all work and that the automatic float switches are functioning. Most boats also have a manual pump, as it's our last line of defence let's stick the handle in and check that too.
- Steering Gear – Usually in the back of the engine room (sorry, we should have checked while we were down there) but sometimes in a separate stern compartment, we should take a look at the steering gear. We're looking at the tops of the rudder shaft, the connections to the steering system, and general condition. We're looking for loose or worn things. With a hydraulic system, we're also looking for steering oil leaks. This is a good moment to figure out if there's an emergency tiller and where it fits onto the steering. With hydraulic systems there may also be a valve that releases the pressure in the system allowing us to steer by hand. It's much easier to locate and test this now rather than at sea. On a Stern-drive boat, the steering gear may be much harder to get to and some of the system is located outside.
- Heads – We checked the sea-cocks but it wouldn't be a bad idea to check that the loo works, turn on the sea-cocks and take the loo through its flush cycle, look for leaks and make sure the system is primed-up, loos that have been left for a while may have a couple of problems:- The system can lose its water and just pumps air or the system works but makes a terrible stink when it's flushed. Contrary to what you may be thinking, this terrible smell is caused by dead bacteria in the seawater which has sat in the intake pipe.

Flush the system a few times and it will go. Much better to do this now while we can still air the boat.

- Gas system – Because a cuppa is essential on any trip, check that the gas bottle is full and that the system is working. Shut the system down after use by shutting off the bottle, allowing the flame to go out then shutting the cooker off and shutting the gas tap. Be fanatical about this, if a bilge full of gas explodes we'll need more than gaffer tape and cable ties! It's worth checking the system for leaks while it's primed and switched off at the cooker, smear joints with fairy liquid and look for bubbles.

Start-up Checks

Start-up - and warm the engines and look at the engines while they are running, watch for vibration or leaks and listen for rattles or unusual noises. Check that cooling water is coming out of the exhausts (on a stern-drive boat watch the temperature gauges). Check that the oil pressure comes up.

- Gears - While safely tied up we should put the engines in forward and reverse to check that the gears work with ease. When going in and out of gear look at the shaft seals for signs of leakage. With stern-drives we're listening for unusual gear noises; raise and lower each leg to check the trim is working.
- Under Load – If possible, with the boat tied firmly to more than one cleat fore and aft, run the engines in gear with just a few revs on and listen and look for unusual noises and vibration.
- Electronics - Run up the electronics one by one, does the GPS get a fix? Does the radar work?
- Lights and Horn – Switch on the nav and anchor lights and check the horn works.
- Wipers – Do they work? Do they look secure? (this is one of the most regular failures on a trip and is really aggravating!).
- Dimmers – Find out how to dim the instruments; night time at sea, when you can't see out of the window because of the reflection is no time to try to find this out.
- Hatches – Are they all securely shut? (we were airing out the heads earlier!).

Spares & Tools

You need to carry some spares on board, together with a basic toolkit that includes

- sockets,
- spanners

- screwdrivers
- knife, pliers
- mole grips
- filter wrench
- electrical meter

Don't throw away your plastic water bottles. Cut down, these, make great little buckets for catching diesel and oil and the tops make really good funnels.

Spares List

- Oil, Coolant, Belts, Gearbox Oil, Steering fluid.
- Replacement Bulbs,
- Spare Impellers
- Drive Belts
- Fuel Filters - (Lots! If we need to change a fuel filter then we'll probably have to do it a few times).
- Gaffer Tape
- Cable ties
- Wide Sticking plaster - (Brilliant stuff, it sticks to most things and itself).
- Wooden Bungs – a variety of sizes.
- Cord
- Small Ratchet/Grip Straps
- Rags (lots)
- Plastic Bags
- Clear Tubing
- Hose Clips
- Self Tapping Screws (a variety of sizes)
- Assorted Nuts and Bolts
- Electrical Tape and Connectors
- Assorted Cable
- Fuses

Running Checks



Once we're underway, make regular checks around the engine spaces with the help of a torch, looking for leaks, fluid in the bilges, listening for unusual noises or vibrations and checking that no water is pumping out of the top of the sea strainer.

Check is the shaft seals for leaks, damage and also their temperature. These are usually fed with cooling water from the heat exchanger and should be cool, **BUT** should only be checked once the engine has been shut down. I've r found a great little tool for this. A laser thermometer can be pointed at things and provide a digital temperature reading from a safe distance. A hot shaft seal is going to damage itself and may start letting water into the boat. A friend of mine solved this problem by wrapping my (new) Fat Face fleece around the shaft and securing it with wooden wedges and gaffer tape. if you detect a hot shaft, shut down the engine and carry on under the second engine until you can solve the problem. Recently, we temporarily repaired a hot seal with a bit of neat DIY plumbing to get cooling water across from the opposite engine, but we did it only when the boat was safely alongside.

Keep an eye on the gauges every few minute. This is the early warning system for the two most damaging engine problems – temperature and oil pressure. The gauges often read differently to each other but each will have a 'normal' position when warm and at cruising speed. What we are looking for is change, if the temperature starts rising or the oil pressure falls, you need to shut down the engine and investigate. If not, the engine is already being damaged by the time the alarms go off

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***If you have a question about seamanship or boat maintenance, e.mail Angus at angus@seawardboat.com and he will do his best to provide the answers.**

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