

Boat Viewing Checklist

Ownership and usage

- How long have you had the boat?
- What do you know about previous ownership?
- Do you have any documents for proof of ownership?
- **Has it been kept mainly in a marine/ mooring or lots of travel? If travel how often you take it out**
- When was the boat built?
- Who is the boat manufacturer?
- Does the sale come with a mooring or chance to transfer the mooring?

Age isn't necessary the main thing, you have to think about usage. For example a boat in a marina is likely is less likely to travelled so will have less scrapes and nicks on the hull compared to a newer boat with lots of cruising. However on the hand, a boat in a marina is more likely to have neglect issues like engine not run, **water in engine bay and hull integrity (corrosion due to bad anodes and Galvanic current)**.

Springers - equivalent of a Lada- functional, cheap, and loads made.

Colecraft - Volvo

Liverpool - Ford Mondeos

Steve Hudson - BMW

Mel Davis - Mercedes

Joshers – Bentleys

Piper (dave) – Got a bit of a cult following, meant to be solid enough boats

Hull

- When was the boat last surveyed, what was the thickness and do you have the report?
- Has it been overplated, if so when and what parts? Any composition done to increase the water line?
- **When was it last blackened, with what (Bituminous or Epoxy) and do you do regularly?**
- When did it last have anodes (sacrificial) fitted, how many and does it have a Galvanic isolator (more for marina)?
- **Check where the water waste pipes, how far above water are they?**

Narrowboats are generally built using 10/6/4mm (base/side/roof) thick plating or steel. To properly know the state of the hull need to get boat out of the water and get a hull survey done. The hull minimum thickness for insurance must be 4mm (need a hull survey)

Rust is the main problem, with the most problematic areas being where the air meets the water. Is more likely to have rust and flaky paint here than would on the bottom that is always submerged (no real exposure to air).

Hull is blackend to protect from rusting with Bituminous (last 2 – 3 years) or Epoxy paint (last 5 – 6 years). Epoxy is more expensive and harder to apply. Need to be taking the boat out every 2 years to blacken and replace the anodes. Crashes scratch off blackening and exposes bare metal which will then start to rust.

Pitting corrosion is a form of extremely localized corrosion (anodes help to protect) that leads to the creation of small holes in the metal. Is as important as the overall hull thickness, pitting should be no more than 2mm as would mean you have less than 4mm hull (cant insure).

Sacrificial anodes have a higher electrochemical value than steel, which means they corrode away faster. Need to make sure are replaced when blackening, could have been neglected if stationary in a marina. Should have line of site, so 3 anodes on each side

If any of the boat is below 5mm need to really re-plate, this could be sides, bottom or just patching. Plating gives another 20 years of life. It increases the mass of the boat meaning it is lower in water, so check all waste and exhaust pipes are still 10 inches above water.

Motor

- What is the make of the motor, is it air cooled or water cooled (water cooled better)?
- What is the run time of the motor (equivalent of miles for a car)?
- Is it the original motor with the boat, **how old starter battery?**
- Has it been regularly services, when was the last time it was done?
- Is the engine run regularly?
- **Where is the exhaust pipe, should be 150mm between it and the water line (drops when over-plated)**

An engine is only as good as its maintenance record. Make sure whatever engine you choose has been well maintained.

Water-cooled diesel engines are used on newer boats while older crafts have noisier air-cooled engines or vintage models

Avoid DIY conversions of Car Engines or modern Chinese made un-branded engines.

BMC marine – Common 60's and 70s diesel (1.5 & 1.8l) water cooled engine, so have the option to heat water from it also

Lister – Common very reliable air cooled (need good venting) engine. Can be rather smokey and noisy.

Betamarine – A marinised Kubota engine which are reliable are tried and trusted on narrowboats (and cheap to run)

Isuzu marine engine - As with a lot of modern Japanese diesels, they are simple to maintain and reliable.

Vetus engines - Are great but tend to be a tad expensive on the spare parts front

Barrus shire – steady engine that seems to be in a lot of new and old boats

On the control panel you have the ignition and the dials for starter and leisure battery levels as well as fuel. To turn off the engine is normally a fuel cut off turn of button on the control panel.

If white smoke is discharged at start-up and throughout running is usually indicative of wear to the engine components.

Can get sound proofing for the engine boards, makes a massive difference to muffle sound.

Has alternator on engine to charge batteries. One to charge the starter battery and one to charge the leisure battery. In some boats can have a switch to use leisure bat to charge flat starter, if not would need jump leads.

The Stern tube assembly connects the drive of the engine to the propeller.

Engine bay

- Check if there is water or signs of (water mark) in the engine bay and around stern tube?
- Are there drainage channels (gutter) around the engine bay deck boards with drainage pipes leading outboard?
- Take pictures of the engine and engine bay to compare.
- Is there a working automatic bilge pump (like toilet float)?
- Do you keep on top of water in engine bay, mop out the bottom few inches?
- How is alternator connected to batteries, how many leisure batteries is it connected to?

Engine bay shows if boat has been well looked after or neglected. Will always get a few inches of standing water in cruisers due to rainwater and bilge pump level, but careful owners would mop that out. Need to worry about standing boats were motors aren't run and the water is left to get up to the motor and batteries.

Look for water in the engine bay and especially around the propeller (stern tube). Ideally it should be dry but if it is a cruiser is unlikely to ever be dry due to rainwater and automatic Bilge pumps (off starter battery) usually leave about an inch of water in the bottom

The Stern tube assembly connects the drive of the engine to the propeller. Have stern tube greaser to keep it free running, are water systems that also do that. Will always get some water leaking from the stern gland into the engine bay.

Electrics

- How many leisure batteries does it have, what is total size (in Ah) and how old are they?
- Does it have a battery management system to regulate the flow of current into the batteries (greater efficiency)?
- How many amp per-minutes are generated from solar panels?
- Is it possible to plug electrics into a marine mains or use a generator? How do you switchover from 240v to 12v?
- What size is the alternator
- What is the make of the inverter and what is its size?
- Do you normally off 12v and the engine to charge or at a mooring with 240v?
- Roughly how long does it take to charge the batteries to full (from running the engine)?
- Does the boat have a Galvanic isolator?

The standard on narrowboats is 3 leisure batteries coupled with 1 starter battery (so can still start engine if run down the domestics). An inverter takes 12v from your batteries and supplies 240v mains to your mains sockets. When plugged into a landline it feeds 240v to the mains sockets as well as feeding a charging current into the batteries (big feed at first switching to a slow trickle when they are full).

Try to minimise use of an inverter to an absolute minimum – try to run as much as possible on 12V power. It should be used for light duty things (like entertainment equipment) as Leisure batteries DON'T like a high current draw, avoid things that heat up as they all consume VAST amounts of power (3000W kettle (3kw) divided by 12V = 250 amps. Switch the inverter OFF when you don't need 230v as they consume power (around 2 amps typically) just sitting in idle mode.

A computer (200W), TV (200W), and microwave (800W) all running at the same time will need an inverter that delivers more than 1200W of continuous power. To find the approx amp-hours consumed by battery multiply wattage of each appliance by the hours it will run (per day) divided by 10. Inverters should have access to a battery bank that is 20 percent as large in amp-hours as the inverter size in watts. This means a 1000-watt inverter should be supported by at least 200Ah of battery capacity.

A galvanic isolator is an electronic device used to stop the boat earthing maintaining separation from other vessels and reducing any corrosion paths between boats. It offers protection from both stray currents & galvanic currents using your boat to discharge the electric which helps prevent pitting and corrosion of your props, shafts, anodes and underwater metals. Is normally an issue at marinas.

Heating and hot water

- What is stove brand, is it multi-fuel (burn coal and wood and what is its Kilowatts (kW) heat output (at least 5kw)?
- Does the stove have or capable of a Eco fan (sits on stove generating electricity from heat to drive fan to spread heat)
- Is the stove capable of a back boiler (steel tank with an inlet and outlet for radiators)? If so gravity fed or pump?
- Is the boat insulated, how do you find it in the winter?
- How do you get hot water, calorifier (does it also have emersion element) or gas boiler. How old, has it been serviced regularly?

Stove is meant to be sufficient for 40ft boats, still think could possibly have a radiator in bedroom and towel rail.

Radiators can be run off their own diesel generator rather than the engine.

Running engine for 20 mins will give enough hot water for the day (off calorifier or immersion heater).

Calorifiers (cylindrical in shape) are a useful way of recovering waste heat and transferring it into domestic water systems. Waste heat comes from the heated coolant in the engine cooling system and is mixed in the calorifier with cold water using a thermistor mixing valve to control your hot water temperature. Should also have an immersion (1KW) element so you can still get hot water if not running the engine. Not most reliable hot water source as relies on the engine having been run and the temperature of water drops off quickly as you run it.

Cold water and waste

- How big is the water tank, how long does it last, **where is it? How do you fill it?**
- Is the water tank steel or plastic (built into the hull)?
- **How many pumps do you have for the water, how old are they?**
- How many water outlets does it have, how high are they all above the water line?
- Does it have an onboard waste tank, if so how big and how long before needs emptying? What goes into the waste tank?
- Is the toilet cassette or go into the waste?
- **How does toilet work, empty the cassette and fill the water for the flush on them?**

Easier to use a cassette toilet rather than it going into a waste tank each time. Get spare cassettes and lot easier. Shower and sink waste goes into the canal. Can have a little simple bilge pump for the shower waste

Layout

Reverse layout is the style I prefer with the bedroom at the bow (front). The only problems is windows and doors, don't really want big windows at the bow as don't want too much light where I sleep. Similarly don't want port windows at the stern (back) where bed is in traditional setup as will make the kitchen dark.

Ideal setup would be from the stern the kitchen, living room (with fire), bathroom and then bedroom. Only problem is the smaller window for the bathroom is normally nearer the stern (where I want living room).

Seen some really good bathroom setouts where it is either side but when doors open takes the whole passage. Really good use of space.

Can you change window size, how much hassle??? Can you move waste outlets, how much hassle???

Storage is key, under bed storage works well as so much space. Could have bed on a good hinge to make it easily accessible?

Need to think about balancing the boat, so not overload a side. The ballast is basically bricks in the hull that balances the boat to stop it tipping. If you have the hull overplated should remove some of ballast to stop it being too low in water

BSS, canal rescue, moorings and services

- Does it have a BSS, when does it run out
- Has much been done to the boat since got the BSS?
- Was the stove and gas fitted when the BSS was done (is probably a big safety thing in BSS)
- Is the gas covered by the BSS and is it serviced regularly?
- Is the boat fully comp insured?
- Does the boat come with a mooring, if so how much, what type of mooring and what facilities come with it?

They last for 4 years from when issued so have to be wary of what work has been done on the boat since issues

The Certificate only covers some and not all aspects of safety. Areas not covered include hull condition, boat stability and engine condition

River Canal rescue is a membership based organisation that offers assistance 24/7 for an annual fee of at least £65. Replacement parts cover protects you against the cost of the failure of Specified parts. Boat in Brentford mentioned had used for alternator failure.

<https://www.rivercanalrescue.co.uk>

The canal and river trust has details of all the waterpoints and services such as repair places along the canal

<https://canalrivertrust.org.uk>

There are 3 different types of moorings (Premium, Standard and Basic) with the difference being the facilities and whether it is residential or leisure (cant be your primary residential home). The canal rivertrust part runs the moorings (take half the money, can see availability and bid or buy (some are by auction). **Looks to be some available, but need to check when planning on buying a boat with none.**

Buying

- Only pay deposit to broker, not to private buyer unless get contract.
- If contract check small print regards obligation to buy based on survey result
- How do I know you own the boat, any proof of purchase?
- Can I have a Bill of Sale
- Are you ok with me getting a survey or are you looking to sell quick without one?

If you're not purchasing from a reputable boat broker, make sure that the person selling the boat is the lawful owner and that there's no finance lender with a stake in the vessel. Ask the vendor for a legal Bill of Sale using the Government's recommended pro forma.

<https://www.gov.uk/government/publications/bill-of-sale-msf-4705>

Survey

The process is as follows:

- I arrange date for the boat to be lifted out of the water and surveyor to visit
- Ask the seller or google for local boatyards, can cost 250 to 600 depending on if have own crane
- As I am in charge of the survey should go with the seller to get the survey done
- Depending on when was last blacked (over a year blackening already coming off) may need to scrap blacking off when do tests
- They have testers that go through bitchumen, although need to scrap off if think issues below
- Takes about half a day with the craning out, etc
- Will normally get the result within a few days
- At least a few weeks wait maybe longer for survey slots

Found 2 that have spoken two, both recommended and seem good

Michael Clarke: 07944 856 351 £545

<http://northernstarmarine.co.uk/surveys.html>

Justin @ JB Marine 07903 945196

<https://jgmarinesurveys.co.uk/narrowboat-surveys>

A good read on the process

<http://boatsurveyor.org/the-survey-process/>

Full Survey (£500 - £600): A narrow boat that requires a full survey will need to be out of the water so that ultrasonic measurement of the hull can take place. This enables the surveyor to measure the thickness of the steel and check for damage and pitting.

Weedhatch assembly

Cabin fabrication, condition and fixtures

Stern gear/propulsion and rudder assemblies

Engine and gearbox condition and installation

Plumbing; domestic water and heating systems

Water tank/ toilet tanks Fit out, linings and vessel interior.

Insulation

External coatings

Cratch and fore and aft covers.

Windows and portholes

Decks and deck boards

Ventilation

12v and 240 system

Gas system

Hull Survey (£300 - £400): Only check the hull area looking at the quality and thickness of the steel. Will not check any other areas of boat.

Hull for cruising damage and build quality.

Hull plate thickness particularly at vulnerable areas

Hull plate condition and weld patterns to the base plate, counter floor and hull sides.

Pitting depth and quantity

Hull outlets, freeboard and hull penetrations

Weedhatch assembly

Cabin fabrication, condition and fixtures

Hull internal

Stern gear/propulsion and rudder assemblies

Internal Survey (£150): Only check the boat for boat safety items, but can be asked to comment on the engine and stern gear if required.

Fuel systems

Electrical systems

Propulsion

Firefighting equipment

LPG system

Appliances and flues

Ventilation

Pollution prevention