

Waterway Guidance Notes

Guidance Note 1: Different Waterway Experiences

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Rivers

Although natural watercourses, many rivers have had considerable engineering work done to make them suitable for boats to use, for example locks and weirs have been built. Most rivers allow the passage of wide boats that are 11 to 14 feet beam, and often considerably wider.

Broad canals

'Broad' canals have locks that are over seven feet wide; 14 feet is not unusual. The locks have double gates at both ends and the whole process of passing through a lock takes a little longer than it does on 'narrow' canals. This means that if you want to explore the entire canal system you cannot use a boat with a width (beam) of more than seven feet. Broad locks can take two narrow boats side by side. If there are two in the lock together, then the boat cannot move around, and there is the added advantage of having another crew to help! However, when only one boat is in the lock, ropes around the bollards on the lock side can usually prevent boats being thrown around, provided, of course, that they are not tied firm, but allowed to slip with the movement of the water.

Narrow canals

'Narrow' canals have locks with a maximum width of seven feet. The narrow locks are only wide enough for one boat, with a few inches to spare at the sides. The advantage is that the boat cannot move around, and sometimes this makes newcomers feel more secure. They usually have two bottom gates and one top gate; your boat is easier to handle as it slots into the lock neatly and cannot swing about in the lock chamber as the water comes in. Some of the longest flights of locks are on narrow canals! Tardebigge on the Worcester and Birmingham Canal has 30 locks and there are 27 locks on the stretch leading into Wolverhampton. But even these are light work compared to Hatton Locks near Warwick on the Grand Union Canal - a flight of 21 closely spaced broad locks climbing around a hill - or the 23 broad locks at Wigam on the Leeds and Liverpool Canal.

Detached waterways

Some waterways have no connection with the main system but are still used for navigation. The best-known example of these is the Norfolk and Suffolk Broads, which have around 130 miles of interconnected rivers and broads. Other popular detached waterways are the short but beautiful Monmouthshire, Brecon & Abergavenny Canal in Wales and the Caledonian Canal that runs from coast to coast in Scotland's Great Glen, passing through Loch Ness on the way.

Tidal waters

Some rivers have tidal stretches that provide vital links between waterways. In these cases the ability to travel will depend on whether or not the tide is high or low. Before entering tidal waters it is usually necessary to consult the lock keeper, who will tell you the best times for passage and give you advice on local navigation conditions. At these points the newcomer to cruising should turn around and go back.

There are various reasons for this. In the first place hire companies do not normally allow their boats on tidal waters. Your boat also needs to be of a suitable type and equipped with items that you wouldn't use on sheltered inland waters - such as very long ropes and anchors - plus an engine

of sufficient power to enable you to make headway against fast-flowing tide. You also need to be able to work out tidal rise and fall if you are to avoid being stranded, and be experienced enough to handle the boat in a current.

Navigation on tidal waters is not for beginners. The time will come when you want to explore routes with tidal sections, and then you must find out all you can beforehand by writing to navigation authorities for information, checking tide tables, consulting lock keepers and enquiring at local boat clubs. But newcomers to cruising should be patient, improve their boating skills before attempting to navigate tidal waters.

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Running engines and generators

Always be mindful about how much noise or smoke your engine, generator or diesel central heater makes outside. Avoid running these near to houses or another occupied moored boat, if there is a chance of noise or fume pollution. Engines and generators should not be run after 8.00pm or before 8.00 am.

Fuel

Most cookers on hire boats run of bottled gas. If you're hiring a boat you can be fairly certain the hire company will have provided an adequate amount for whatever period of time you have hired the boat for.

The main difference between 'boat' gas and 'domestic' gas is that you should always turn boat gas off at night, or if you are leaving the boat for some time. In exceptionally hot weather this may cause problems with the contents of the fridge, but normally the fridge will be cool enough to last through the night.

In the unlikely event of a leak the gas, being heavier than air, will collect in the lowest parts of the boat. If you smell gas, turn it off at the cylinder and turn the engine off too.

Water

Water is usually kept in a storage tank on board. On all but the tiniest of boats this tank will be connected to a tap at the sink, where it is pumped out by hand or by electric pump. On a hired narrow boat you will find electric pumps, and you can expect to have both hot and cold water. The boat's water tank will be of a suitable capacity for the number of people aboard, but it will need replenishing from the water points which occur fairly frequently on most waterways. Large cruisers and narrow boats will have a water filler point on deck, and will carry a hose to connect with the water point. There is also a filler cap for fuel; they should be both clearly marked and well separated, but take care not to mix them up! On small boats where the tank may only be accessible from inboard, you will probably find it easier to fill it with a portable one- or two-gallon container - a funnel helps with this. Water points are shown in the navigation guides, and it is good practice to make a daily check on the water situation and the whereabouts of the next tap.

Toilets

All canal boats have chemical toilets of one sort or another. Sea toilets, which discharge overboard, are not allowed on inland waterways. There are two basic types. Recirculation toilets hold the treated waste either in a large sealed tank on board or in a smaller tank incorporated into the toilet unit. Less popular, though eminently practical and simple to use are the 'bucket and chuck it' variety - there's no pump to fail and they're very easy to clean. If you've got a sealed holding tank on board you'll need to find a pump-out point to empty it. These can be found at most boatyards, but there is usually a charge for pumping out; hire companies may have reciprocal arrangements with others in their area, or may refund any

charges.

If you've got a portable unit, you should look out for the small brick or concrete buildings labelled 'sanitary stations'. Some of these are locked, so you need to make sure that you have a key. Your hire company will supply one, but if you're cruising in your own boat, the information that come with your licence will tell you where to get a key. Disposal points are indicated in navigation guides and will usually have water taps and rubbish bins at the same site.

Water discharge and oily bilges

Don't pump oily water from your bilge into the waterway. Well-maintained engines shouldn't leak oil, but check the drip tray under the engine and gearbox regularly. Use biodegradable oils, if possible. Avoid spilling petrol and diesel. If you do, mop it up - don't use detergents.

The toilets on your boat must not discharge sewage into the waterway. There are pump-out facilities for chemical or closed toilet systems at marinas and sanitary stations. Use the minimum amount of chemicals to avoid upsetting the sewage treatment system. If you have a closed toilet system, you may not need to use chemicals at all - so check your manual.

The wastewater outlet from your sink and shower is allowed to flow straight into the waterway. But to help keep the water as healthy as possible, put your cooking waste in the bin, use environmentally friendly detergents and be economical with everything you put down the sink.

Report any pollution or fly-tipping to the Environment Agency pollution hotline on freephone 0800 80 70 60

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Supervising children and dogs

Children enjoy being afloat; on the move there is always something to watch, and careful planning will enable you to visit an amazing variety of places of interest along the route.

Older children will enjoy helping at locks, but should always be supervised. In most canals the water is not very deep except at locks, where the rise and fall can be 12 feet or more. Even if the children can swim, lifejackets and a watchful adult eye are essential at locks. Don't let the children run around the lockside or climb across gates. Make sure they understand how locks work (www.wow4water.net has an excellent interactive game that shows you just this) and don't leave children struggling with a paddle.

Respecting other waterway users

Waterways tend to be quiet, peaceful places. And they're for everyone to enjoy - boaters, walkers, anglers, cyclists and others.

Roaring engines, unnecessary use of the horn, loud music and shouting can all be a real nuisance to other people and wildlife.

Don't put your mooring stakes or ropes where people could trip over them. And if you're passing an angler, keep to the centre of the channel unless they ask otherwise. Reduce your wash, but keep a steady pace. Watch out for signs indicating fishing matches in the area.

Always slow down when passing other boats.

Litter

Please don't throw any waste overboard - even apple cores take a long time to rot. Litter can kill wildlife, and it can cause problems for other boaters by getting tangled in their propellers. There are plenty of waste disposal points at marinas, moorings and along the waterway.

Wildlife

When you go too fast, wash from your boat can damage banks and sensitive plants.

If you see your wash hitting the bank, please slow down. Cut your speed and keep your distance when passing nesting water birds too.

The non-towpath side of the canal is often especially rich in wildlife, so take special care not to disturb plants or animals there. Don't moor on this side unless there are proper mooring facilities.

Reporting emergencies

- Canals
 - Rivers Severn
 - Trent
 - Northeast rivers
- BW Emergency number
'Freephone Canals'
For mobile phone users
01384 215785
- Rivers Thames
 - Nene
 - Great Ouse
 - Medway
- Environment Agency
**Pollution and Navigation
Emergency Hot Line
0800 807060**

There is a breakdown service operated by the Canal Boatbuilders Association (Port of British Marine Federation) 01384 215859

Safety Checklist

- Hold on with one hand whenever you move about on deck.
- Make sure the children wear lifejackets in any situation when they might fall into the water.
- Wear non-slip rubber or rope-soled shoes on board.
- Insist that non-swimmers stay in the cockpit when the boat is moving.
- Make sure that everyone knows where the lifebelt is, and understands how to use it.
- Check that the lifebelt is ready for use.
- Check the contents of the first aid box.
- Never jump off the front of a moving boat.
- Do not try to stop the boat by fending off with your feet or hands - you will have little effect and you may be seriously injured.

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Keep to the right when passing a boat coming from the opposite direction, slowing right down as you pass. If the channel is narrow otherwise each will suck the other's water away and both will go aground. Sometimes passing on the right is impossible, e.g. if a boat is being towed from the towing path, then the correct procedure is to sound two short blasts of your horn as a warning that you intend to pass on the 'wrong' (left) side.

If you overtake another boat, you do so on the left and at normal speed. The boat being overtaken has right of way.

Navigation at night

For everyone's safety, you should use full navigation lights at night on all waterways.

White lights front and back; green light on the right side and red light on the left side.

Aqueducts

As well as going over hills, canals were built across valleys. The most straightforward means of enabling boats to go across a valley would usually be to construct an embankment. Building an aqueduct, though, is a far more elegant solution.

Aqueducts are essentially bridges that carry water. The Romans brought the idea of aqueducts to Britain. More than 1,500 years later this technique was employed by the engineers of the canal age.

Tunnels

Tunnels vary not only in length but also in width. Some permit two boats, but others are only wide enough for one boat to pass through. Check notices at the entrance for any special instructions or entry times.

Before entering a tunnel:

- Switch on headlight and also some internal lights. Make sure that additional lighting in the form of a waterproof torch is available for the person steering.
- Extinguish all naked flames except pilot lights.
- Do not smoke or use cooking appliances.
- Check that there is no boat already in the tunnel coming towards you if it is too narrow for two boats to pass.
- Ensure nobody is on the roof or sides of the boat.

On entering a tunnel:

- Travel at a moderate speed and steer by looking at only one side of the tunnel.

- Move the tiller (lever used to turn the rudder of a boat from side to side) as little as possible, but watch out for the changing profile of the tunnel - tunnels are seldom dead straight!
- Remember to keep a distance of at least 270 yards from the boat in front of you (about 2 minutes apart at normal cruising speed).
- If traffic is two-way, keep a good look out for oncoming boats.
- If you have to stop for any reason turn off your engine. This will avoid any danger from exhaust fumes.
- If you break down, sound long blasts on your horn to attract attention. Do not swim out. As a last resort, you could try to push the boat out using a boat pole.
- Arrows show the shortest route out and will glow in the dark if your lights fail.

Bridges

Manual swing bridges

- Let your crew off well before the bridge - it's easier then to get the boat lined up correctly. Unhook the retaining chain and give the bridge a good - but controlled - shove. You might need to slow the swing down to stop the bridge bouncing back across the canal.
- When the boat is through, push the bridge firmly into place and put the retaining chain back on.

Manual lift bridges

- Pull the chain hanging from the balance arm. When the bridge is open, sit an adult on the arm to keep it raised until the boat is clear.
- Gently lower the bridge by the chain, taking care not to let it drop.

Mechanised bridges

- Mechanised bridges are either opened using the windlass, or are powered and need a navigation authority facilities key. Always follow the instructions

If a bridge breaks down, don't try to force it. Call the local navigation office for help. There should be a phone number on the bridge instructions. If not, call the local navigation authority office.

Sound Signals (Rarely used and seldom understood)

- One short blast - I'm turning to the right.
- Two short blasts - I'm turning to the left.
- Three short blasts - I'm in reverse.
- Four short blasts - (followed by one, two or three blasts as above) - I'm about to alter course.
- Five short blasts - I have run aground.
- One long blast - Sound every 20 seconds when approaching blind spots, when approaching a lock or moveable bridge and requiring either to be opened, and when entering a tunnel.

Guidance Note 8: Locks

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How to operate a lock

A lock is basically a chamber that holds water and accommodates the boats to either lower or raise them to a lower or higher level. A lock is therefore needed to follow the level of the ground.

Locks are quite simple things, with boats going into the lock then the crew shutting the gate(s) behind the boat. If the lock is lowering the level of the canal, it is simply a matter of letting the water out of the other end until the same level is reached, then opening the gate(s) to proceed on the lower level.

If the level is up, it is just a matter of letting water in the lock from the higher level, until again, the water in the lock is level with that above, then proceeding on the higher level.

Always share a lock with other boats if possible. Better to wait a few minutes than to close the gates on an approaching boat and waste up to 80,000 gallons or more of water! For the same reason, always wait your turn at a busy lock. Be courteous and don't prepare locks ahead of you if you can see boats coming in the other direction. Check that no rubbish gets jammed in the gates as this can cause leakage. You will need a boat hook to clear any jammed rubbish, and may need to open the gate again to clear it away.

Always ensure that all gates and paddles are closed after you leave a lock, unless you see another boat approaching, in which case leave the gates open to help them. Never dangle your arms and legs over the side of the boat or the lock as they can get crushed between the boat and lock side.

GOING UP	GOING DOWN
<ul style="list-style-type: none"> • Close all gates. Ensure top paddles shut. • Open Bottom paddles to empty lock • Open doors and enter. • Close doors and bottom paddles • Open top paddles to fill lock • As the boat rises, ensure that the bow does not snag on the forward lock gate • Open top gates and exit 	<ul style="list-style-type: none"> • Close all gates. Ensure bottom paddles shut. • Open Top paddles to fill lock • Open doors and enter. • Close doors and top paddles • Open bottom paddles to empty lock • There is a sill (step) behind you under the top gate. As the boat falls, stay forward in the lock or your boat may strike it as the water level falls. • Open bottom gates and exit

Staircase locks

After operating a few dozen locks most boaters feel thoroughly at home with the

procedure but an encounter with staircase locks can forbade even experienced crew. A lock staircase, or riser, is defined as at least two adjacent locks where the upper gates of one lock serve as the lower gates of the next. This means that there are no gaps between locks and on leaving one lock the next lock in the staircase is entered immediately. This method of operating staircase locks is somewhat different from that used for single locks and there is a variety of lock designs which doesn't really help you get to grips with them.

When you are travelling through a staircase you need to think about the direction of the water flow. This is because when you arrive at the bottom of a three-lock staircase, just as a boat coming the other way has left the bottom lock; whereas at a single locks this would be is good news, as you can go in and fill up the lock; with a staircase the top two locks will also be empty so there is no water to fill the bottom lock. You must fill the top two locks before filling the bottom lock otherwise you will not have enough water to take you to the top. This helps to explain why staircase locks need more water; it needs two locks full of water to get to the top where one lock-full from the summit level would suffice on flights composed of single locks, no matter how long the flight. If the staircase had four or five locks there would be three or four locks to be filled using even more water. If you follow another boat up the staircase all the locks are full, you can just empty the bottom lock, enter and fill each lock as you progress up the flight. This is easier and uses only one lock of water instead of two.

