BRITISH MARINE
LEADING THE INDUSTRY

Twenty-fourth Edition

GUIDE TO INLAND BOATING

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British Marine Inland Boatbuilding is an association of British Marine.

BRITISH MARINE INLAND BOATBUILDING

Way back in 1989, when this Association was formed, it was decided that it would be useful for a guide to be published giving information and advice about buying a narrowboat. This first guide was three pages long! We're now in our 24th edition and you'll see that the guide has grown, to give comprehensive detail on all aspects of inland waterway boating.

In the first guide there was mention of the 'Certificate of Compliance', a check by surveyors to confirm the boat was built to the required standards, which was just the start of increased regulation and build requirements. This Certificate is now the Boat Safety Scheme's BSS Certificate and the late 1990s saw the introduction of the Recreational Craft Directive, setting minimum requirements for new craft. This Directive is now in its third form and encompasses changes to existing craft as well as new. These important requirements assist you, as a boat buyer and owner, in providing confidence that your boat meets minimum safety levels.

British Marine Inland Boatbuilding has been involved with forming these requirements, from members' vast experience with boatbuilding. The Association is made up of those involved with boatbuilding and allied services for the UK inland waterways, with many expanding their net to cover other markets.

Members' activities cover many aspects of boatbuilding, so even after you've bought your boat, remember that there are members who can assist you with such as boat painting, chandlery, insurance, surveys and much more!

British Marine Inland Boatbuilding is an Association of British Marine and so all members are therefore members of British Marine and adhere to a Code of Practice, giving you some assurance that they are carrying out business in accordance with best practice and legal standards.

We're a cheerful lot and will be happy to talk about boats and boating. So give us, or our members, a call – we're happy to help.

Also, don't forget, linked to the guide is our useful website at **www.inland-boatbuilding.co.uk**, where you'll find details of all current members and what they can do for you. Certainly back in 1989, they would not have been thinking about websites!

Paul Smith
Chairman, British Marine Inland Boatbuilding

BRITISH MARINE
INLAND BOATBUILDING

Contents

Photo: Georgie Clarke Photography
Cover image: Tristar Boats

BRITAIN'S WATERWAYS

There are now some 3,000 miles of connected waterway available to the cruising owner.

The waterway system is made up from a mix of broad canals, narrow canals and navigable rivers extending from Guildford deep in the south east to Skipton on the Yorkshire moors, and westward to Bath and Bristol. Our map clearly shows the extent of the system and an indication of the maximum craft beam for good measure.

Locks are, of course, used to raise or lower boats between levels – in effect to take boats 'up and down the hills'. Since water is drained from a higher pound (the section between locks) and has to be replaced every time a lock is used, early canal engineers tried to remain on the same level for as long as possible.

In many places they were able to work around the contours of the land, not only building fewer locks (and saving money) but also minimising the problems of water supply to the highest levels. For us the result is a delightful legacy of 'contour' canals, which connect major industrial centres, but wind through the rural countryside between.

As engineers became more skilled, the canals got straighter and faster. Locks were grouped into 'flights', and tunnels driven through hills.

NARROW CANALS

Early canal engineers mostly chose to build locks which were 7ft (2.13m) wide and would accept the typical 72ft (21.9m) working boat of the day.

The boats fitted snugly into the locks as you can see and soon became known as narrowboats, which is still the term we use today – even though the boats are now a couple of inches narrower. Mostly they were worked horse-drawn in the early days, and decorated in ways we now find traditional.

THE BROAD WATERWAYS

Where the landscape was more accommodating, or the engineers more ambitious, locks were sometimes built broader. Fourteen feet was a common width, so the locks could fit either one 'wide beam' boat ('beam' means width) or two narrowboats.

Though this was particularly common for navigations based on natural rivers, or those which joined them, there were 'canal motorways' too: most of the Grand Union Canal between London and Birmingham is built to the broad standard, and its engineers did not hesitate to work over (or through!) steep hills.

Grand Union Canal, Stoke Bruerne

THE SIZE OF YOUR BOAT

When choosing a boat, you need to consider the size of the locks you want to navigate through.

A modern narrowboat will have access to the whole system if it is no longer than 57ft 6in (17.62m), and not too high (to fit under low bridges). Many locks on the canal network are capable of taking a boat up to 72ft in length, but some locks are shorter, particularly in Yorkshire. Clever interior design can make a lovely cruising boat or home afloat within this compact space.

A wide beam boat can provide a home afloat with spacious accommodation, but is restricted to the wider waterways. Consider one if you want to cruise only on the broad waterways, particularly the major rivers with their deeper water and wider locks, or you plan to cruise extensively on Continental waterways.

In the south, the best known waterways for wide-beam boats are the Grand Union Canal travelling north from London, the River Thames and the Kennet & Avon canal linking the Thames to the Severn. 12ft 6in beam (3.85m) is the maximum recommended for these more restricted wide beam canals, although wider is possible. Draught on these southern canals should be no more than 3ft. If your boat will have a wheelhouse, make sure it can be easily raised and lowered: you will have to travel with it lowered on some of these canals.

There is unfortunately, no wide beam link from south to north. You cannot get a wide beam boat from the Trent to the Thames, save by sea or transhipment. But when you're in the north, or Scotland or Ireland, the canals are usually larger and deeper; those in the North-East are still used commercially. The Leeds & Liverpool Canal is a famous and picturesque link from east to west.

British Marine Inland Boatbuilding members build narrowboats in both traditional and modern styles, and a growing number also build wide beam boats. They provide a finished boat to a high standard, drawing on a lot of experience with owners up and down the system.

Most boats intended for the waterways are built in steel, or sometimes in aluminium or fibreglass. Several British Marine Inland Boatbuilding members will provide you with a shell, often with an engine ready fitted – a 'sailaway' – so that you can fit out the interior to your own design and in your own time, or take it to a specialised fitter.

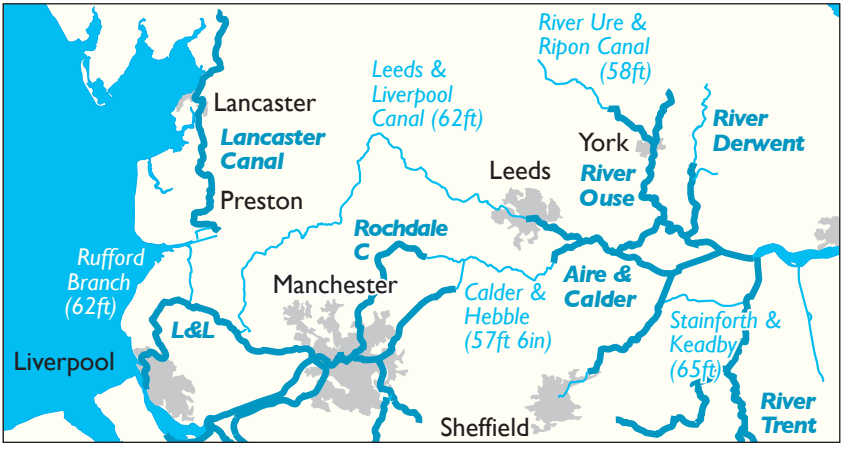

MAP OF THE WATERWAYS
Kendal
Lancaster Canal
Tewitfield
Carnforth
Lancaster
Galgate
Garstang
Leeds & Liverpool Canal
Preston
Ribble Link
Burnley
Skipton
Leeds & Liverpool Canal
Bradford
Leeds
Ripon
Ripon Canal
River Ure
York
River Ouse
Selby
River Derwent
Pocklington
Beverley
River Hull
Hull
River Ouse
Goole
Rochdale Canal
Calder & Hebble
Halifax
Dewsbury
Castleford
Aire & Calder
Huddersfield
Huddersfield Narrow Canal
Manchester
Stalybridge
Ashton
Wigan
Liverpool
Warrington
Runcorn
Marple
Peak Forest Canal
Bridgewater Canal
Whaley Bridge
Ellesmere Port
Northwich
Chester
River Weaver
Trent & Mersey Canal
Macclesfield
Macclesfield Canal
Congleton
River Dee
Doncaster
Sheffield & South Yorks Navigation
Rotherham
Sheffield
River Trent
Gainsboro'
Chesterfield Canal
Worksop
Retford
Chesterfield
Brigg
River Ancholme
Fossdyke Navigation
Lincoln
River Witham
Witham Navigable Drains
River Trent
Newark
Boston
Leek
Caldon Canal
Froghall
Alsager
Stoke-on-Trent
Llangollen
Llangollen Canal
Welsh Frankton
Maesbury
Arddleen
Montgomery Canal
Welshpool
Berriew
Newtown
Market Drayton
Shropshire Union Canal
Stafford
Great Haywood
Trent & Mersey Canal
Erewash Canal
Langley Mill
Derby
Long Eaton
Nottingham
Grantham Canal
Grantham
River Soar
Loughboro'
Burton
Lichfield
Measham
Coventry Canal
Ashby Canal
Leicester
Birmingham Canal Navigations
Staffs & Worcs Canal
Birmingham
Nuneaton
Hinckley
Oxford Canal
Coventry
Grand Union Canal
Rugby
Kidderminster
Stourport
Droitwich
Stratford Canal
River Severn
Worcester & B'ham Canal
Warwick
Worcester
Stratford
River Avon
Evesham
Braunston
Market Harboro'
Grand Union Leicester Line
Wellingboro'
Northampton
River Glen
River Welland
King's Lynn
River Nene
Wisbech
River Great Ouse
Peterborough
River Nene
Middle Level
Huntingdon
River Lark
St Neots
River Great Ouse
River Cam
Cambridge
Bedford
Hereford
Upton
Tewkesbury
River Severn
Brecon
Monmouthshire & Brecon Canal
Abergavenny
Llangynidr
River Wye
Gloucester
Monmouth
Cwmbran
Crumlin
Chepstow
Newport
Gloucester & Sharpness Canal
Stroud
Sharpness
Cirencester
Lechlade
Cotswold Canals
Swindon
River Thames
Abingdon
Banbury
Oxford Canal
Oxford
Milton Keynes
Grand Union Canal
Aylesbury
Bristol
River Avon
Bath
Wilts & Berks Canal
Devizes
Kennet & Avon Canal
Newbury
Reading
River Thames
Marlow
Slough
Grand Union Canal
Regent's Canal
Hertford
Bishop's Stortford
River Stort
Harlow
River Lee
Waltham Abbey
Tottenham
Stratford
River Thames
London
Weybridge
Basingstoke Canal
River Wey
Guildford
Aldershot
Godalming
Wey & Arun Canal
Strood
River Medway
Tonbridge
Bridgwater
Bridgwater & Taunton
River Parrett
Taunton

WIDE BEAM WATERWAYS

This map shows the waterways of England and Wales and an indication of the maximum craft beam. Three narrow canals prevent wide beam boats from navigating between Britain's major waterway systems:

A – Southern Stratford Canal: blocks passage between the Severn/Avon and the Grand Union
B – Grand Union Leicester Summit: blocks passage between the Trent/Soar and the Grand Union
C – Grand Union Northampton Arm: blocks passage between the Nene/Ouse and the Grand Union

A few waterways (notably the upper Great Ouse and northern Shropshire Union) can be navigated in a boat slightly wider than a narrowboat. Bear in mind that the channel in the upper reaches of nominally wide canals may not be dredged well enough to allow two wide boats to pass.

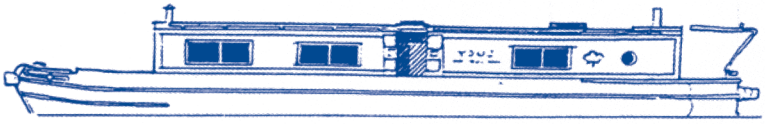


SHORT LOCKS

This map shows the waterways of Yorkshire and the Pennines where boat length is limited by short locks. A 57ft 6in boat will be able to cruise almost anywhere; a 60ft boat can navigate with extreme care by positioning it diagonally in the locks of the Calder & Hebble, and passing through locks backwards if necessary, but this is only recommended for the experienced boater.

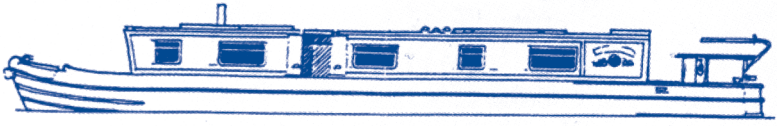
A very small number of little-used navigations in East Anglia have shorter locks, as do some isolated waterways, but these are unlikely to be relevant.

VARIOUS STYLES IN PROFILE

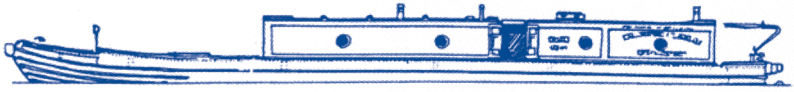


Trad-style with short aft deck that only gives room for one person normally. The engine room can be immediately ahead of the deck, as in this boat, or ahead of the aft cabin.

A semi-trad style, with open cockpit aft above the engine room.



Cruiser-style, with a long aft deck, with rails around it, and the engine beneath. This style originated with hire boats but is still popular with private owners.



Tug-style. The long fore-deck is usually completely decked over, with steel plating grooved to simulate wood planking. The space underneath cannot be used for much storage.

Inspection-launch-style, with large saloon windows, and the roof extending over a long forward cockpit. It can have a variety of aft deck arrangements, and a second steering position forward.

Dutch-barge style. Here you have fully-enclosed wheelhouse aft, plus sometimes a cabin behind this, or an open deck. The wheelhouse dismantles to go under low bridges.

Drawings courtesy of Andy Burnett

NARROWBOAT STYLES

In modern canal boats we have the opportunity to reflect the best of the narrowboat tradition, drawing on the design and decoration of the original working boat, but bringing the whole completely up-to-date.

Designs have now settled down into three main styles: traditional, semi-traditional and cruiser. Let's start by looking at the outside of a narrowboat – the craft you will choose if you want to explore the entire network.

'Aft' and 'stern' both mean the back of the boat; 'fore', 'bow' and even 'stem' mean the front.

TRADITIONAL STYLE (SHORT AFT DECK)

The traditional stern looks most similar to that of the original working boats, hence its name. Here, the cabin is taken as far aft (back) as possible, as it was in the original – giving the opportunity for a 'real' boatman's cabin.

This leaves just a short rear deck. The helmsman steers the boat by standing safely in the hatchway of the aft cabin.

The minimum length of the rear deck will be about 3ft (1m). Increasing this to 3ft 6in (1.07m) or 4ft gives more room to manoeuvre, but realistically there is room for only one person at the helm whilst the boat is underway. The rest of the crew disappears to the other end of the boat, and hand signals are needed at tea time! On the plus side the helmsman is well protected from the wind and rain, and may be warmed by a stove in the boatman's cabin by his feet.

The engine can be hidden away in the aft cabin, or on show in its own room: either immediately forward of the aft deck or forward of a boatman's cabin.

CRUISER STERN (PLENTY OF OPEN SPACE)

A cruiser stern is designed to create maximum space aft. Here, the aft deck is 8ft long (2.5m) or more, completely open, with the engine underneath the deck. Rails are usually fitted around the stern and sides for safety, and these can even be netted to keep children and pets on board.

Seats can be fitted on top of the rails, or you can bring out folding chairs when you're moored. Drain channels around the floor-boards help to reduce the rain which gets into the under-deck engine compartment.

SEMI-TRADITIONAL STERN (OPEN SPACE WITH A TRADITIONAL FEEL)

The semi-traditional design combines the look of a traditional stern with the space of a cruiser stern – by having sides but no roof.

Narrowbeam Dutch Barge. *Photo courtesy of ABNB*

Differing styles of stern: Semi trad style (left) and Trad style (above). *Photos courtesy of ABNB*

From a distance or from the side, the boat retains its traditional look; but the aft cabin has been moved forward and the cabin top cut away, giving room for several people. The sides carried back imitate the traditional aft cabin, and the engine will be under your feet.The space created has room for side benches with lockers underneath and stowage for mooring ropes and pins.

There is now space for the whole of the family to be together at the 'driver's end' and in bad weather they will be sheltered from the wind. A canvas cover is often fitted over the aft cockpit when the boat is not in use.

SEMI-CRUISER

This hybrid combines the space of a cruiser deck with some of the shelter provided by a semi-trad deck, by having the cabin sides extended to only the forward section of a long cruiser aft deck.

AND AT THE FRONT?

Though the main difference is at the stern, bow designs vary too.

A roll-up canopy can be rigged for evenings or wet weather and fastened to the cratch – the wooden structure which once supported the cargo covers. The canopy may incorporate flexible windows and so provide an extension to the cabin space in wet weather. Some builders make the cockpit 6ft (1.87m) long – enough to sleep visitors or children, and for al fresco eating.

'Tug-style' is a very traditional look with a long, open deck at the front. Sometimes the space underneath is used for storage accommodation or even a bed.

The shape of the bows varies greatly, and each builder has their trademark style. The Josher style is particularly popular, echoing the famous working boats of Fellows, Morton & Clayton: the name comes from Joshua Fellows. This has a more pointed 'nose' with a slight S-shaped sweep to the bows.

WIDE BEAM BOATS

Wide beam boats have grown in popularity in recent years as an alternative to Narrowboats. They certainly have more useful, usable space: the larger examples have an interior floor area akin to a medium-sized flat or small house.

They cannot go everywhere that a narrowboat can, but there are substantial stretches of broad waterway in this country which suit them – particularly the major rivers and some of the broader canals. They are also suited to the Continental waterways, and a craft designed to the right specification will be able to cross the Channel. There are fewer size restrictions on waterways in mainland Europe but If you plan to visit vessels which are over 20m long must meet The Technical Requirements for Inland Waterways Vessels (TRIWV) directive. Similar to the RCD this directive is intended to harmonise all the EU countries regulations for inland waterways vessels over 20 metres long. Vessels that operate only on UK inland waterways will be exempt from the Directive, provided they comply with applicable UK technical and safety requirements. However, vessels that operate on the Community waterways of European Union Member States in mainland Europe will be subject to the technical requirements laid down in the Directive. To go to sea for any length of time, or to do coastal work, your boat should be built to RCD (Recreational Craft Directive) category C or even B. You should be extensively prepared for the trip, and steel boats spending any time in a sea environment should have a sea boat paint plan to avoid problems later.

Inside a widebeam boat
Photo courtesy of ABNB

Inside a Narrowbeam Dutch barge
Photo courtesy of ABNB

Designs abound. Narrowboat-style wide boats, sometimes known simply as 'wide beams', have the utilitarian style of a narrowboat but greater floorspace. Replicas of traditional Continental styles, particularly Dutch barges, are popular and widely made in the UK; conversions of original craft exist, too. Plus there are motor yachts with a barge pedigree, Thames barges and many more. Several British Marine Inland Boatbuilding members can offer new builds to various stages of completion from steelwork only, through sail-away stage, to fully fitted. They will be happy to discuss your ideas and give you more information.

If you are new to navigating these larger craft then we recommend that you should attend one of the several training courses which are available both here and on the Continent – particularly since you need an International Certificate of Competence (ICC) to navigate on Continental waterways. The RYA's dedicated training Department has more information.

FIT-OUT

The interior layout of the modern canal boat has settled down into tried and tested designs, immensely popular because they suit the typical lifestyle of canal boaters.

NARROWBOAT LAYOUT

In a narrowboat, the living area is long and narrow; so the interior accommodation tends to be divided into sections, one behind the other. Once, the layout was invariably (from bow to stern) saloon, then galley, bathroom, and bedroom. If anything, though, the reverse layout is now just as popular, particularly with semi-trad and cruiser-style boats.

These layouts have evolved thanks to much experience and feedback from owners. You may of course have your own ideas – but remember that these designs are popular for a reason!

WIDE BEAM LAYOUT

A wide beam boat has much more layout flexibility – but even then, some designs recur.

Photo courtesy of ABNB

Dutch barges often have wheelhouses, and these can either be near the stern – with all accommodation ahead of this – or towards the centre. If the latter, the galley, saloon, bathroom and (often) a fore-cabin will be ahead of the wheelhouse. There is a smaller cabin aft of the wheelhouse, usually a bedroom with en suite bathroom.

In a wide beam canal boat, though the layout can be exactly the same as the narrow beam equivalent, there is much more scope for variation. The design will often seek to avoid the 'corridor effect' common in narrowboats.

GALLEY

The galley is the boat's kitchen, commonly with a hob, grill and oven. These are normally run from LPG gas cylinders stored in a dedicated locker. If fitting these they must have flame supervision devices and they should be suitable for use on a boat.

Gas-free boats can also be found, with cooking appliances run by diesel or electric. Diesel appliances require a fuel supply, from the engine tank or a separate dedicated tank. They can be hobs, ovens or Aga-style ranges that also provide cabin heating. Electric hobs, grills & ovens need a substantial power supply and so a generator or inverter with a large battery bank may be needed.

Microwave ovens are also common, and can usually be run from the boat's batteries via an inverter.

There will be an electric fridge, usually run from the boat's batteries, and possibly a freezer. Gas fridges were once common, but they are now required to be 'room-sealed' (venting outside) and the only such model is no longer produced. Caravan fridges are not suitable for fitting in any craft due to their ventilation requirements.

You will also find kitchen work surfaces, with attractive cupboards and well planned storage areas. There is a real art to making the most of the space available – especially on a narrowboat.

SALOON

The saloon is the 'day' area, equivalent to your lounge. It is equipped with seating, occasional tables and chairs and cabinets for TV and radio. There will often be a room heater in one corner, set in a tiled surround.

Seating is sometimes built-in, or the space may be left open-plan so that the owner can put in loose furniture. Several companies now build furniture specifically for boats, often smaller in scale than at home but no less comfortable.

BATHROOM

The bathroom will include a washbasin, shower or small bath, and a toilet.

Showers are similar to those at home and can have curtains or an enclosure with a door. Smaller baths are useful for narrowboats, but domestic baths can be fitted in the larger space in wide beam craft. Shower mixers can be the domestic type, or there are a number of simpler mixer valve units from which to choose.

For the toilet, the main distinction is between those which use a built-in holding tank, and portable units. A holding tank has to be pumped out at intervals from a deck fitting. Toilets for these are often close in appearance to domestic toilets. Some models also macerate and pump the waste into the tank.

Portable units, such as the Porta-Potti, have a removable waste tank which can be closed and carried like a suitcase to a disposal point. Cassette toilets have a permanently installed body and seat, but the waste tank withdraws via an access door. These are easier and cheaper to empty than built-in holding tanks, and many 'live-aboard' boaters prefer them:

Photo courtesy of ABNB

there is no need to move the boat to a pump-out station every few days. Spare cassettes kept on board ensure one need never get caught short!

BEDROOM

Boats may have up to 12 berths, and the owners will usually choose a double bed.

This can be placed lengthways or crossways. On a narrowboat, a crossways bed could stop access through the boat, so a lift-out or fold-up section is included to preserve access through the cabin. This does, of course, need making up each night.

The beds are every bit as good as at home with proper mattresses. Most bedrooms have wardrobes, dressing tables, mirrors, reading lights and somewhere for the TV and radio speakers. Just as at home, larger boats even have en suite facilities.

Smaller cabins may have single or bunk berths. Living accommodation (bench-type sofas or dinettes) can sometimes be converted to a bed, giving extra flexibility for when guests stay over.

HOT AND COLD WATER ON TAP

Every canal boat has hot and cold running water. Water storage tanks have sufficient capacity for a few days, and water fill-up points are widespread through the system.

Hot water can be produced in a number of ways. If your engine is water-cooled, then the waste heat produced when the engine is running can be used as a heat source. If you have a central heating boiler, this, too, can be used. The tank can also have an electric immersion heater, but this is usable only if the boat has an on-board generator or is connected to electricity 'on shore'.

The water is stored in a tank called a calorifier. Calorifiers can typically hold 10 to 15 gallons of piping hot water, and are foam-insulated to keep the contents hot for several hours. Larger units are often fitted in wide beam craft where more room is available.

INTERIOR DECORATION

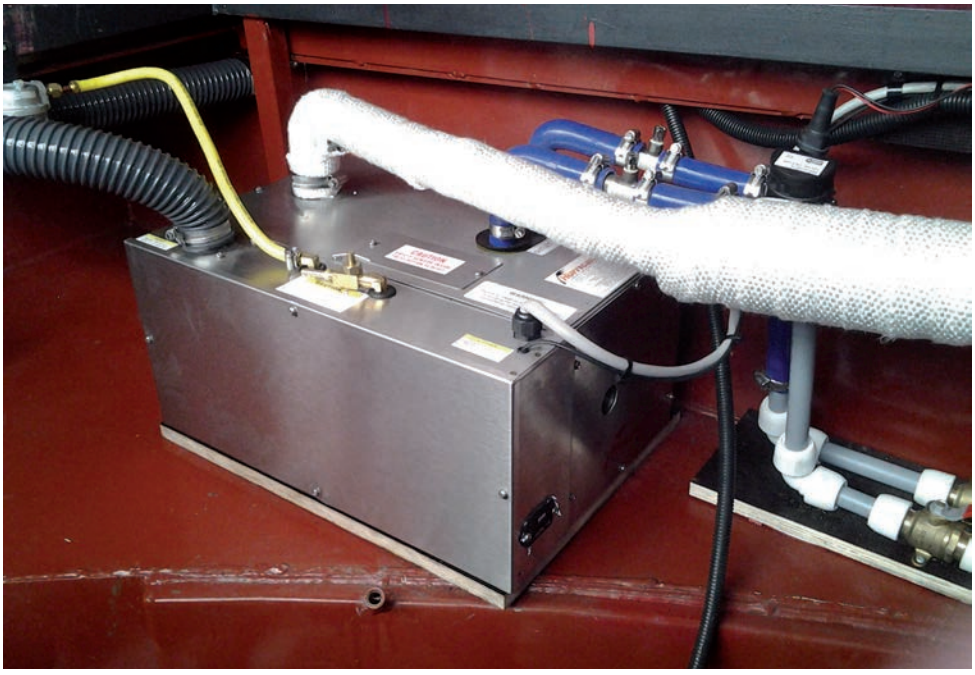
Interior decoration is entirely a matter of personal choice. Most canal boat interiors feature natural wood surfaces, which may be varnished or lacquered.

The sides are sometimes carpeted to waist height, and floors are usually carpeted. However, laminate flooring, solid hardwood flooring or tiling are increasingly popular. Galleys and bathrooms will often use vinyl floor coverings.

SEATING AND BEDDING

In the past the Narrowboat shape meant restricted seating and sleeping designs but now, even with traditional fixed seating in the saloon and a boatman's cabin there are a large range of foams to suit all. They can be shaped for comfort of sleeping and sitting.

Where a fixed bed is a preferred there are options of sprung, foam or memory foam mattresses all made to measure including zipped sprung for zipping together for cross beds giving extra space when not being used. It is always wise when having your bed constructed to consider your sprung mattress at the same time. Although made-to-measure are now widely available, the basic rules of the number of springs on the width and length should be considered by the mattress makers, and enough room must



be allowed to tuck in sheets. Made to measure bedding and headboards are also available.

For the boater who does not favour traditional fixed seating in the saloon there are now many styles of sofas and chairs made to measure. These can use all available space, allow for door access and fit under the unused gunwale space if required (if this is not being used for book cases or radiators). They are available for assembly once on board. They can also provide much needed storage in the base and are available to convert to beds if required. Swivel leather or fabric recliners are now available in smaller sizes than the regular domestic models.

When you have made your choice of seating the fun starts. You can choose from a large array of type and design of fabrics which can be co-ordinated with curtains blinds and soft furnishings.

HEATING

Space heating is often provided by a traditional stove with a cast-iron body and glass-fronted door. These can burn wood or coal, and if fitted with a back boiler, can help to heat the water, too. Diesel-burning variants are now common.

Many boats will have central heating. Boilers are purpose made and either run on gas or diesel. Again, these provide both space heating (using panel or skirting-board radiators) and water heating. Diesel for heating is largely reduced duty but needs to be declared on purchase.

Heating using solid fuels is always attractive in winter time, but you should take great care that you have adequate

SOLID FUEL STOVES

Solid fuel stoves and cookers have been a feature in boats for over two hundred years, with installation practice based upon handed-down methods.

However, following several incidents, a British Standard (BS8511) has now been produced as to good practice for stove and cooker installation. As a boatowner, for new or replacement solid fuel appliances installed to the BS8511 recommendations the key items to look for are: a non-combustible hearth surface; heat protection of combustible material around the appliance and any uninsulated flue pipe (with an air gap behind the heat protection); and a twin-wall insulated chimney as a minimum through and above the roof.

Although not mandatory the use of CE marked appliances is encouraged. Evidence from incidents indicates that a large number are caused by user error and not the actual installation. So even with an appliance installed to BS8511, as a boatowner you should be confident with lighting and controlling the appliance, and follow good housekeeping practice including regular sweeping of the flue and keeping combustible materials away from the appliance when in use.

Although not mandated by BS8511, the fitting of optical smoke alarms and carbon monoxide detectors are strongly encouraged.

ventilation. Check with your boat-builder and Boat Safety Scheme Examiner.

KEEPING WARM

Most canal boats are constructed from steel plate. In full sun, the surface of the steel can become very hot. Without insulation, this heat would transfer to the interior making life very uncomfortable indeed! Conversely, in winter the steel becomes icy cold and condensation will form.

Good insulation, coupled with good ventilation, cures both these problems. In summer, heat transmission to the interior is dramatically reduced, and in cold weather, heat loss reduced.

Popular forms of insulation include fire-resistant polystyrene, Rockwool-type mineral fibre, spray foam, and the blanket-like Thinsulate. You can discuss the options with your builder.

FITTING OUT YOURSELF

DIY building of boats remains popular. Many skilled owners will buy a sailaway boat and work from there. This includes the shell with the engine installed and holes cut for the windows – ready to 'sail away'.

Several books are available if you choose to follow this path. You should study the Boat Safety Scheme's Essential Guide: this contains details of all the checks your boat will be subjected to by a BSS examiner on completion, as well as guidance on the correct way to do things. When buying a sailaway it must be CE marked by the boatbuilder and any subsequent work undertaken is outside the scope of the Recreational Craft Directive, unless the craft undergoes major alteration.

If in doubt, always ask. Fitting a boat is not the same as domestic DIY, and owners often fail to understand the special requirements, or purchase unsuitable equipment. When the time comes for their BSSC examination, they are faced with the expense and inconvenience of correcting errors, or even replacing equipment. Do visit your local chandlery to obtain parts, and seek assistance from surveyors and examiners, boatyards and chandleries. Any extra cost is a small price to pay compared to correcting countless mistakes!

ELECTRICS

Today's canal boat has all the mod cons you expect at home – and these require a good electrical system to work.

On-board electrics are usually centred around a 12 or 24 volt system, supplied by a battery bank which is kept charged by the engine's alternator. The 12v system is perfectly adequate for basic equipment such as the boat's various pumps and lights, and for starting the engine.

But as vessels become more complex – requiring larger inverter systems – 24 volts should be used.

So how is a 240v system created in a cruising boat?

SHORE POWER

The simplest way is to connect the boat, by means of an shore connection cable, to a power socket in the marina. This provides the craft with a supply of exactly the quality you would get in your home.

The power you can draw is usually limited to 1 to 2kW, so it may not always be sufficient. It is very useful to run low-level heating to prevent frost damage over winter, and to run battery chargers to keep the 12 or 24 volt batteries topped up, but you need to be selective with appliances.

Leaving a boat permanently connected to shore power can lead to corrosion, so you should consider investing in an isolation transformer or a galvanic isolation device..

FREE-STANDING GENERATOR

Diesel engined 'gensets' may be fitted in addition to the main engine. Compact and normally built into a sound-deadening capsule, they are available in a wide range of outputs. They are powered by diesel, with no inherent safety dangers if they are correctly installed. (Petrol generators should be avoided unless you are able to make very special storage arrangements – not normally possible on a narrowboat.)

Tidy, correct installation of wiring is important.
Photo: Narrowboat Surveys

These give complete independence; and if the set is large enough, it will run any domestic appliance. Their disadvantages are high cost and mechanical complexity. Although internal noise is very low, don't forget there is an outside exhaust which your neighbours will hear!

ENGINE-DRIVEN GENERATORS

These machines bolt onto the side of the engine and are belt-driven.

There are two types. The simplest is a 240v alternator, directly belt-driven off the engine. To use, you must set the engine speed exactly right to make the correct voltage and frequency – so they are not

suitable for use on the move. These types are simple, with little to go wrong.

The more complex types use an electronic box which correctly sets the voltage and frequency, irrespective of how fast the engine is spinning. These can therefore be used whilst underway, but are many times more expensive than the former, and costly to repair if they go faulty.

Anything over 3kW is likely to power all domestic appliances. It is vitally important to have properly engineered drive systems. Many engine builders now offer these as optional pre-installed fitments.

INVERTERS

Inverters draw power from a 12 or 24 volt battery, and 'invert' it into 240v mains electricity. Older units produced a square wave, giving a crude approximation of the mains current – adequate for powering the simplest devices. The next generation machine produced a better waveform, often called a 'modified sine wave': though much better, these can produce unwanted results such as lines on a TV screen.

The latest units generate a virtually pure sine wave, and these are now the most popular. The digital controls on many modern appliances simply will not work without a pure sine wave supply.

You can use an inverter day or night, without disturbing anyone else. But they do of course drain the batteries, at a rate proportional to the size of load. Small loads such as a TV or a hi-fi are not a problem, but hairdryers, microwaves and so on draw a lot of power. Be sure not to leave TVs on stand by as this will continue to drain the batteries.

A washing machine has a heavy power draw for a long time. If run off a large

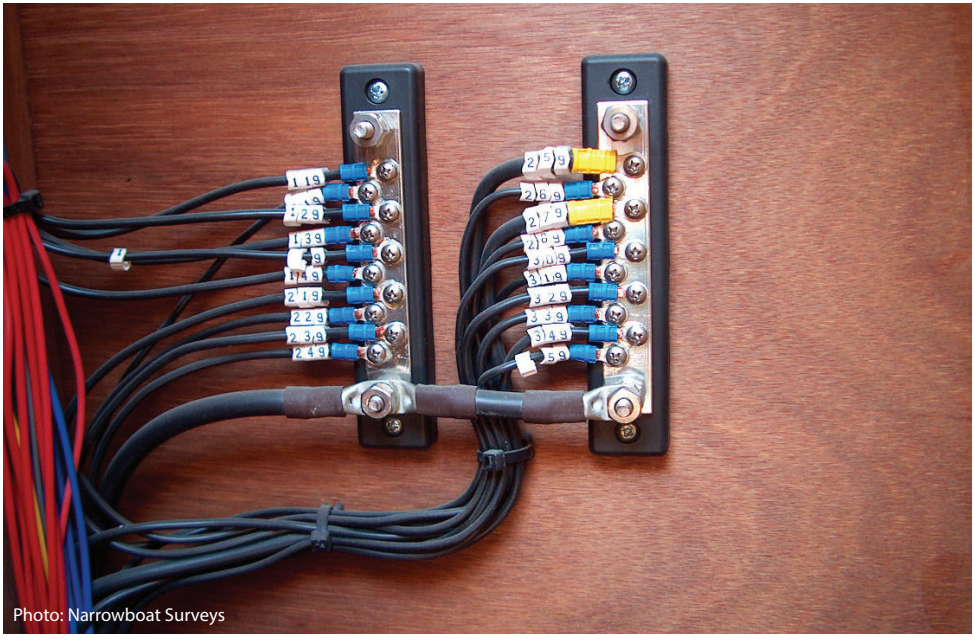


Photo: Narrowboat Surveys

inverter, it could deplete the battery. So do the washing whilst underway, and the engine alternator will provide much of the power needed by the inverter, reducing the demand on the battery. Alternatively, you could install a generator to run the washing machine. 'Combi' inverters have built-in battery chargers, which work if you hook up to shore or an on-board generator.

Big inverter systems usually need at least four batteries to be successful. Modern inverters are generally reliable, but can be expensive to repair if they do go wrong. You may need a 'mains manager' system to ensure that different supplies cannot conflict: your builder will advise. There are codes of practice for 12v and 240v marine installations, so it is better to deal with suppliers who are familiar with them and the methods of combining the different systems.

Electrical panels
Photo: ABNB


Narrowboats may have as few as two batteries – or as many as seen here!
Photo: Mark Langley

CONTRACTS

You wouldn't buy a house without making sure all the papers were in order. Fortunately there's less paperwork for a boat, but it's just as important to get the right contract. Your boat will probably be the second most expensive purchase of your life, and a good contract will protect you.

Standard contracts are produced by British Marine, to which British Marine Inland Boatbuilding is affiliated.

BRITISH MARINE
LEADING THE INDUSTRY

◆ Buying a custom-built boat

If you are having a new boat built, use the *British Marine Agreement for the construction of a new boat for a fixed price.*

◆ Buying a stock boat

If you are buying a new or second-hand boat from stock, use the *British Marine Agreement for the sale of an existing new or second-hand stock boat.*

◆ Buying second-hand

If you are buying a second-hand vessel through a broker, they may have their own standard Agreement or use of the *British Marine Agreement for the sale and purchase of a second-hand vessel subject to survey and sea trial.* There is also the *Agreement for the unconditional sale of a second-hand vessel* – that is, without survey or trial. But it is almost always advisable to have an independent survey before buying a second-hand boat. British Marine Inland Boatbuilding includes surveyor members, with a list found on our website at *www.inland-boatbuilding.co.uk.*

Check with British Marine Boat Retailers and Brokers Association. They produce advice on what else to look for in their guide to buying a second-hand boat.

Once you have bought your boat, British Marine through its Yacht Harbour Association (TYHA) provides a standard Licence Agreement for Berthing and

Photo courtesy of ABNB

Mooring Ashore. The standard Terms of Business for the industry are used for services such as repairs, and other business transactions, but you should use a separate contract when buying a boat. (Other specialist contracts exist, such as a Listing Agreement for selling a boat through a brokerage.)

PAYING IN STAGES

Where the contract is between you and the builder, it is normal to pay the builder in stages, in order to fund the build of the boat.

Under the standard Construction Agreement, the ownership of the boat, and all materials and equipment purchased specifically for its construction, become the customer's property upon payment of the first stage payment.

However, the builder will be entitled to have a claim over the boat, and be entitled to retain possession of the boat and any materials or equipment purchased for the construction, until they have received full payment of all the sums due to them under the agreement.

READING THE CONTRACT

You are always advised to read any contracts and agreements thoroughly before signing up to anything. Make particularly sure that you are happy with the boat specification that will be attached to the contract, and ensure that any variations to the original specification are recorded *in writing* and signed by yourselves and the builder. If you are concerned about any contract issues you should check with your solicitor.

Photo courtesy of ABNB

DISPUTE RESOLUTION

Should you get into a contract dispute with a British Marine member, the Federation recommends that the parties engage in some form of alternative dispute resolution before resorting to often costly and time-consuming litigation.

The Academy of Experts runs a mediation scheme especially for British Marine members to deal with marine disputes; the mediators are experts in the marine field.

For further information, visit *www.britishmarine.co.uk* under Legal & Finance, select Dispute Resolution Scheme or call 01784 473377.

All the standard contracts are available to British Marine members free of charge. For further details, ask your boat builder. You can contact British Marine directly at Marine House, Thorpe Lea Road, Egham, Surrey TW20 8BF (01784 473377; www.britishmarine.co.uk).

THE REGULATIONS

An inland boat may not need to be 'seaworthy', but it still needs to be sound, safe and reliable.

There are two types of regulations to assist.

The Design and Construction Standards which includes The Recreational Craft Directive (RCD) and The Technical Requirements for Inland Waterways Vessels (TRIWV), both European Union sets of rules that set out design and construction requirements that apply when your boat is first built. The second is the Boat Safety Scheme which helps minimise the risk from fire, explosion, pollution and CO poisoning.

The Recreational Craft Directive (RCD) applies to vessels between 2.5m and 24m length, whether built by a professional boatbuilder or an amateur. It requires the boat to meets certain essential requirements – covering such things as Hull strength and vessel stability, and the installation of gas and electrical systems, along with 25 other items.

For the first four years of the life of the boat, you can obtain a waterways licence by presenting a full RCD 'Declaration of Conformity' which has to be provided with all new vessels when first sold. After that, you will need a BSS Certificate.

BUYING A BOAT FROM A BOATBUILDER

Any boat bought from a professional boatbuilder must be CE marked: this applies no matter the stage of build, with the exception of a bare shell that needs to be supplied with an Annex III Declaration of Conformity. The boatbuilder will issue a Declaration of Conformity to Annex IV, will provide an adequate Owner's Manual, and will mark the hull permanently with a Watercraft Identification Number (WIN). The builder's plate will carry the 'CE' mark. Professional boatbuilders all have a three-letter Manufacturer's Identity Code. This code identifies the builder on every boat he builds, and is part of a group of numbers and letters that together make up a WIN. Care must be taken that your Declaration of Conformity has a WIN number. Since 2005, engines also have to be certified (by the manufacturer) to comply with sound and emissions regulations, unless they are exempt as historic.

FITTING OUT YOURSELF

Many people fit-out boats themselves, from either a bare shell or a partly-completed boat from a boatbuilder. With the exception of the bare shell, the boat from the professional boatbuilder must be CE marked to show conformity to the Recreational Craft Directive (RCD). A professionally built bare shell must be supplied with a Declaration of Conformity to Annex III of the RCD. (See section above about buying from a boatbuilder)

You may have heard reference to the "five-year rule" with regards to craft completed by the owner. This only applies to craft substantially built by the owner and not sold, or hired-out, within five years of first use: such craft are outside the scope of the RCD. Boat owners may use specialist services for elements of the build to still qualify but not if having the boat built by others.

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If a craft built for own use is sold within the five-year period then it must be CE marked and treated as per the section above about buying from a boatbuilder: the one difference being that the Watercraft Identification Number (WIN) must be obtained from the RYA (for a small fee) that will include the RYA's Manufacturer's Identity Code (MIC), as amateurs cannot obtain a MIC.

Should you need to CE mark your craft then for Category D waters (e.g. inland waterways) you are able to self-certify the craft and it does not need to be inspected by an official body. Alternatively, you can have the craft inspected by a Notified Body who will ensure that it meets the RCD requirements and provide a WIN: this process is called Post Construction Assessment (PCA).

Most people complete the fitting out from a "sailaway" stage, whereby the shell is weathertight and includes an engine. This type of craft must be purchased with a CE mark and then any subsequent work undertaken by the boat owner is outside the scope of the RCD, unless there is a major alteration such that the craft would require re-assessment.

The RCD is a complicated legal requirement and there are British Marine members who can assist you all aspects of the RCD, including production of the necessary paperwork.

THE BOAT SAFETY SCHEME (BSS)

After four years, your boat will need to be inspected for a BSS Certificate before a licence is issued – and then every four years after that.

The Boat Safety Scheme grew out of the need to minimise the risk of fire and explosions aboard boats, and is now required by most navigation authorities.

In one sense you can think of the scheme as an MoT for boats, but its scope is wider because it must include all the gas and electrical installations, engine and fuel lines, fire safety equipment and so forth.

The BSS website, *www.boatsafetyscheme.org*, carries all the relevant details, check lists and downloadable chapters of the BSS Guide. When it comes to the time for an examination, finding an examiner is the first step. Check the British Marine Inland Boatbuilding website, the BSS website, the Boat Safety and navigation authority offices, or adverts in waterway magazines. Your BSS examination can take place up to two months before the previous certificate expires, so don't leave it until the last moment.

You may arrange for the examiner to return and extend the certificate to cover the other completed work, and you may also be able to arrange for the first fee to cover subsequent visits.

MORE INFORMATION

Boat Safety Scheme
First Floor North
Station House
500 Elder Gate
Milton Keynes
MK9 1BB
Tel: 0333 202 1000
www.boatsafetyscheme.org

Useful documents are freely available through the website of British Marine at *www.britishmarine.co.uk*. Follow the link to Publications, and select Technical.

THE COST OF BOATING

How much does boating cost? It's a difficult question to answer, given the enormous variety of boats and boaters and the many types of waterways, moorings and more. Here, we try to put some flesh on the bones.

LICENCE

Most canals and rivers in the UK are managed by either Canal & River Trust or the Environment Agency. A 12-month CRT Licence for its canals and rivers is around £825 for a 50ft narrowboat, and for just its rivers around £490. A Gold Licence, for all CRT and EA canals and rivers, is around £1,125 per annum for a 50ft narrowboat. You can find more licence information at *www.canalrivertrust.org.uk/boating/licensing*.

But what if you want to go further? For a 50ft narrowboat normally moored on CRT waters, a visitor licence might cost you around £60 for seven days on the River Thames, or £40 a week on the Basingstoke Canal. A week on the Bridgewater Canal is free, because a reciprocal arrangement exists.

BSS CERTIFICATE

After their first four years, boats need to be tested for safety by qualified examiners every four years. The test points are identical for all boats, irrespective of size or type, though there'll be less for the examiner to look at in a gas-free boat.

The safety examination is a very black and white affair and so quite easy to budget for. Although the cost of the examination is not fixed it could cost anywhere between £100 and £250 with cost varying by region and examiner.

Most fail points can be remedied with minimal financial cost and a couple of man hours, although non-compliant gas cookers are sometimes more easily replaced than repaired.

Some examiners may make an additional charge if a second visit is required following a fail, particularly if they have any distance to travel.

INSURANCE

Like all insurance, the price is dependent on risk and the amount of cover required. Rod Daniel of Craftinsure sheds a little light on the

Photo courtesy of ABNB

dark art of boat insurance: "Value and age of the boat are key premium factors rather than the length or beam width. Other factors to consider include where the boat is based, and any additional cover you might require for boat contents. If you live aboard, you can expect to pay more."

Avoiding tidal waterways and opting for a higher excess can reduce your insurance costs. Some insurers may ask for a condition survey if your boat is over 20 years old.

We found £190 to be a typical quote for a 57ft Narrowboat, built in 1996 and worth £50,000. A new wide beam boat, 60ft by 12ft and worth £130,000, was quoted at £500. So you can see that the value and age of the boat really do make a difference to the premium.

Third party only insurance which is the minimum cover required by most navigation authorities and marinas is much cheaper and can cost from as little as £50.

MOORINGS

After buying the boat itself, moorings are the most variable cost you'll come up against. Mooring costs are dependent on location, facilities, the size of your boat, and an ever fluctuating market. Most marinas will charge different fees if moored alone than abreast to another boat, and some differentiate between residential, frequent cruising, and infrequent usage.

Let's look at some examples. A private boat club on the northern Leeds & Liverpool Canal charges £700 per year for a 50ft Narrowboat, keeping costs low by breasting boats up next to each other, and harnessing members' enthusiasm to keep the site in good order.

A 40ft offside mooring on the southern Grand Union cost £1,300 at auction – but with no facilities, and strictly restricted to leisure use. By contrast, a residential mooring at a nearby marina was priced at £5,400 per year, with all facilities and good security. A marina mooring on the lovely River Wey, on the other side of London, is priced similarly at just under £5,000 for a full length boat – but there are no residential moorings on this river. And if you want to moor in central London, you might be paying as much as £10,000 every year for a good quality residential mooring on the Regents Canal or Paddington Arm.

Heating and cooking range.
Photo courtesy of ABNB

UTILITIES

Utility costs vary greatly with usage. A live aboard boater will obviously spend more than a weekend-and-holidays cruiser.

Shore hook up mains supply costs for electricity can cost more than domestic house charges, as most marinas are classed as commercial customers. Electric can cost up to 15 pence per unit from a marina, but it is worth noting that as marinas are not regulated energy suppliers they cannot charge a premium to their customers and have to sell it on at the price they pay.

A solid fuel stove brings warmth to any boat. Photo courtesy of ABNB

Gas bottles come in several sizes. Larger ones offering better value, but most boat gas lockers seem to accommodate 13kg canisters, which at the time of publication were an average of £26 each. Gas usage depends on appliances fitted and could be as much as one bottle a week.

Diesel fuel for engine propulsion, battery charging and heating is charged at different rates depending on its intended use. At the time of publication the average cost of diesel fuel for propulsion is between 75 pence to £1.30 per litre and fuel used for heating or power generation costing an average of 50 pence per litre.

HEATING

It is recommended that the British Code of Practice BS 8511 should be consulted before installing a Solid Fuel Stove. Most boats use a multi-fuel stove for heat. The debate rages continually over which fuel is best, and boaters are usually partisan and eager to compare costs and performance. Some boats make the most of the heat produced by their stove to provide hot water and to heat radiators via a back-burner system – an efficient way to get 'free' hot water during winter time.

Diesel-fuelled heaters are another option. There are several types to choose from, but running costs depend on whether you have a separate heating tank, or feed it from the main engine tank and 'claim the tax back' when buying diesel. Once installed, most diesel stoves have very low maintenance costs, but some types of diesel-fuelled heaters will require regular servicing. A standard service, carried out at least once every two years, will cost around £120.

FUEL

Diesel consumption is tricky to monitor, as usage and prices vary so widely. Running your engine to charge the batteries will drink fuel, too.

Although many boaters keep a log of the fuel they purchased, few keep records of engine running hours. Our panel quoted figures from 100 to over 200 litres a year, and continuous cruisers might rack up many more.

PUMP-OUTS

Pump out costs vary between £10 and £20 a time and the frequency of this depends on how much usage you toilet gets. A live aboard boater could typically need a pump-out every 2 weeks and a holiday boater only twice a year.

MAINTENANCE

How long is a piece of string? Maintaining one's boat is a major expenditure, and not only is the age and condition of your boat a factor, but the prices charged by companies providing services can differ hugely too.

Some maintenance issues creep up slowly, while breakdowns can come from

nowhere and require immediate attention. Although it is difficult to know what's around the corner, there are some constants to bear in mind when budgeting for boat maintenance: replacement batteries, water pumps and stern gland packing. Leisure batteries can cost anything from £70 each (and your boat will have several), and a new water pump will set you back around £100.

Engine servicing is usually carried out yearly to avoid breakdown expenses later. A basic service will cost around £150, a more thorough one over £250. It may be worth learning to service your engine yourself, not only to save on labour costs but also to nurture your relationship with your boat.

Hull blacking is a less frequent maintenance cost that most boaters tackle every two years and will mean getting the boat out of the water (with a crane or dry dock) before preparation and re-blacking. While the boat is out of the water, it is adviseable to check sacrificial anodes and replace them if necessary. Prices range from £6 to £12 per foot with some yards charging for getting the boat out of the water on top of this, so worth shopping around.

Boating breakdown cover costs from £75 to £200 per year and is usually a sensible precaution, particularly for those new to boating.

GRAND TOTAL

How long was that piece of string again? Clearly, there is no single answer to the question "how much does it cost?"
We can see, though, that running costs in excess of £4,000 are not unusual for a typical 50ft narrowboat. Occasional expenses such as a repaint or major overhaul will add more. Yet boaters are a prudent, resourceful and frugal bunch, and though boating is rarely cheap, we think it's worth it.

WATERWAY LICENCES

Almost all waterways are maintained by a waterway authority – and their work needs to be paid for. So you need a waterway licence before navigating on their waters, whether you are visiting briefly, cruising for weeks, or planning to live aboard.

The two principal waterway authorities are Canal & River Trust (CRT), which cares for about 80% of the canal system and several rivers; and the Environment Agency (EA), which looks after the non-tidal Thames, the Anglian waterways, and the Medway.

Just as you can't buy road tax without insurance or an MoT, you will need insurance, a BSS Certificate or RCD, and (on the CRT network) a home mooring (or declare as a continuous cruiser) before you can obtain a licence.

If you want to use your boat for anything other than personal, private, pleasure use it is considered to be business use and you will require the consent of the licencing authority and a business licence. This includes any kind of public use where someone is paying to use/stay on your boat.

THE CANAL & RIVER TRUST

CRT runs most of the country's canals, and rivers including the Severn, Trent, Yorkshire Ouse, Lee and Stort. It offers two main types of licence: 'canals and rivers' and 'river-only'. The longer your boat, the more the licence costs.

Application forms for various CRT boat licences may be obtained from the CRT website *canalrivertrust.org.uk/boating/licensing/application-forms-fees-and-useful-downloads.*

You can also renew your licence online through the CRT website at *canalrivertrust.org.uk*, which provides lots of valuable information for new boaters.

Application forms are also available at any CRT regional or local waterway office, from some lock-keepers, and from a local agent such as a marina or boat club.

All licences are processed centrally. The form will tell you whether an insurance certificate, BSS Certificate or RCD Declaration of Conformity needs to be included. Customer Services at CRT will deal with any questions you may have.

ENVIRONMENT AGENCY

The EA runs the non-tidal Thames, Medway, and East Anglian rivers. Each of these three regions has its own licensing (or 'registration'). On the Thames, for example, your boat's width and length are taken into account when calculating a price, whereas in East Anglia, only length matters. Visitors from one EA waterway are entitled to a short 'free stay' on the others, though.

The non-tidal Thames is the river from Lechlade, Oxfordshire, to Teddington Lock. A comprehensive website at *www.visitthames.co.uk* has full details of licensing. You can call the Reading headquarters on 0118 953 5650, or the Thames info line on 0845 988 1188. (BMF Thames Valley also publishes a guide to services on the river, available from 01784 473377 or *www.britishmarine.co.uk/thamesvalley*.)

The Anglian region administers the popular rivers Nene and Great Ouse, plus a host of smaller ones: the Ancholme, Glen, Stour, Welland, Lark, Wissey, and part of the Cam.

The River Medway in Kent is navigable and non-tidal from Allington Lock up to the Leigh Barrier in Tonbridge, though only connected to the main waterway system by a tricky coastal passage. Short-term licences are available from the offices at Allington and Yalding locks, and from a number of marinas.

For information on all of these, including downloadable forms, maps and navigation guides, see the EA website at *www.environment-agency.gov.uk/navigation*.

Telephone enquiries now go through a central office at 08708 506506, which will answer your questions or pass you on to their regional offices to deal with local queries.

NORFOLK AND SUFFOLK BROADS

This intricate system of rivers and broads, popular with pleasure-boaters for over a century, is run by the Broads Authority. Both navigation authority and national park, the BA issues licences, regulates boating and preserves the beauty of this special place. Licence details are available on 01603 610734 or from *www.broads-authority.gov.uk*.

OTHER WATERWAYS

Below Teddington Lock, the River Thames is administered by the Port of London Authority.

The PLA makes no charge and does not issue licences, but you should study its Recreational Users' Guide; the river can be strongly tidal and you will encounter commercial traffic. (01474 562200, *www.pla.co.uk*)

The River Avon in Warwickshire is run by the independent Avon Navigation Trust (01386 552517, *www.shakespearesavon.co.uk*) – not to be confused with the Bristol Avon, which is run by CRT.

The River Wey, which leaves the Thames at Weybridge, is run by the National Trust. Short-term licences are available at the first lock. There are no residential moorings (01483 561389). The Basingstoke Canal branches off the Wey, and is also run independently (01252 370073, *www.basingstoke-canal.co.uk*).

VISITING WATERWAYS

You will usually buy an annual licence for the waterway where your boat is moored – but what if you want to visit others?

All the navigation authorities offer short-term licences. On the Thames you can buy one at the first lock you come to; on other waterways, where the locks are not staffed, you should apply by post or buy at a marina.

For the dedicated explorer, you can buy a Gold Licence. This covers both CRT and all EA waters, though it is more expensive than either's annual licence. It is administered by CRT (0303 040 4040, *www.canalrivertrust.org.uk*).

MOORINGS

Finding a mooring in a location that suits you is an essential element of becoming a boat owner but often it is an afterthought rather than a being considered early in the boat buying process. After all, as soon as you become the proud owner of your new boat you will need somewhere to moor it!

Your choice of mooring will depend on a number of factors including how you intend to use your boat. You may plan to extensively explore the inland waterway network in which case you could use a combination of short term 'linear' moorings and marina moorings to facilitate your plan. Alternatively if you intend to keep your boat in one particular area and use it at the weekends then you are more likely to look to the security of a marina mooring. Read on to find out more about mooring types.

Due to the popularity of inland boating there are mooring shortages in some parts of the country, fortunately however new marinas have opened in recent years with more in construction which has improved the availability of all types of moorings, so if you start looking early hopefully you will secure your ideal mooring.

MARINA MOORINGS

Marina moorings provide the most convenient mooring solution for the majority of boat owners as they provide high levels of service with easy pontoon access to your boat. Services such as 240 volt electric hook up, water supply and black water pump out are standard in most good marinas. Workshop facilities, secure parking, slipways and good security are also found in most, with fuel

GOLD ANCHOR MARINA ACCREDITATION SCHEME

Marinas come in all shapes and sizes however to assist boat owners in selecting a marina that suits their needs the UK trade association for marinas (The Yacht Harbour Association) run a 5 level marina accreditation scheme called Gold Anchor. Through the scheme, marinas are externally assessed every 3 years by a highly experienced marina professional who checks systems, infrastructure and customer service whilst also identifying opportunities for improvement.

The scheme, which operates worldwide, has been helping customers to differentiate between marinas for over 30 years through recognising that marina customers expect good service, suitable facilities and value for money no matter what the accreditation level. At a Gold Anchor marina customers can always expect:

- Good customer service
- Value for money
- That recognised industry standards have been achieved

A comprehensive list of Gold Anchor accredited marinas, including their location and facilities, can be found at *www.which-marina.com*

supply, café and provisions available at many of the larger operations. Some marinas provide for residential moorings however if this is what you require please ensure that you make this clear to the marina before committing to a mooring agreement.

There are a large number of marinas on the UKs inland waterways providing a wonderful choice of locations and services, the majority are identified on the Which Marina? web site www.which-marina.com. Most marinas are owned and operated by independent companies, but there are some group operators including BWML, Castle Marinas, Tingdene Marinas and MDL Marinas.

Mooring fees vary according to location, the level of service provided and the length/width of your boat; most moorings are let through annual contracts with various payment options often available.

Generally, in addition to mooring costs, you will need to pay a waterways licence even if your boat resides permanently in a marina, though this may not be the case on some non-CRT waters. Check if you require a waterways licence with the relevant waterways authority, marina or moorings operator.

'LINEAR' MOORINGS

You can also choose a simpler bankside, or 'linear', mooring on suitable lengths of the waterway. On the canals these are often along the towpath, or the opposite bank (the 'offside') if the authority owns it. On rivers like the Thames, you will find them near locks. Farmers and other waterside landowners also rent out their banks for moorings – and if you're especially lucky you might have space at the end of your garden!

These moorings are less expensive but will have fewer facilities, perhaps one shared water point, and waste disposal facilities nearby. They are often in fairly rural settings and have a quiet charm of their own. The level of security is obviously lower, though some offside moorings are protected by a locked gate.

Most moorings have a fixed price, but CRT's moorings are now auctioned online in an eBay-like system. You can see vacancies at *www.crtmorrings.com* or call 0303 0404 040.

Boat clubs have moorings for their members, particularly on the rivers and northern canals. You can find out more from the Association of Waterway Cruising Clubs (*www.awcc.org.uk*).

WHERE TO FIND A MOORING

First, talk to your boatbuilder. Some operate their own moorings, and they may well know about other local mooring opportunities.

You can also contact the authority on whose waters you intend to moor. Their websites list many of the moorings available (*www.canalrivertrust.org.uk* for the canals and CRT-run rivers, *www.visitthames.co.uk* for the Thames), and advice is available from their head offices by phone.

The Yacht Harbour Association's website *www.which-marina.com* provides an interactive map which identifies the location, facilities available and contact details for the vast majority of inland waterway marinas.

The waterway magazines carry extensive advertising from marinas with vacancies, plus regular updates. You can of course also make contact directly by visiting a major boat show.

TRANSFERRING A MOORING

Obtaining a new marina mooring is no problem if unoccupied berths are available. But if you are buying an existing boat on a mooring, ensure that the owner has the right to transfer that mooring to you. Not all berths are transferred automatically to the new owner. It is also wise to check with the moorings operator that the present owner has paid his mooring fees, service charges, and any council tax up to date. You will also usually have to pay a transfer fee, from 2% to 10% of the value.

Linear moorings operated by Canal & River Trust are not transferable. Those managed by other waterway authorities may be, again on payment of a fee.

INSURANCE AND COUNCIL TAX

Insurance for a residential boat is likely to be a little more expensive than that for a boat used for cruising only a few times a year. You will need to look carefully at fire and contents insurance, since this boat is now your permanent home. Don't be tempted to gloss over your residential use: explain the circumstances to your insurer, so that your insurance is not invalidated in the event of an accident.

If you have a permanent residential mooring, you will be responsible for paying Council Tax in some form, which may vary from one local authority to another. There is more information in the Residential Boat Owners' Association's Council Tax Notes.

You will also need to budget for local and domestic services at your mooring, including, for example, mail delivery. Some services, such as a bank account, can be particularly difficult to arrange for continuous cruisers without a home address.

The Residential Boat Owners' Association is a mine of information on these issues, and publishes a comprehensive booklet, *Living Afloat*. Copies are available from RBOA at their website *www.rboa.org.uk*.

LIVING AFLOAT

Living on a boat is a popular way to experience the waterways.

But you should not treat it just as cheap housing. The waterways have their own character and you are likely to be disappointed if you're just looking for a cheap alternative to a flat. A narrowboat is much smaller than the house you're used to; and keeping warm in winter, emptying the toilet on rainy nights, and dealing with 12v electrics all have their own challenges.

STAYING IN ONE PLACE

Residential boaters may decide to live in one spot on a permanent residential mooring, building up a lifestyle amongst the local waterway community.

But only a minority of moorings is available for residential use, and obtaining one of these will require a good deal of research. Make sure you find a mooring first: do not buy a boat and expect to find a residential mooring in your chosen town. Demand is especially high in London, the south-east, Bath and Bristol.

Once you have identified an available mooring, you should check that the mooring is in fact a recognised residential mooring – even if it's previously been used for residential purposes. A simple question to ask the previous occupant is "Are you paying Council Tax?" Talk to the mooring operator, whether it is a private marina or Canal & River Trust (0303 040 4040).

Don't forget that your boat still needs to have a BSS Certificate (or RCD Declaration of Conformity), third party insurance and licence. (CRT has special licences for houseboats which are not capable of moving.)

Photo: Harry Arnold/
Waterway Images

MOVING AROUND THE SYSTEM

What if you want to take fully to the waterway lifestyle, always cruising from one village to the next? In that case, you need not arrange a permanent mooring. Instead, you can declare to CRT that you are 'continuously cruising'. This is the one exception to the need for a mooring before a licence is issued.

However, the guidelines for this are strict. CRT say that any such boat must genuinely be used for navigation throughout the period of the licence of at least 15 to 20 miles, and must not stay in the same place for more than 14 days. It is the responsibility of the boater to satisfy CRT that the requirements are met.

Some owners negotiate a permanent residential mooring in a marina for the cold winter months, and cruise extensively during the summer. Most commercial operators are flexible in negotiating fees for a mooring of this kind. Residential boaters may sometimes find a permanent berth at a marina when space is available, because they add to the general sense of security of the marina during the off season, but this will bring duties with it.

CRT also turns some towpath visitor moorings over to 'winter moorings' for these boaters: your local CRT office can advise.

Continuous cruising is not an alternative to finding a permanent mooring, but a lifestyle choice in itself. It's unlikely to be an option if you are tied to a full-time job in one place, or if you have children who need to travel to school. 'Towpath shuffling' is increasingly being targeted by CRT and is greatly resented by most boaters.

MOORINGS IN LONDON

With 'bricks and mortar' prices so high in London, it is not surprising that the demand for residential moorings is sky-high. Most such moorings are on the canals and Docklands, managed by Canal & River Trust.

There is no waiting list for CRT moorings in London; they may be obtained only by auction. Guide prices are published on the CRT website. There is generally no right of transfer to a new owner, so don't believe an advert that claims there is.

In commercial marinas, though, moorings may be transferable for a fee when they become available. CRT's BWML subsidiary operates marinas at Limehouse Basin and Poplar Dock in Docklands, and Packet Boat Marina in west London.

There are some residential moorings on the Thames, but these are few in number because the river is tidal. The Port of London Authority administers the Thames tideway, and provides an excellent free *Recreational Users' Guide* which lists marinas and launching sites.

Upstream of Teddington, the Thames is administered by the Environment Agency. It has no residential moorings of its own, but they are available in commercial marinas. These are listed in the Thames Boating Trades Association's booklet *Boatyards, Marinas and Services on the Thames*, available from *www.boatingadvice.com*.

LONDON CONTACTS

Port of London Authority:
01474 562200
www.pla.co.uk
Canal & River Trust:
Customer Services 0303 040 4040
www.canalrivertrust.org.uk
enquiries.london@canalrivertrust.org.uk

Photo: Mark Langley

TRAINING

In recent times there have been many newcomers to our waterways, rightly attracted to the lifestyle, the tranquillity and tradition of the canals – but with limited experience afloat.

Fortunately, help is at hand in the form of the RYA Inland Waterway Helmsman's Course. The course, introduced in 1995 by the Royal Yachting Association, is the only nationally recognised training course in inland waterway skills. It comprises up to three days of practical 'hands on' tuition. There is little theory and no examination at the end!

The aim is to teach the techniques of better and safer boating through a greater understanding of the principles involved. The course is offered nationwide by a number of RYA-recognised training centres, situated both on canals and rivers. Training centres and the instructors they employ have to be approved by the RYA and properly insured. There is a limit of three students to one instructor.

GETTING STARTED

So what are you going to learn? First, your instructor will take you through a safety briefing. You will be reminded to wear the correct clothing, particularly non-slip shoes; the need to hold on as you move around the boat ("one hand for you, one hand for the ship"); how to get on and off the boat safely; and the need to keep within the profile of the boat because of low bridges and tunnels. Even simple things such as how to stand correctly when steering are important.

Then on to the boat. On the canals this will often be a 40ft-50ft long narrowboat, with a cruiser stern so the instructor can accompany you. Here, you will be taught what checks need to be carried out on the engine, gearbox and weed hatch prior to starting the boat. With your crew loosening the ropes and casting off, you will be off along the canal!

ON THE MOVE

During this time, you will learn how to pull away from the bank correctly and to come alongside as well. The use of ropes, both for mooring and boat handling, will be explained.

Essential skills to learn include the art of turning in a winding hole (pronounced as in windy weather, not winding as in turning a handle), and the difficult job of reversing. You will do all these activities for yourself: the instructor does not demonstrate, but rather, talks you through each manoeuvre.

This way, you feel what it's like first hand. You and your fellow students will take it in turns to be skipper; when you are not, you are the crew, so you get first-hand experience of those tasks as well.

On a narrow canal, you will learn how to pass through narrow bridges, and the techniques of passing other moored and moving boats as well. You will also learn how to avoid going aground too often.

Of course, most canals and rivers have locks, and there will be ample opportunity to practice navigating through the locks, and operating the paddles and gates correctly. There are so many ways to operate locks, and many different types around the waterways; the course explains safe operation, with plenty of time to discuss the options and understand the safety risks – from falling in to flying windlasses. You will also learn about lock etiquette to ensure that you don't waste


Photo courtesy of ABNB

water, or inadvertently jump the queue and upset someone!

THE CERTIFICATE

Having completed the course you will be much more confident in your ability to helm safely and how to look after your crew's safety. You get the RYA Inland Waterway Helmsman's Course completion certificate, which is the only officially recognised qualification for UK waters.

It is important to understand that this is not a driving test. Boating takes a lifetime to learn, and the Helmsman's Course is not the end of your learning – it is, in many ways, the beginning. Every lock and every waterway is different. Some experienced canal boaters, for example, choose to take the course on a river to broaden their experience.

But the course will give you the confidence to take to the water, and years of experience will help you learn the rest.

Having obtained the qualification, you can go on to apply for an International Certificate of Competence (or ICC) from the RYA if you wish to cruise European waterways. In mainland Europe, unlike the UK, it is necessary to have this certificate to steer a pleasure boat. To get this, you will have to pass a written test (CEVNI) based on European navigation rules. This test is available from the same training centre that did your IWHC.

MORE DETAILS

You can find out about the RYA courses, including details of your local centre, at *www.rya.org.uk/training*.

All queries should be directed to the RYA Training department on the RYA on tel: 02380 604100.

DIESEL FUEL AND INLAND WATERWAYS CRAFT

A new Directive introduced from 1 January 2011 made it a requirement that all gas oil (red diesel) used in "non-road mobile machinery (NRMM)", 'inland waterway vessels' and recreational craft when not at sea, will have to contain no more than 10 milligrams of sulphur per kilogram of fuel (virtually 'sulphur free').

These regulations make it an offence to sell red diesel with a sulphur content of more than 10ppm (current level 1000ppm) for use in inland waterway craft and recreational craft that do not go to sea. This type of fuel has been sold at fuel station forecourts for many years for automotive use.

SO HOW DOES THIS AFFECT YOU?

This means that red diesel sold for use in vessels and recreational craft operating on inland waterways must be low sulphur or sulphur free. The regulations do not cover the sulphur content of diesel fuel used in sea-going vessels.

The petroleum industry advises that some suppliers use road fuel with the familiar 'red dye' to supply off road and marine craft fuel. However, road fuel contains up to 7% FAME (fatty acid methyl ester) or bio-fuel and may prove problematic with some, particularly older, installations and increase the risk of biological contamination or 'diesel bug'.

The Department of Transport have completed a survey of fuel suppliers and estimate that 75% of the diesel fuel supply to the relevant sectors will be 'sulphur free' and will not contain FAME.

At the time of writing this article some suppliers are supplying low sulphur fuel with a bio diesel content and some are claiming to be supplying low sulphur fuel without a bio diesel content.

SO WHAT IS BIODIESEL?

Biodiesel is an alternative fuel similar to conventional or 'fossil' diesel. Biodiesel can be produced from straight vegetable oil, animal oil/fats, tallow and waste cooking oil. The process used to convert these oils to Biodiesel is called transesterification. This process is described in more detail below. The largest possible source of suitable oil comes from oil crops such as rapeseed, palm or soybean. In the UK rapeseed represents the greatest potential for biodiesel production. Most biodiesel produced at present is produced from waste vegetable oil sourced from restaurants, chip shops, industrial food producers such as Birdseye etc. Though oil straight from the agricultural industry represents the greatest potential source it is not being produced commercially simply because the raw oil is too expensive.

After the cost of converting it to biodiesel has been added on it is simply too expensive to compete with fossil diesel. Waste vegetable oil can often be sourced for free or sourced already treated for a small price. (The waste oil must be treated before conversion to biodiesel to remove impurities). The result is Biodiesel produced from waste vegetable oil can compete with fossil diesel.

SHOULD I BE CONCERNED?

If a FAME-free supply cannot be secured then the following precautions are advised: **STORAGE**: Because of the changes in fuel quality, you will need to exercise increased care in the storage of sulphur free gas oil where this contains biodiesel. The following has been recommended by the UK petroleum industry:


Photo: Robin Smithett

- Remove all water from tanks and conduct monthly checks to ensure, as far as practical, that they remain free of water.
- Tanks that don't already have drain points for removing water are likely to need modification.
- Replace fuel filters after 2 to 3 deliveries/ turnover of the new fuel.
- Ensure the content of tanks is turned over every 6 months or in any event no less often than every 12 months.

EQUIPMENT: The majority of equipment and engines supplied in the last 10 years should not have any problems with the fuel but a few precautions are recommended particularly for installations of older engines and equipment.

- Examine fuel systems following the switch to the new fuel and ensure that any seals or pipes found to be leaking are replaced.
- If you are having older engines and equipment serviced, replace fuel seals and fuel hoses as a precaution.
- Replace fuel filters after the first 2 to 3 tank fulls of the new fuel.
- The current specification for fuel hose to meet the requirements of the Recreational Craft Directive for new craft construction is for the hose to be CE marked under the responsibility of a Notified Body. The hose is normally certified against the harmonised standard EN ISO 7840 for fire resistant hoses and EN ISO 8469 for non-fire resistant hoses. There is currently concern that these hose specifications have not been approved for use with bio-fuel and this should be checked with the hose supplier.
- Bio fuel is a very good solvent and may release accumulated sediments in fuel tanks. Although it may not be necessary to clean fuel tanks and fuel lines before using bio-fuel in the lower levels of 7% it would be good practice to monitor filter plugging and keep extra filters to hand.
- Some metals as well as rubbers and plastics are not recommended for use with bio-fuel particularly at high concentrations. Although not normally a problem at low level concentrations it is known that bio-fuel will 'pick up' metal such as copper.

USAGE: The advice on storage on board the craft is the same as for shore based tanks. However the ability to turn over the fuel contents within six months is not necessarily practical. A regular check on the condition of the fuel and fuel components is advisable.

BIOLOGICAL GROWTH (THE BUG): Due to its chemical structure FAME, and diesel blends in particular, are more susceptible to biological attack by micro-organisms. These aerobic micro-organisms usually grow at the interface between fuel and water in tanks; anaerobic species can actively grow on tank surfaces and can contribute to metal corrosion. If microbiological growth remains undetected it will eventually cause fouling and filter plugging with the ultimate outcome of stopping your engine and possibly causing expensive damage to your engine fuel injection system.

If considering the use of fuel cleaning or biocide treatment expert advice should be sought.

CONCLUSION:

- If possible use "FAME" free fuel.
- Use a reputable supplier with a high turnover of fuel.
- Turn over fuel in your tanks every 6 months.
- Check your fuel tanks on a regular basis for signs of contamination.
- Service your engine in line with manufacturers recommendations.
- Ensure your engine has an adequate fuel filtration system fitted.

PETROL REGULATIONS

The Petroleum (Consolidation) Regulations 2014 (PCR) came into force on 1 October 2014. They apply to workplaces that store petrol where petrol is dispensed, ie retail and non retail petrol filling stations; and non-workplace premises storing petrol, for example at private homes, or at clubs/associations (or similar).

You can store up to 30 litres of petrol at home or at non-workplace premises without informing your local Petroleum Enforcement Authority (PEA). You can store it in:

- suitable portable metal or plastic containers
- one demountable fuel tank
- a combination of the above as long as no more than 30 litres is kept

For these purposes 'premises' are as defined in the Health and Safety Work Act, etc. 1974 and includes, for example, motor vehicles, boats and aircraft.

If you wish to store more than 30 litres of petrol and up to a maximum of 275 litres of petrol at your home or premises you need to follow the legal requirements for doing this, which are:

You should notify your local Petroleum Enforcement Authority in writing, giving your name and address as the occupier of the storage place or the address where the petrol is stored. This is not a new requirement but carries forward long standing requirements of the previous legislation. You can store it in:

- suitable portable metal or plastic containers;
- demountable fuel tanks; and
- a combination of the above as long as no more than 275 litres is kept.

If you are storing up to 275 litres of petrol at any of these premises then there are common storage requirements for these amounts, which can be requested from your local PEA.

Don't let CO ruin your life

We urge our boating customers to take on board that only by installing equipment in accordance with manufacturer's instructions; checking and maintaining systems routinely and keeping to the maker's usage guidelines will the risk from carbon-monoxide poisoning be minimised.

CO is a colourless, odourless gas – often dubbed the 'Silent Killer' – and can kill even in moderate concentrations when inhaled. The early symptoms of poisoning are often similar to flu or food poisoning, and can include headaches, nausea and dizziness.

Any fuel burning equipment can be a potential source of CO including stoves, gas appliances and any engine exhaust.

According to the Boat Safety Scheme (BSS), CO build-up in boat cabins can occur with any one or a mix of these factors:

- faulty, badly maintained or misused appliances
- exhaust fumes from a boat's engine or generator
- escaped flue gases from solid fuel stoves
- blocked ventilation, or short supply of air - fuels need the right amount of oxygen to burn safely

FOLLOW THE BSS 10-POINT TIP LIST ON STAYING SAFE FROM CO POISONING

❶ All the crew should know the symptoms of CO poisoning and how to react if it is suspected

❷ Install fuel burning appliances properly, in-line with makers directions

❸ Follow servicing guidelines; maintenance should be routine and competent - Don't allow bodged repairs, adjustments and adaptations

❹ Always use appliances as per the instructions and never use cookers for space heating

❺ Don't block ventilation – appliance fuels like gas, coal, wood, oil, paraffin, etc. need sufficient air to burn safely

❻ Don't bring charcoal BBQs on board, or have them near a cabin during or after use - only stone-cold charcoal is safe

❼ Keep engine fumes out of the cabin space, never use a portable generator in or near a cabin

❽ Learn about the danger signs, spot potential hazards before CO occurs

❾ Deal with problems immediately, never use equipment you suspect has problems

❿ Install a certified CO alarm (BS EN 50291-2), test it routinely and never remove the batteries

If you are in any doubt about what to do, visit the Boat Safety Scheme website, where you'll find the essential information on how to stay CO safe.
For more details visit *www.boatsafetyscheme.org/CO*

BOAT SHOWS

Check out your dream boat 'in the flesh' by visiting one of the year's major boat shows.

London Boat Show (January)
ExCeL, Docklands
The biggest indoor show with river boats and acres of chandlery.
www.londonboatshow.com

Crick Boat Show (May)
Crick Marina, Grand Union Leicester Line, Northamptonshire
The year's biggest narrowboat show.
www.crickboatshow.com

Beale Park Boat & Outdoor Show (June)
Beale Park, River Thames, Berkshire
The River Thames' own show with modern and traditional boats alike.
www.bealeparkboatandoutdoorshow.co.uk

Southampton Boat Show (September)
Mayflower Park, Southampton
A predominantly sea-going boat show but with chandlery and equipment of interest to inland boaters.
www.southamptonboatshow.com

Photo: Tristar Boats

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Buy British Marine. Buy with confidence.
Look for the logo.

BRITISH MARINE
LEADING THE INDUSTRY

Would you like to buy from a supplier who…

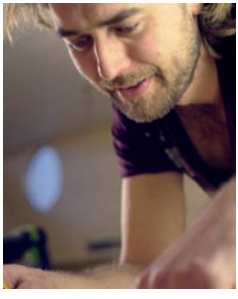
- Works to recognised standards
- Complies with current regulations
- Is a member of a recognised trade body
- Has insurance for your protection
- Has a mechanism for addressing complaints
- Has access to a network of technical expertise

Do you want peace of mind?
Then buy with confidence from British Marine members.

British Marine is the membership organisation for the leisure, superyacht and small commercial marine industry. Our 1,600+ members come from a broad range of businesses including boat builders, chandlers, brokers, marinas, passenger boats and engines.

By using a British Marine member you are dealing with a company that has signed up to an extensive Code of Practice that offers consumers confidence that the service provided will be the best. Should standards be less than expected then you have recourse to British Marine to address the issues.

Every company displaying the British Marine logo is proud of all it represents, so you know that when you choose to buy products and services from a British Marine member, you can do so with confidence.



Photos courtesy of Tristar Boats