



# Hillingdon Narrowboats Association

## Training Manual

Version 09/22.03.2024

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# Welcome!

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Dear Trainee,

On behalf of Hillingdon Narrowboats Association, I'd like to thank you for choosing to train with us. No matter which of our courses you've chosen, you can be sure that you'll go away having learned the skills necessary to competently handle a 70-foot long narrowboat safely on the canal system.

You may be training for our Competent Crew Course, the Boat Handling Certificate, or the more advanced Certificate in Community Boat Management. You may, of course, simply be coming back for a refresher. Regardless, both myself and my team will spend our time helping you to learn as much as you can take on whilst you're here. As we go through the course, tick off the skills on the checklist that you're happy with – that way, you can be sure we've covered all the elements at the course and that you understand them.

We can almost guarantee that you'll have a fantastic time - even if it rains – and you'll see some fascinating sites in and around the canal: from wildlife, to abandoned industry. You'll learn a little about the history of the canal system, and you'll pick up all kinds of knowledge as we go.

Depending on the route we take, look out for the Hanging Monkey, just north of our boathouse; see also if you can spot Spiderman as we head into Little Venice. You might see the floating Chinese Restaurant, an abundance of coconuts, and – if we go through the Islington tunnel, absolutely nothing but pitch darkness!

Enjoy your time, and ask as many questions as you like.

Best wishes

*Dave Wright*

Chairman Hillingdon Narrowboats Association

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# About this Manual

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During your training, you'll learn a number of elements. Our courses are structured around a checklist of skills, and although it would be nice to cover these in strict order, that's simply not possible when learning outside in the real environment. In a classroom, yes, but with different skill and experience levels, and on a canal when many different things are going on, a linear learning program simply isn't possible.

As we go through the course, check off the skills that you've learned along the way, and if you have any questions during the course, just ask. Our final half day will be used to go through the checklist as a group – that way, we have time to explain any points you're unclear on, and also the time and space to demonstrate practically anything you're not quite clear on.

By the time we return to the Boathouse (or earlier, if we agree to finish the course elsewhere) at the end of the course, we'd hope your checklist is completed, which will leave just a group debrief, course evaluation and any feedback.

If you have any questions, at any time, please speak to any one of your trainers, or, if necessary, approach the Senior Trainer who is available either on the course, or by telephone.

# HNA Safety Briefing Notes

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**To be given before moving off to all on trip including to other leaders and Skippers.**

## Welcome

Welcome the Group and explain who you are and your role on the trip. Explain that safety is your prime responsibility. To ensure that the trip is safe and fun a few rules are necessary but these should not stop any fun on the trip just keep everyone safe.

- There should be no running inside the boat and the gangways should be kept clear of shoes, sleeping bags clothes etc.
- The gunwales should not be used for getting from front to back of boat except with the Skipper's agreement.
- Standing on the gunwales is unnecessary and dangerous especially when going into a lock.
- Standing on the roof or moving from boat to boat when the boat is in a lock is highly dangerous: if you should fall in there may be nowhere for you to surface and currents in a lock are very strong.
- To get from the front to the back of the boat, it is safest to walk through the boat. If allowed by the skipper it is possible to walk along the roof.
- Do not hang over the side: keep arms, legs, etc inside the profile of the boat as we will be going through bridge holes, locks and passing other boats.
- If allowed on the roof, face forward and keep an eye out for bridges and if told to duck or get down lay flat immediately: don't look around so see why.
- When the boat is stopping or approaching a lock or bank, never jump off the boat until it has stopped then check with Skipper to see if it is safe to step off.
- If given or thrown a rope only pull it when told to do so by the Skipper. Otherwise just hold it.
- Tie up the boat only when told to do so, and keep your fingers away from the bollard as they can get jammed in the rope.
- If a fire should break out Shout **FIRE** and then go to either end of the boat; if possible, go to the front of the boat. The Skipper will direct the boat towards the bank: listen for his or her instructions.
- Never rock the boat unless required to do so by Skipper as things may spill or fall off the cooker.
- Make sure that you only put what you have eaten down toilets as they are pumped out when the trip ends and anything else will block the pump-out system.

**On arrival at the first lock**

Get everybody including other leaders off the boat, and walk to the lock. Explain that all passengers and crew are responsible for everyone else's safety and everyone should keep their eyes peeled for danger, such as safety catches not on, or for people running. Reminder everyone that many windlasses have two holes for the spindle to go in and to make sure you use the correct one: if the spindle is tapered use the smallest hole.

For experienced groups

- Remind about ground paddles first and the danger of opening gate paddles too early and to check whether any boats are coming before turning locks around.

For inexperienced groups

- Explain the workings of a lock and NEVER to remove hands from windlass when it is on the winding gear. Show the workings of safety catches.
- There are many trip hazards around the lock so walk and keep eyes peeled.
- Check that gates are closed and paddles down at other end of lock before opening paddles.
- Always remove windlass from paddle gear when finished.

**Man Overboard Drill**

If anyone should fall overboard or into a lock shout very loudly **MAN OVERBOARD** and keep looking and pointing at the person that fell in. If they can't be seen look at where they fell in. Make sure the Skipper knows what has happened and obey Skippers commands. He will make sure the boat propeller stops turning, will take command and arrange rescue.

- Do not grab or pull person out of water as this may injure them.
- If you should fall into the canal swim away from the boat or walk to the bank.
- If someone falls into a lock drop all paddles straight away and try to see where the person is in the lock they may not be able to surface and could be trapped under the boat. Alert the Skipper and obey instructions.



# Skills Checklis

## ROLES OF THE CREW

- Who's who on board
- Responsibilities of Steerer
- Delegation of duties
- Ability to control the boat
- Ability to control the crew

## BOAT HANDLING

- Steering, Propulsion & Engine
- Winding & reversing
- Rules of the road
- Speed limits
- Breaking wash
- Courtesy to others
- Running aground
- Night cruising
- Strong wind
- Ice
- Leaving the boat unattended
- Weirs
- Ropes, Hooks and Poles
- Sound signals
- Falling in
- Use of lights
- Swing & lift bridges
- Tunnels
- CRT 'Watermate' key
- Breakdown
- Fire

## SAFETY PROVISION

- Life belts and Throw lines
- First Aid Boxes
- Extinguishers and Blankets
- Weil's disease
- Life Jackets

## USE OF LOCKS

- How a lock works
- Types of lock & paddle gear
- Safety at locks
- Windlasses & safety catches
- How to leave a lock
- Sharing locks
- Opening & closing gates
- Not getting hung up
- Lock wheeling
- Fire and Emergencies

## BOAT MAINTENANCE

- Taking over the boat
- Daily Checks
- Starting/Stopping the engine
- Taking on water
- Pump outs
- Taking on diesel
- Changing gas bottles
- Pumping the bilges
- Weed hatches and blade
- Leaving boat at end of trip

## DOMESTIC APPLIANCES

- Lighting gas appliances
- Use of cooker & oven
- Central heating
- Use of coal stove
- Use of toilets

## CONTROL OF CREW

- Supervision at locks
- Moving about the boat
- Conduct at locks
- Safety in tunnels
- Night time cruising
- Cooking arrangements
- Eating arrangements
- Life jackets
- First Aid

## PLANNING

- Planning the route

- Places to moor & wind
- Stoppages & restrictions
- CRT (BW) staff
- Booking a boat
- Maximum numbers
- Insurance and Licence

**HOUSEKEEPING**

- Water
- Heating
- Cooking
- Refrigeration
- Waste
- Toilets
- Showers
- Gas leaks

**RISK ASSESSMENTS**

- Why, When and How
- HNA Risk Assessments

**COMMUNICATING**

- Hand signals
- ...with crew
- ...with passengers
- ...with third parties

**FOOD SAFETY**

- Good hygiene practices
- Meal planning

# Roles of the Crew

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When you work on a boat, you'll find that you need to take up a number of roles. You may move from one boat to another, depending on where you happen to be on the boat. If there aren't many crew, you'll find yourself combining roles. Each Skipper will treat the roles a bit differently. But you and the others on board need to find out what each role demands. Then you can work together as a team and in an emergency, you'll know what to do. This is important, because communicating in an emergency is often difficult. The boat should have designated crew areas and these should have non-slip paint applied: if in doubt ask the Skipper

## **Skipper**

Has overall control and responsibility of the boat, its crew and passengers, even if he isn't steering at the time. He makes decisions, is responsible for giving the safety briefing (or making sure it's given if he delegates that job), ensures he has a list of names and emergency contact numbers for all passengers. In an emergency, he will take control, decide how and where to rescue a man overboard, or whether emergency services are required.

## **Steerer**

He will steer the boat, instruct other crew members on what he is about to do, and what he wants the crew to do. Often, the role of Skipper and Steerer are one and the same, although it is not unusual for the Skipper to hand steering control of the boat to one or more steerers, even if they're inexperienced, so long as they're watched and supervised carefully.

## **Crew**

These man the lines and manoeuvre the boat using them at the direction of the skipper, most often around locks. They'll also take instructions from the skipper at locks, for example, which gate to open, or when to open and close paddles, if they're unsure. They also look after the passengers, acting as the primary point of contact for any questions and problems, asking the skipper only if they are unable to resolve them.

## **All**

Everyone is responsible for the safety of each other, which includes looking out for unsafe behaviour, man overboard, lock-side safety, to name just a few. Anyone on board is entitled, and encouraged, to point out unsafe behaviour to one another. Safety is everyone's responsibility.

## **Delegation of Duties**

The Steerer will ask other crew members to aid in the operation of the boat from time to time. This may be taking lines, operating locks, or any one of the myriads of other tasks. It's the Steerer's job to ensure that those tasks are undertaken successfully to ensure the safe operation of the boat. The Steerer's ability to control both his boat and his crew is essential for a safe and successful trip.

# Boat Handling

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## Steering

Moving the boat is called 'Steering' – and it is comprised of all the other parts which come together under that title. Good steering comes with experience and confidence, as well as the ability to predict how the boat will operate under certain conditions (wind, current, weirs, etc). It is only when you've experienced those conditions that you'll feel comfortable with them, and no amount of description can replace experiencing them yourself.

When steering, understand that if you point the tiller to the right, then the back of the boat will move in that direction, and the boat will pivot at around the half-way point along its length, resulting in the front going to the left. Pointing the tiller left will have the opposite effect, and make the boat turn to the right. Be careful not to over-steer or over-compensate for a turn: if this happens, you'll be zigzagging along the canal! The best place to stand when steering is in front of the tiller not by the side of it as this can be dangerous. Some boats have an arc painted on the deck below the tiller to remind you not to stand in this area. Make sure nobody else stands in the arc of the tiller arm either.

## Propulsion

The engine drives, via a gearbox, the prop shaft and ultimately the propeller (also known as the 'blade') at the rear of the boat. The daily checks that should be carried out are a minimum, and on occasion, you might want to perform additional checks, particularly around troubleshooting. Basic troubleshooting may resolve your immediate problem, or will allow you to describe in better detail, the problem you're having when you call for assistance.

A primary cause of power loss is weed or other debris fouling the blade. You'll observe the loss of power, a change in pitch, excessive smoke from the exhaust, unusual splash or wash, or any other sort of "it doesn't seem right" feeling. You can try shifting into reverse gear, then forward gear, then reverse gear a few times, to see if you can 'chuck back' any obstruction, but if that doesn't resolve it, you'll need to investigate further via the weed hatch.

Remember to switch off the engine and remove the key before examining and clearing any obstruction around the blade.

## Engine Controls

Ensure you know how to start and stop the engine, and that all steerers know that the engine should be put into neutral immediately in the event of a man overboard. Be aware of the mechanism to disengage the gearbox (either by pushing the centre of the control in, pulling the control out, or some other mechanism). Trying to start the engine with the revs on half throttle, and the gear engaged will be difficult, if not impossible. Lack of drive may be caused by the gearbox not being engaged, so check this control if there are any drive problems.

**Coming to a quay or bankside**

Usually quays are approached at 15 – 20°. If necessary, before nearing the quay, use reverse on the straight approach to get the speed to a minimum. Just before the boat touches, turn to be along the line of the quay and drift the back alongside. Stop the boat with the back rope if necessary. When the rope is around the bollard, go gently into reverse to complete the stop. The secured rope will prevent the water forced between boat and quay from pushing the back out.

**Turning**

Going from forward to reverse gear, pause with the engine in neutral. Then set the tiller to point where the back of the boat is to go and only then engage the gear. Going forward you may use bursts of power to swing the boat without it going forward. Going back, you need steady power and patience to wait until the boat starts to move. Don't rev up because the boat doesn't respond immediately – that will result in excessive prop effect. But remember you can use the effect to help the boat respond how you want it to.

**Winding**

When a boat is turned around, it's known as 'Winding', something carried out in 'Winding Holes' which are wider sections of the canal designed to give a boater the necessary space to turn. Typically, a winding manoeuvre will consist of a sharp turn, followed by an amount of going backwards and forwards, like a three- or five-point turn in a car. Careful use of the tiller and throttle will soon make this a useful skill.

**Loss of Power**

A loss of power – either through engine failure, gearbox failure or steerage failure, is rarely disastrous on a canal, and generally more of an inconvenience. However, near weirs or other boats, it can be dangerous. If there's any likelihood of a collision, warn your passengers with a loud BRACE or HOLD TIGHT shout. Use boat poles to fend off any stationery objects, and attempt to get a rope around something solid, such as a bollard, post or another boat. It's always easier to remediate a situation if you can get to dry land.

## Reversing

Reversing a boat can, like a car, be difficult, although the ability to reverse long distances may be useful from time to time. Long narrow boats reverse more easily than short broad ones. But all boats are difficult to reverse because:

- Water is sucked from behind the boat, through the propeller and then is pushed along the two sides of the boat itself. A slight turning of the boat results in more water going one side than the other, making the boat swing further in the direction of the turn. Correction can easily result in the build-up of an opposite swing. The situation is always shifting.
- As the propeller turns it moves the back of the boat to one side. Which side depends on the propeller/engine combination. Going forwards this prop effect may not be very noticeable, but in reverse it is more so. It provides a start to the swinging process above.
- Swings can also be started by wind, nearby changes in depth, pushing off, or a moment's inattention.
- Until the boat is moving – forwards or in reverse – there is no flow of water to allow the rudder to work. The propeller is less efficient in reverse so it takes longer to build up speed and be able to steer the boat. Whilst waiting, you have no engine power to correct swinging.
- You need to watch closely and all the time for the bow of the boat starting to swing off line. Once it starts it is very difficult to control. Make early small corrections to prevent this.

### Reversing a boat without bow thrusters

1. Bring the forward moving boat to a stop with the least possible use of reverse gear. Allow plenty of time, use only moderate revs and slow the boat down whilst it's going in a straight line in deep water away from obstructions. In an emergency, when you can't do this, still don't over rev – white water means the propeller isn't working well. Seek to control the boat by using the prop effect to advantage, having fenders and ropes available to help.
2. Build up revs in reverse slowly. Otherwise the propeller will walk the boat into a swing. As speed builds up keep the revs moderate, enough to move the boat against wind or current. Keep the revs steady – bursts don't work. Point the tiller straight back for a moment or so, until the boat starts to move. Then point it where you want the back of the boat to go. Maybe not quite at the target point, a little off to correct for propeller walk, wind and current.
3. The boat will not always respond. Watch carefully for this so you can take it out of gear and come to a halt. Then go forwards to re-set your course. Start reversing again. In difficult situations you'll have to do this several times.

## **Rules of the Road**

Generally, you should travel along the centre of the canal, which is the deepest point, moving over towards the right to pass other boats, so that the left side of your boat passes the left of the boat coming towards you, much like driving abroad.

In some cases, you may decide to pass on the left of the canal. This might be if one boat requires a greater depth of water, is mooring or setting off, is difficult to control, etc. Whatever, make sure your intentions are clear to the skipper of the other boat, and that his intentions are clear to you. Wide and sweeping hand signals are best for this.

A boat entering the canal from a side junction (such as leaving the Paddington Branch and turning right onto the Main Branch of the Grand Union) will have right of way, because he can't see around the corner. He would normally give one long (5-6 seconds) blast of his horn, which is a warning, not an expression of anger!

## **Speed Limits**

The rule, not law, is that 4mph is considered the 'speed limit' on the canals. Effectively, this is a fast walking pace, and should not provoke a breaking wash (white-topped breaking waves) at the bank. Passing moored boats, and you should slow to, literally, a crawl. Passing a moored boat at speed will cause it to rock (and the inhabitants to come out and shout at you!), and the motion can also cause staked boats (those moored to stakes in the ground, rather than bollards or rings) to work loose.

For working out how far you can travel, a good estimate is three lock miles per hour: this means you can travel three miles along a flat canal with no locks, or three locks close together, in a single hour. Or a combination of both (such as one mile and two locks, or two miles and one lock). It is, however, only an estimate, and additional canal traffic, or moored boats, can affect this timing.

## **Breaking Wash**

As noted above, a breaking wash will indicate excessive speed. It can also erode the canal bank, wash away nests made by ducks and birds, and in some cases, causes a small wave over the tow path, none of which will enhance your popularity with other canal users!

## **Courtesy to Others**

If you're being followed, and feel that the boat behind wants to overtake, slow down, move over, and make the appropriate hand signals. Whilst the canal moves at a slower pace than real life, being held up for hours can be grating, especially to a working boat, or a hirer who has a deadline to meet. Invariably, you'll catch them up at the next lock anyway, and if you're lucky, they may have the lock prepared for you.

Waving, calling "Good Morning" to passing boaters, and offering to help at locks are all part of canal life.

When mooring, ensure your stakes and ropes don't cross the tow path. You might consider using polythene bags tied to the stakes to make them more visible to passers-by.

## **Running Aground**

If you do run aground, it's likely to happen near the edge of the canal. There are a number of strategies you might want to consider to free yourself:

Generally, most times you'll be able to free yourself by reversing. Don't use too much power, rather gently reverse off of the obstruction, trying to get your back end into deeper water. Consider using the boat pole to push off the obstruction – never use the pole as a lever. You might also consider moving your crew away from the part of the boat that is stuck.

If all else fails, consider asking a passing boater to tow you off the obstruction. This should always be a last resort, and you should seek HNA's advice before attempting this.

Running aground is unlikely to damage the boat in any way, unless you manage to strike the blade on a hidden obstruction.

## **Night Cruising**

CRT discourage, and HNA forbids, night cruising without the express permission of the Project Manager or Chairman. Permission may be given depending on which part of the canal you're cruising, the weather conditions, who your passengers are, and, of course, your level of experience.

If you do cruise at night, switch off any back cabin lights to maintain your night vision, avoid using torches, and follow the middle of the canal. At locks, only have one person work the lock, so you can keep sight of them: too many people around a lock may make it difficult to see if any crew member has a problem.

## **Strong Wind and Currents**

Both wind and current can make boating more difficult, although both can be used to your advantage from time to time. Travelling against a current can significantly slow your journey, and wind can make turning difficult. If winding, consider the flow of water to see if you can use that to help turn your boat, so you turn with the current, rather than against it. Experience will help you determine the exact behaviours.

## **Ice**

When boating on a frozen canal, you have little control over direction of travel – the front of your boat will follow any break in the ice. If possible, have someone at the front of the boat break the ice with a boat hook to aid steering.

Also, locks can be especially dangerous if icy, and it goes without saying that walking across the roof of the boat, or along the gunwales is equally risky. Consider modifying your behaviour to enhance your safety.

### **Leaving the boat unattended**

Where possible, avoid mooring in areas which are known to attract problems. On approaching London, try to moor near other boats, as there is safety in numbers.

Consider removing any loose items from the roof of the boat, such as life belts, boat hooks or barge poles. If travelling with another boat, breasting up, and putting loose items onto the boat furthest from the towpath is usually a good idea.

When mooring, make an extra loop around the bollard, and secure the rope on the boat, rather than on the bollard. Often, the act of stepping onto a boat will discourage most anti-social behaviour. In extreme cases, consider cable ties to secure loose rope ends, so they can't be undone easily.

Windows should be shut and locked, and curtains on the bank side drawn. The tiller and tiller pin should be stored inside the boat, and all hatches and doors bolted or locked. Likewise, any windlasses should be removed.

It's often a good idea to leave just one light – preferably an LED light fitting - on.

### **Weirs**

To avoid the canal flooding, weirs will often be found adjacent to locks. At times of rainfall, the current through a weir can be strong, and this can be seen most easily outside HNA's boathouse. Be aware of weirs, and keep away from them, as it can be difficult to extract yourself if caught. You might consider using ropes to prevent getting into further difficulty, and asking a passing boater to assist by towing.

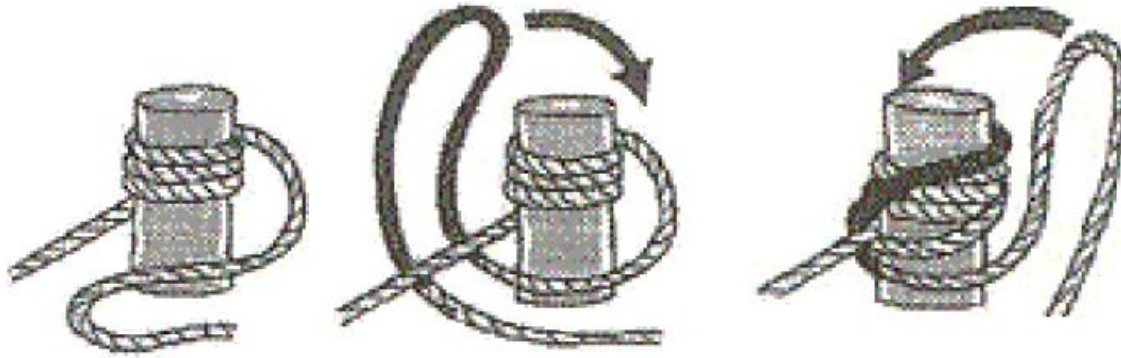
### **Use of Ropes and Knots**

Every boat will have a front line, attached to a t-stud at the front of the boat; a rear line, attached to one of two or more studs at the back of the boat; and either one or two centre lines. Ensure that the ropes are ready for immediate use:

- Front line – kept coiled and attached to the t-stud.
- Rear line – kept coiled, but removed from the stud, and placed on the slide (the sliding hatch cover). Ropes shouldn't be left on the stud, hung over the tiller or tiller pin, or anywhere else they could cause a trip hazard, or are in danger of falling in.
- Centre line – brought back to the steerer position, ready for use.

The front line should be left coiled on top of the gas locker, ready for use. Techniques such as the 'cheese' where the rope is set in a circle are pretty, although useless for boaters. Lines should never be used if knotted, or left to drag in the water. Even if you see some boaters with the rear line attached and coiled at the Steerer's feet, or hung over the swan neck, don't be tempted to copy this. It's too easy to knock it off, and get it wrapped around the blade.

HNA's recommended knot for securing the boat is the Canalman's (or Boatman's) hitch, illustrated on the following page.



### Mooring on Rivers or Canals with Current

HNA's boathouse is not, as expected, on the Grand Union Canal, but rather part of the River Colne, and as a result, has a slight flow of water towards the lock and adjacent weir.

When mooring, it's important to get the up-stream end of the boat into the bank first of all, and to get someone off with a rope to hold it in. The flow of water will then bring the other end in with little or no effort on your part.

When mooring at HNA, if you're heading up-stream (so, you've just left Coppermill Lock and approaching the boathouse on your right), you'll be against the flow. Get the FRONT of the boat in, and tie up. Then the back will be moved in with the flow of water. When mooring at HNA, if you're heading downstream (so you're approaching Coppermill Lock, and the Boathouse is on your left) Get the BACK of the boat in first, and the front will move it by itself. If you attempt to tie the DOWNSTREAM end of the boat up first, the other end will simply swing out across the canal.

### Boat hooks and poles

If fitted, boat hooks and poles should rest in the designated holders on the roof of the boat. Remember when using a pole, that it should be used to push with, not as a lever: if used that way, it will snap.

### Sound Signals

Each boat is equipped with a horn. Use the horn to indicate your intentions to other vessels:

- 1 blast = going to the right
- 2 blasts = going to the left
- 3 blasts = I'm trying to stop or go backwards
- 4 blasts – pause – 1 blast = turning round to the right
- 4 blasts – pause – 2 blasts = turning round to the left
- 1 long blast + 2 short blasts = I can't manoeuvre
- 1 extra long blast = warning at tunnels, blind bends and junctions

Perhaps, more importantly, other boats will use the same signal to indicate to you *their* intentions.

## Man Overboard

Ensure you have read and explained HNA's Safety Briefing to all your passengers and crew at the start of every trip.

Canals are generally safe places, although should someone fall in, there are two different processes:

- In the canal:

If anybody falls in, a loud shout of MAN OVERBOARD should be made. Anybody who can see the person should stand up and point to him, or where he was last seen, so that the Steerer can see where he's is. The Steerer should immediately put the engine in neutral, and assess the situation. Once the person is seen, the life belt should be thrown to land near him. Avoid aiming at the person.

If possible, ask the person to stand up, or get to the bank – it's far safer to get to them at the bank, rather than bring them onto the boat. If that's not possible, get them to the rear of the boat, by using ropes, barge poles or getting them to swim. Do not attempt to get a person into the boat at the front. At the back, they can use the rudder as a step up. A person getting back into the boat under their own steam is the safest.

- In a lock:

If anybody falls in, a loud shout of MAN OVERBOARD should be made. Immediately, all lock paddles should be dropped. Anybody who can see the person should stand up and point to him, or where he was last seen, so that the Steerer can see where he's is. If not already, the Steerer should immediately put the engine in neutral, and assess the situation.

If there are two boats in the lock, there may be little room for the person to surface. As soon as the person is seen, move boats away by pushing against the wall, or, if they're between, separating the two boats. Avoid moving boats until you can see the person, as you may inadvertently trap or injure them.

Only once he's been seen, should you consider using a life belt, rope or pole to rescue him. A life belt may stop you from moving the boats around. Again, lead him to the rear of the boat or to a ladder, and recover him to the boat.

## Use of Lights

Each boat is equipped with a Tunnel Light, which is, as the name suggests, for use in tunnels. The light is to be seen by, not for seeing with. Navigation lights are not required for night cruising on the canals, and cruising on tidal waterways, such as the Thames is not permitted unless HNA have given express permission for this, and, even then, only in daylight. Indeed, HNA's boats don't have the necessary navigation lights for night cruising on tidal waters.

Internally, all domestic power comes from batteries, unless the engine is running. It is therefore important that unneeded lights are turned off to conserve power. HNA's boats will automatically switch off the domestic battery supply if the voltage falls below a certain level to avoid damaging the batteries. The effect of this is that should the batteries drop below a certain voltage, the lights will simply go out – they won't get dimmer and dimmer as you might expect.

## Bridges

You are unlikely to encounter swing, lift or mechanised bridges around the London area. They are more common further north, and you may need a windlass, BW (CRT) key or other key to operate them.

- Swing Bridges

These pivot from one side. Offload a crew member to operate the bridge.

- Lift Bridges

These operate by pulling a chain on a counter-balanced arm to lift the bridge. An adult should sit on the arm to keep it lifted whilst passing.

- Mechanised Bridges

These vary in design, and may also have traffic barriers.

- Fixed Bridges

By far the most common you'll see on the canal. These may be small bridges, with a single-lane track over them, or much larger. Generally, the tow-path will continue under the bridge, but this isn't always the case.

A common question concerns right-of-way at bridges, and a good rule of thumb is that the boat nearest to the bridge has priority. Be aware of hire-boaters who may panic, possibly using reverse, which may result in their boat swinging across in front of you, as they attempt to manoeuvre. Regardless of who has right of way, use the rules of etiquette and possibly hand signals to indicate your intention.

## Tunnels

The two tunnels nearest to HNA are the Maida Vale tunnel and the Islington tunnel. Both these, and other tunnels, will have a notice board outside advising you of the procedure. Some tunnels are two way, others are one-way, in which case, you'd need to look first to see if another boat is coming towards you.

In tunnels, make sure your tunnel light is on, that any lights in the back cabin are turned off to preserve night vision. You may want to have one or two internal lights on to help illuminate the tunnel walls. Make sure any naked flames (i.e.: cooking) are turned off. The gas pilot light is fine to remain lit.

Advise your passengers to keep hands and legs inside the profile of the boat, not to take photographs with a flash, and not to use torches. Importantly, tell them not to shout or scream, as it can be hard to hear if anyone has fallen overboard.

In the event that someone does fall overboard, there are chains stretched along the length of the tunnel that they can hold on to and pull themselves along with. There are also glow-in-the-dark arrows on the roof of longer tunnels, pointing to the nearest exit.

Steer in the middle of the tunnel. Even if wide enough, there is no overtaking in tunnels.

In the event of a breakdown mid tunnel, post someone front and rear to warn other boaters.

## CRT 'Watermate' Key (also known as a 'BWB Key')

The British Waterways (now known as Canal & River Trust) key will unlock water points alongside the canal, as well as anti-vandal locks in London, shower and toilet facilities in the basins, and refuse disposal points along the canal. All boats have at least one key, stamped BWB or similar. They can also be purchased from boat chandlery shops. Different parts of the canal further north may require a different key, so seek advice from HNA first if this may apply to you.

## Breakdown

In the event of engine failure on the canal, get to the bank and moor the boat. There are a number of basic diagnostics checks you can do first, before calling for help:

- Cooling water (if applicable)

Is there sufficient water in the engine? Was it checked every morning? Carefully remove the water cap if in doubt, and check the levels. Use a heavy towel over the filler cap, and wait 30+ minutes if possible for the water to cool before opening the filler.

- Oil

Was the oil checked this morning? Remove the dipstick, clean it, reinsert and remove, and check the oil level.

- Blade

Is anything wrapped around the blade? Remove the keys and check the blade via the weed hatch.

- Diesel

Is there sufficient diesel? Check using the dip sticks provided. You may be able to identify a nearby marina where you can purchase fuel, with the aid of your Nicholson's Guide.

If all else fails, contact HNA's emergency number, 07860 857 877

## **Fire and Emergencies**

Emergencies are rare on the canal, but they can happen from time to time. Other than a Man Overboard, you may encounter a fire or other emergency that may require third-party assistance.

### **Fire**

In the event of anybody finding a fire on board, they should shout FIRE loudly, and give an indication of the location of the fire. The Steerer should immediately head for the bank, and all passengers and crew members should make their way to the front or rear of the boat, ready to evacuate onto land. If possible, and if it can be done safely, the gas bottles should be turned off.

Attempts to fight the fire should only be made if the fire is sufficiently small. If there is any doubt about whether efforts will be successful, the boat should be abandoned and left to burn.

Fires can potentially start anywhere on a boat – not necessarily only in the kitchen or engine room.

Fire extinguishers are available on the boat, and are checked regularly by HNA. In addition, there should be a fire blanket in the vicinity of the kitchen. Record any usage in the log book.

### **Calling the Emergency Services**

All services: before you start

You need the telephone number you're calling from. You need to know where you want the service to come. Usually, for the ambulance, this will be the point of road access you can get the boat to in the next ten minutes or so. The exception is an injury off the boat such as to the back or from crushing where you can't safely move the casualty.

Some locks now have a post code on the lock sign these will be of use to the ambulance crew.

There is a very good mobile app called "What 3 Words" - this gives a very precise location .

If possible, give a full map reference (e.g. SU154328 – letters either in map corners and/or in key plan at side or bottom of sheet - numbers across before numbers up) if possible. Also give simple directions e.g. 'Where A346 crosses K&A canal at Burbage wharf just North of Burbage village'; 'Where unclassified road crosses K&A canal between villages of Great Bedwyn and Wilton, both a few miles South of Marlborough'

You need to be able to relay information about the emergency.

### **Dialling the number**

You can dial 999 or 112. Some emergency centres can locate the position you're calling from: better if you use a landline, with varying accuracy if you use a mobile. If there doesn't seem to be coverage get to a higher point - the roof of the boat, on top of a bridge or at the top of a cutting. But for an emergency call a mobile phone will access the best network in the area regardless of who your supplier is.

You are connected to a telephone operator who will ask:

- Your telephone number.
- Which service you require – police, fire, ambulance.

You will then be connected to the service centre.

All services will ask for your location. Try to be as specific as possible, using the name of the canal, using landmarks, bridge or lock names or numbers.

If it's a medical emergency, the operator will ask questions to determine the extent of aid required. For example, the ambulance service will ask what the problem is, how many people are involved, who the patient is and his age, whether they are conscious and breathing.

Remain calm, give clear concise answers. Remember that an ambulance will probably be despatched whilst you are on the call, and any further information you can give will be relayed to the ambulance team whilst on route.

It's always helpful to identify an access point to the canal, and the skipper will make the decision as to whether to continue moving to get closer to the access point to facilitate aid. Whatever you decide, offload a crew member, possibly in high-visibility clothing, to meet the ambulance team and direct them.

### **Why we should consider an emergency access plan**

We seldom have a problem meeting up with friends or change-over crews when we agree the rendezvous point together. Usually it is at a well-known canal access point, such as pub, visitor centre etc. The problem comes when we are trying to describe our location to non-boaters such as the emergency services.

As boaters we tend to describe our location as seen from the canal. "Gibbett Bridge" may seem significant as we pass under it. We might have used it many times as a landmark or a timing point. Never having walked across it, we might be forgiven for not knowing that its only purpose is for cattle to cross between two fields.

On a recent Trainer's Course, the subject of an emergency access/medevac plan came up. The points discussed included:

- Having a map with road names clearly marked.
- Clearly marking where access to the bank would be difficult or impossible, (especially relevant when on the river).
- Consideration should be given to moving the boat to a rendezvous point to meet the emergency service, rather than mooring and waiting for them to reach the access point and then moving down the towpath. The injured person may then have to be carried back along the towpath.
- Sending a "lookout" to stand at the rendezvous point to await the emergency service, perhaps wearing a buoyancy aid/life-jacket. This would be highly visible to the ambulance etc.
- The need for all Steerers using the boat to be familiar with the plan.

- The details of the plan, and the annotated map (see example) being in a prominent place on the boat.

### **Gas Leaks**

The first indication of a gas leak is usually a strong smell of gas. Because gas is heavier than air, by the time you can smell it, there will be a significant amount of gas inside the boat.

Immediately, ensure the skipper is made aware of the situation and turn off the supply of gas at the gas bottles. Then ventilate the boat by opening doors, windows and hatches. Ensure that no electrical switches are operated, either off or on as this may cause a spark.

To help ventilate the boat, you should create air movement inside the cabin – you can do this by pointing the boat into the wind, by using books or maps to disturb the air, and you may even consider bailing the gas out with a bucket: remember, being heavier than air, it'll sink to the lower part of the boat.

Only when you're sure the boat is empty of gas, can you turn the gas back on, and start investigating the cause of the leak. You might want to check that the cooker isn't turned on, although a flame failure device should prevent excess gas leakage from the burners. Likewise, if fitted, check that any boiler pilot line hasn't been blown out. Check also that the gas bottles are tightly connected, remembering that there is a left-hand thread on the bottles.

If you are unable to safely determine the cause of the leak, and you can still smell gas, you should not use any gas appliances until further investigation is complete. Check with HNA for further advice.

# Safety Provision

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The boat has a number of safety mechanisms, including life belts, throw lines and fire extinguishers. Ensure you, and any crew, know how to use these.

## Life belts

Three life belts are generally available, and should be equally spaced along the roof of the boat, accessible from the steerer position, the front deck, and somewhere in between. Remember that they should be thrown NEAR the person in the water, and not AT them.

If a life belt has a line coiled around it, keep hold of the line as you throw the life belt in, so that you can recover the person easily.

## Throw Lines

Some boats have throw lines. Ensure you hold onto the end of the line, before you throw the bag near to the person. If you miss, and need to throw again, there is no need to coil the line back into the bag.

## First Aid Boxes

For simple, and essential first aid, each boat is equipped with a first-aid box. Ensure you know the location of the box. You may, as a group leader, bring your own first aid provisions as well, although knowing the location of the boat's first aid box will do you no harm. Please ensure any usage is recorded in the boat log, so that it can be replenished.

## Fire Extinguishers and Fire Blankets

Fire extinguishers are located throughout the boat. Ensure you know where they are, and check that they are serviceable before departure. Familiarise yourself with the types of fires they can be used on, and remember that HNA's policy is not to fight fires: put the boat into the shore and evacuate safely, turning off the gas bottles only if it is safe to do so.

A fire blanket is located in the vicinity of the kitchen area.

## Weil's Disease

Weil's disease is a dangerous infection present in water which can attack the central nervous system and major organs. It is caused by bacteria, usually from rat urine, entering the bloodstream through cuts, broken skin and the eyes, nose and mouth. Flu-like symptoms occur two to four weeks after exposure. Always wash your hands after contact with water or ropes, and shower off if you fall overboard. Visit your GP if you feel unwell within the incubation period, and mention that you may have been exposed to Weil's Disease.

**Life Jackets**

HNA doesn't have a rule on whether groups should wear life jackets or not whilst cruising on canals but offers the following guidance.

The decision to wear them or not depends on the group and any risk assessment undertaken. However, HNA would suggest that life jackets are worn during any period of permitted night cruising for anyone outside, when operating locks in low light conditions, and that you consider them if boating single-handed. Life jackets can be supplied upon request.

HNA would further suggest that life jackets are worn at all times, by all on-board - including those inside the boat - during passage on the tidal Thames or other rivers.

Life jackets are available in child and adult sizes, and should be adjusted to fit so that a clenched fist can fit between the chest and the front of the belt. Life jackets should never be worn under any other clothing.

If your passengers do choose to wear life jackets, ensure you take a few spare ones as well, in case of accidental (or otherwise) inflation.

Note that HNA will invoice the hirer £30 per life jacket inflated in anything other than an emergency.

**See HNA's Lifejacket Policy on the web site.**

# Use of Locks

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## How a Lock Works

A lock can most simply be thought of as similar to a bath tub: it has an upper end, where water enters the lock (like the taps on a bath) and a lower end, where the water leaves the lock (like a plug-hole). Adding or removing water to or from a lock allows you to enter or exit into the adjacent canal where the water is the same level.

Locks are the most dangerous part of the canal system: they are much deeper than the surrounding canals, have fast moving water, lots of trip hazards, and many moving parts. In addition, there is restricted room in the lock chamber itself if someone should fall in.

## Types of Lock and Paddle Gear

A normal lock has two sets of gates, with a chamber of water in between. In addition, there are staircase locks, where the top gate of one lock chamber is the bottom gate of the next. Finally, there are flights of locks: multiple sets of locks up or down a hill, with a short pound – the distance between two sets of locks – in between.

Locks have a method of letting water into and out of the lock, known as paddles. These vary, but generally, the upper gate will have paddles, or sluice gates, set into the lock gate itself. These are opened to let water into the lock. In addition, there may also be ground paddles, which run through a pipe under the ground, and bring water into the lock chamber at a lower level. If the lock has both, you should open the ground paddles first until the water level is covering the gate paddles, and then open the gate paddles. If you open the gate paddles first, the inflow of water may enter the front of the boat and flood and/or sink it. The bottom gates will only have gate paddles.

## Safety at Locks

As mentioned above, locks can be dangerous, unless several basic, common-sense points are adhered to:

- Don't run: there are lots of places to trip and fall.
- When crossing lock gates, keep three points of contact at all times.
- Never leave a windlass on a gate spindle unless you're holding it. Should the paddle drop, the windlass will spin around and could fly off, injuring you.
- Make sure all your passengers – and yourself – keep arms and legs inside the profile of the boat when entering the lock.
- When entering a lock, and intending to go down, ensure your rear end is past the cill of the upper lock gate. If you don't, when the water level drops, the back of your boat may be caught on the cill. This will cause the front of the boat to go down, possibly under the water line. If this does happen, close the lower paddles, and open the upper ones to add water and refloat the boat, then move the boat forward and try again.
- Always use the safety catch when winding paddles up.

### **Use of Windlasses and Safety Catch**

Your windlass has two or more holes in it, to fit the spindle on the paddle winding gear. Always use the smallest possible hole, to ensure a snug fit. Other “experienced” boaters will tell you it doesn’t matter, and that using the larger hole will give you more leverage. Using the wrong hole may damage the spindle or the windlass, and could be dangerous.

All winding gear has a safety catch, like a ratchet. When winding the paddle up, ensure the safety catch is flicked over onto the mechanism, and you’ll hear a repeated clicking sound when winding the paddle up. If anything goes wrong, the safety catch will prevent the paddle from falling, and perhaps causing the windlass to spin. It will also hold the paddle fully open.

To lower the paddle, take the weight of the paddle on the windlass, and either flick the catch out of the way, or hold it up. Wind the paddle down firmly, and replace the safety catch at the end.

Ground paddles may be different, but the principle is the same.

In some cases, you may find that the safety catch is damaged, and may not click when you wind the paddle up. Pay extra attention in this case: you may need to hold the paddle open by using the windlass on the spindle, or force the safety catch to take the strain. Never leave the windlass on the spindle unless you’re holding on to it.

### **How to Leave a Lock**

Best practice is to leave a lock with all gates closed and all paddles down. However, there are exceptions to this rule, and there may be notices on or adjacent to the lock – obey these.

If you are winding just past a lock, and intending to go back into it, or if you can see another boat approaching the lock you’re about to leave, it’s okay to leave the gates open. Courtesy would suggest that if just one boat is coming towards the lock when you leave, that you close one gate for them, and leave the other gate open.

If the gate won’t stay closed, perhaps an upper gate is drifting open by itself, that’s fine – you can leave it.

### **Sharing a Lock**

HNA, and indeed CRT, would encourage lock sharing where possible: it saves water and is more efficient. However, some boaters would prefer not to share a lock, in case their boat gets damaged.

When sharing a lock, you might see the other boat lower fenders into the water, to protect their hull. HNA’s boats don’t tend to use fenders, and there is no requirement to have them.

You might consider using ropes to keep your boat away from the other, if the boater expresses any concern. Adding water into the lock will cause the boats to move around. Don’t tie your boat to a lock bollard: if descending, you may get your boat hung up on the ropes – simply looping around a bollard, and holding the other end is best.

Be aware that some locks taper from top to bottom, so make sure there is sufficient room if two boats share a lock.

### **Opening and Closing Gates**

The safest way to open or close a gate is to push with your backside. This way, you're keeping your back straight, and using your legs to provide the muscle. In addition, if you should fall, you'll simply land on your backside.

Pushing forward, using your arms, will cause your back to be bent. If you should fall here, it's likely that you'll smash your face into the balance beam of the gate.

Always push at the far end of the balance beam, where you have greatest leverage.

### **Not Getting Hung Up**

The cill is the concrete 'step' at the bottom of the higher part of the canal, and will often be visible when the lock is empty. Catching your boat on the cill can be extremely dangerous when locking down, as the rear of the boat will be high, and the front will pivot below the water line, flooding the boat and sinking it.

- If caught on a cill, when descending:
  - Close the lower paddles and open the upper paddles slowly to re-float the boat.
  - Move the boat forward, and try again.
  
- If caught on ropes, because you tied your boat to a bollard when descending:
  - Close the lower paddles and open the upper paddles to re-float the boat.
  - Untie the ropes, and loop them loosely around the bollard, and try again.
  
- If the front of the boat gets caught under the upper lock gates when ascending – this can be difficult, because it'll either hold the front of the boat down, perhaps under water, or it'll lift the lock gate out of its mounting. Both of these are quite rare, as CRT have added flat panels on upper gates to prevent this from happening.
  - Close the upper paddles, and open the lower paddles to level the boat.
  - Move the boat back, and hold out of the way with ropes, then try again.

As skipper, always be aware of what your boat is doing all of the time.

### **Lock Wheeling**

Where you have a number of locks to pass through in a short distance, perhaps a flight of them, it's always useful to send one or more members of crew ahead to prepare the lock for you. Passing through a lock can take up to 20 minutes if you have to turn the lock around for use, and you can halve this time if the lock is already set (in your favour) for you.

The most efficient way to do this is to have two members of crew ahead, so that one person doesn't have to cross the lock gates several times.

# Boat Maintenance

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## Taking over the Boat

Upon taking over a boat, you should complete the Departure Checklist, to make sure you have everything in the boat that is expected to be there. Typically, this will include a number of windlasses, mooring stakes, hammers, rope, the tiller and tiller pin, as well as domestic items.

You would also need to perform engine checks, at least daily, and immediately before travelling on tidal waters (if permitted by HNA).

A boat from HNA will normally have the keys in the gas locker, unless alternative arrangements have been made.

## Daily Checks

These checks should be performed at start of hire, and at the start of each day of cruising:

- Fan Belt
  - Check that it's not too loose. The belt should have some play in it, and should be able to be twisted around a quarter turn.
- Engine Oil
  - Remove dipstick, wipe, replace, remove and check the oil level is between the two marks.
- Water (if the engine is water cooled)
  - Check that water is clearly visible, topping up if necessary. In the absence of clean water, you can top of with clear canal water (so no leaves, weed, etc).
- Prop shaft
  - Using your foot, ensure that the prop shaft turns smoothly.
- Stern Gland Greaser
  - Tighten the stern gland greaser until it's finger tight. This greaser pushes grease into the packing around the prop shaft, to prevent water ingress. It should also be checked and tighten at the end of each day. Determining how many turns should be needed is difficult, and varies from boat to boat, and from service to service. The general rule of thumb is if it needs more than ten turns, and you feel no increase in resistance, it may need further attention. Likewise, if you've turned the handle to the full extent possible, the tube may be empty of grease.

- Clear the blade
  - The blade should be checked for obstruction – see below for details on how to do this.
- Tiller and Steering
  - Install the tiller and tiller pin, and check that the tiller moves freely.
- Check Fluids (Diesel, Potable Water and Black Water waste)
  - The diesel should be checked with a dipstick, available on each boat, which will show the full and empty marks. Assume an inch per day of cruising. The filler cap will be found near the rear of the boat, and is accessible using the hexagonal-headed key.
  - Potable water should be topped off whenever possible, generally a case of filling when you can, not when you have to. Capacity will depend on usage, but minimal showers will prolong the supply. Water can be filled from canal-side water points, which are unlocked by the CRT key, from HNA, or from basins adjacent to the Thames. The water tank is opened using a flat-bladed key, or a 50p coin.
  - Black Water (toilet waste) will be emptied before taking a boat out. If there's any doubt as to the level in the tank, it's worthwhile performing a pump out before leaving. Obtaining a pump out during the cruise is possible; expect to pay £20 or so. HNA will reimburse the cost of one pump out during your trip upon production of a receipt.

### **Starting/Stopping the Engine**

Learning exactly how to start and stop the engine will vary with each boat, but the process is generally similar for all of them.

#### **Starting**

- Ensure that the battery isolators are turned on. These connect the battery to both the domestics and engine starter. In most cases, these are large twistable switches.
- Ensure you have completed the engine checks, if this is the first start of the day.
- Put the throttle switch into bypass – this is done by pressing a button on the throttle lever, pulling the throttle out, or adjusting a similar mechanical switch very close to the throttle. This disengages the gear, so that the engine can start with throttle, without trying to turn the blade.
- Move the throttle to around 50% power.
- Using the ignition key, if this is the first start of the day and the engine is cold, switch to pre-heat for 6-8 seconds. There may be a high-pitched tone whilst doing this, which is normal. After 6-8 seconds, switch to on, and then hold the key in the start position. The engine should start after a few turns. Release the key back to the on position.
- Slowly, rev the engine to full power. Examine the exhaust smoke: it should be slightly smoky, without excessive colour. Revving to full power will ensure that the alternator kicks in: at this point, any high-pitched tone should have ceased.
- Move the throttle back to tick-over position, and, if necessary, depending on boat, re-engage the gear.

- Move the throttle gently into forward, to make sure the blade spins. Repeat into reverse. Move the throttle back to neutral.

### **Stopping**

- Ensure that all mooring is completed, and the boat is secure front and rear.
- Locate and activate the engine stop switch, button or pull-cord. This will vary from boat to boat.
- As soon as the engine has stopped, switch the ignition to off.

### **Taking on (Filling) Water**

Each HNA boat has a hosepipe and adaptors in the gas locker. Water can be filled from canal-side water points, which are unlocked by the CRT key, from HNA, or from basins adjacent to the Thames. The water tank is at the front of the boat, and the filler is opened using a flat-bladed key, or a 50p coin. Run water through the hose for a few moments, to wash out any dust, dirt or insects, before commencing refilling.

The tank should be filled until non-bubbling water comes out the overflow. It can take up to 30-45 minutes – sometimes even longer, if the tap is 'slow' - to fill a completely empty tank.

### **Pump Outs**

Each toilet drains into one or more tanks under the floor, and these need to be emptied at the end of your cruise. The pump out machine at HNA is vacuum operated.

Unwind the hose, remove the cap on the pump out hole, insert the vacuum hose, and open the valve on the hose. It should be apparent when the tank is empty, as a clear vessel allows you to see the waste as it is sucked out. Once empty, add some water using a hose, and then suck that out, to clean the tank. Repeat for a second tank, if fitted.

Upon completion, add a litre of Blue to each toilet – this will help to break down any solid matter in the tank, and also reduce smells inside the boat.

Shower water, sink and basin water, all drain into the canal.

### **Taking on Diesel**

Diesel is available from HNA, and canal side retailers or marinas. The vendor will fill the tank and expect payment. Your boat should have more than enough diesel for your trip, however in the unlikely scenario you require diesel, HNA will reimburse you.

### **Changing Gas Bottles**

Each boat has three gas bottles, with one of those spare. Two bottles are connected at any one time, via an automatic changeover device: if you run out of gas, turn off all gas appliances in the boat, unscrew the hose from a bottle, and attach it to a full bottle. Note that the gas hose is a left-handed thread, which means you'd need to twist it the opposite way you'd expect to tighten or loosen it.

Once complete, turn the gas back on, and relight any appliances. Check there is no gas leaking by taking a small amount of washing up liquid and water and pouring over the connection. If it bubbles then there is gas leaking and you have to secure the connection. Once satisfied that there are no leaks it will be safe for you to relight any appliances.

### **Pumping the Bilges**

All HNA boats have automatic, float activated bilge pumps, each with a manual over-ride switch. If the bilge pump is operating excessively, it may be indicative of a leak. In the engine bay, check the stern gland greaser for tightness. Bilge pumps will continue to operate even if the battery isolator switch is off.

### **Clearing the Prop and Weed Hatches**

Before attempting the following, stop the engine, remove the key, and keep the key in your pocket.

Gain access to the weed hatch. On some boats, this may be a 'wet' hatch, which allows water around the hatch itself; on others, this may be sealed using a bolt with a large T-handled top to it. Whatever, gain access, and open the hatch, so that you can see the blade.

Examine the blade, and look for weed, clothing, rope, wire or other debris wrapped around the blade. Using your hands, boat hook or other tool, remove any obstructions. Once done, make sure the blade spins freely.

Close and reseal the weed hatch as appropriate. Dispose of any collected debris safely – not back into the canal – and start the engine.

**Leaving the Boat at the end of the Trip**

The boat should be secured as shown in the 'Leaving the boat unattended' section, with the addition of:

- Switch all internal lights off.
- Empty the fridge, and leave the door open. This will prevent the fridge from starting to smell.
- Switch off the battery isolators.
- Clear all rubbish and personal possessions, and ensure all washing up is completed, and all items are put away.
- Complete the log book, noting any breakages or damage.
- Check the stern-gland greaser, tightening as necessary.
- Secure all windows, hatches and both front and rear doors.
- Unless arranged otherwise, leave the keys in the gas locker.

# Domestic Appliances

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## Lighting gas appliances

Depending on the boat you use, lighting the hot water boiler, oven, grill, etc, are slightly different. All gas appliances (cooker, boiler, heaters) are supplied from the gas bottles kept in the gas locker at the front of the boat.

Cookers and ovens may have electronic ignition, but in some cases, you need to use matches or a lighter to light them. Matches or tapers are recommended for ovens. Press and turn the appropriate control knob, light the flame, and hold the knob in for 5-10 seconds. When released, the flame should stay lit. If not, repeat, and hold the knob in for slightly longer.

You may find the having front and rear doors open, whilst cruising, may cause the cooker flame to blow out, in which case, simply close the front doors.

Boiler location, use, and ignition procedure varies from boat to boat. The pilot light will always be visible through a small viewing window, once lit.

Hot water is generated in different ways, depending on the boat. Some use surplus engine heat to provide water, where others have a gas-powered boiler.

## Use of Cooker and Oven

Full size cookers are installed in each boat, and should be lit as above. Be aware that in a confined space, items close to, or just above, the cooker may get hot when in use.

Ensure the cooker and oven are cleaned at the end of any cruise.

## Central Heating

Heating systems vary between boats. Some have hot-water fed radiators, other have gas- or diesel-fuelled Webasto hot-air heaters. Seek advice from HNA on any specifics. Thermostats to control the heating are located around the cabins.

## Use of Coal Stove (Where Fitted)

Some boats may have a coal stove fitted in the steerer's cabin. Only smokeless fuel should be used with these.

**Use of Toilets**

It is important that the toilets are not used for anything other than that which you've eaten or drunk, with the exception of toilet paper. Sanitary items, wet-wipes or cleansing wipes should be disposed of in the waste bins in each toilet area. Placing these items into the toilets may block the pump out system.

Toilets are flushed by pressing the foot-pedal adjacent to each toilet. Additional water can be added by raising the foot pedal.

Be aware that if the foot pedal gets stuck in the up position, clean water will fill the bowl and/or waste tank. Check that the foot pedal doesn't get stuck.

# Control of Crew

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## Supervision at Locks

The steerer of the boat is responsible at locks for making sure that gates and paddles are operated in accordance to his wishes and within the best practice of CRT. This means that he should ensure that only the necessary amount of water is used, that gates and paddles are closed when leaving the locks, and that all safety instructions are followed.

During night cruising, where permitted by HNA, it is recommended that only one person work the locks, so that he or she can be closely observed by another crew member for safety reasons.

Children should be watched closely, and, if allowed to operate windlasses, only under adult supervision.

## Moving about the boat

Moving from end to end of the boat is best accomplished by going through the boat, for safety reasons, and the boat gangways should be kept clear of clothing, shoes, luggage, etc, to allow this.

If necessary, and with the approval of the skipper, passengers can use the roof to get from end to end. Gunwales should not be used to move around the boat, nor stood upon whilst the boat is in motion. Standing on the roof in a lock is especially dangerous.

## Conduct at locks

Anybody working around a lock should walk and not run. There are a number of trip hazards around a lock.

Crossing a lock gate to get from side to side can be difficult, especially in ice or snow, wet or windy weather, or when carrying a windlass. Always use the handrail, and never jump between gates and the lockside.

Ensure that anybody operating a paddle uses the safety catch, and that children are supervised by an adult. Listen carefully for the sound of the safety catch in use.

Keep arms and legs inside the profile of the boat when entering the lock – there is a risk of being crushed if the boat gets too close to the wall of the lock chamber.

The skipper should ensure that all instructions are given clearly and unambiguously to crew members working the lock.

**Safety in Tunnels**

Crew and passengers should ensure they remain within the profile of the boat whilst travelling through tunnel. Shouting and flash photography, as well as the use of torches, should not be permitted.

In the event of a breakdown in a tunnel, post someone front and rear to warn approaching boats.

Naked flames, with the exception of pilot lights, should be extinguished.

If anyone should fall in, there are chains along the length of the tunnel that they can use to pull themselves to safety. In addition, glow in the dark arrows are posted on the roof of the tunnel, indicating the nearest exit.

**Night Time Cruising**

CRT discourage, and HNA expressly forbids night cruising without the express permission of the Project Manager or Chairman. Permission may be given depending on which part of the canal you're cruising, the weather conditions, who your passengers are, and, of course, your level of experience.

The skipper should be aware of the location of any crew and passengers outside of the boat during night cruising. In addition, it is recommended that the steerer is accompanied. You may wish to give consideration to life jackets. The rear cabin lights should be off to preserve your night vision.

Finally, pay particular attention to obstructions in the water which may be difficult to see, ensure the tunnel light is on, and consider posting a lookout at the front of the boat.

**Life Jackets**

HNA do not have a policy on life jackets. It is up to the hirer or hiring organisation to assess whether they should use life jackets. If the group wants to use life jackets, HNA can supply adult (blue) and child (red) life jackets. One or two spare life jackets should be taken.

For any travel on tidal water, life jackets should be worn both when outside and inside the boat.

Life jackets are self-inflating upon contact with water, and can additionally be inflated by pulling the tag at the front. Life jackets should never be worn underneath any other items of clothing.

Life jackets that are inflated in error will be billed a re-charge fee.

**First Aid**

HNA supply first aid boxes on all boats. Usage of any of the contents should be reported on the log book at completion of the trip. First aid boxes are regularly audited by HNA.

# Control of Groups

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## Instructions

Your group may be excited at the thought of a day – or more – on the water. Remember to brief them with our Safety Briefing focussing on a few simple instructions:

- Toilets
- Stepping on/off the boat, not jumping
- Lock safety
- Holding ropes, not pulling until asked

## Rules

Similar to the above, these are boundaries that you need to set early on. Consider the following:

- Smoking – if it's allowed, where
- Alcohol – when and where
- Radios and music
- Mobile phone usage, including charging

## Supervision

Whilst everyone is responsible for everyone else safety, you, as skipper, need to keep an overall eye on what's going on. Pay particular attention to:

- Anybody sitting or standing on the roof
- Entering or exiting locks – is everyone on board?
- Tunnels – reiterate the rules about tunnels
- Lockside – no running, three points of contact, no abandoned windlasses
- Safety-catches on lock mechanisms

## Head Counts

Perform regular headcounts, particularly when leaving a mooring or lock.

## Discipline

The ultimate course of action if your group are failing to behave appropriately is to moor the boat, and take the keys and tiller with you as you walk away. However, it's unlikely to escalate to that if you can manage the situation by getting the assistance of the group leader.

## Special Needs

Be aware of any special needs that your passengers might have. For example, do you need to make any adjustments to an evacuation plan if you have blind people on board, or people in wheelchairs?

# Planning

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## Planning the Route

For working out how far you can travel, a good estimate is three lock miles per hour: this means you can travel three miles along a flat canal with no locks, or three locks close together, in a single hour. Or a combination of both (such as one mile and two locks, or two miles and one lock). It is, however, only an estimate, and additional canal traffic, or moored boats, can affect this timing.

Pay attention to any canal festivals or other events, such as stoppages, which might affect your route, or cause delay. Stoppages are published in CRT's website. You should also identify any other hazards you might find in your trip.

If you need to purchase supplies during your cruise, many supermarkets are located close to the canals.

Nicholson's Guides are an invaluable guide to canal route planning, water points, winding holes and local attractions. It is valuable to explore your intended route – either in person, or with the Guide – so that you understand where you'll moor, wind, where water points, and so on, are located. If you can gain access to local knowledge, you'll find out about any particularly difficult areas, such as strong currents near weirs, etc.

## Places to Moor and Wind

Generally, you can moor anywhere on the tow-path side of the canal, subject to any local restrictions. Some parts of the canal have limited free moorings, where your maximum permitted stay may be between 24 hours and 14 days. Others may be restricted to permit holders only.

You should not moor in or near winding holes, on or near corners or bends, under bridges, across weirs or on lock bollards. Groups can be noisy! Consider mooring away from other boats if at all possible, and avoid the less salubrious parts of the inner-city canal system.

To discourage locals from casting your boat adrift, it is suggested that you fasten all ropes back on the boat itself, rather than to bollards. In addition, you might consider using cable ties to secure ropes, to make it more difficult to undo. Nothing will make your boat vandal-proof, but you can minimise the chances of anything affecting you.

It's also worthwhile removing any loose items – life belts, boat hook, pole, etc – from the roof of the boat, to make those items less obvious. If you are mooring up breasted, it's usually sufficient to move them to the furthest boat from the towpath.

Ensure all members of the group know how to evacuate the boat overnight in the event of an emergency.

Winding holes are indicated within Nicholson's Guides, although you may identify other points at which you can wind. When winding, if you suspect that the canal may be shallow, always put the

front of the boat into the shallowest part, so that you still have the ability to use your engine to extricate yourself from any difficulty.

### **Stoppages and Restrictions**

Both these are published in CRT's website. A stoppage is part of a canal which isn't passable, perhaps due to lock repairs. Restrictions are where there are limited hours of operation, perhaps to counter low water levels.

### **CRT (BW) Staff**

Staff from the Canal and River Trust will normally be in uniform, will identify themselves, and can produce ID upon request. Generally, they will be making sure that your boat is properly licenced, and not moored inappropriately, such as in the wrong place, or for too long a length of time.

### **Booking a Boat**

Boats can be booked from HNA via the website, or by email to [bookings@mail.hna.org.uk](mailto:bookings@mail.hna.org.uk).

### **Maximum Numbers and Staffing**

There is a restriction of 12 passengers plus any necessary crew. The term "necessary" is normally a maximum of three people, who are needed to crew the boat. Where a group has a high number of disabled passengers, "necessary crew" numbers may be higher, but would need to be justifiable.

Babies under the age of 12 months, and any passengers taken aboard as a result of the skipper's obligation to assist shipwrecked or distressed persons which could not have reasonably been foreseen, are excluded.

For residential trips, there should be no greater number of passengers and crew than there are bunk spaces.

### **Insurance**

HNA's boats are insured for third-party eventualities. However, passengers' personal possessions are not covered. HNA's insurance details can be obtained on request from the HNA office.

### **Licences**

Every boat must display a valid licence in the window. Failure to display will result in CRT writing to HNA to advise them that the boat has been seen without a valid licence. Additionally, you may not be permitted back into the Canal system if you attempt an entry through Limehouse or Brentford locks.

**Other Community Boats and the NCBA**

The National Community Boating Association exists to support community boating organisations.

Community boating organisations provide access to and services on the UK's waterways for the benefit of their local community. They often work with youth and other community based groups in addition to individuals and may provide specific services for disabled, disadvantaged or otherwise excluded people in our society such as those on low incomes or from minority groups.

The aim of these organisations is much more than just access to a leisure facility. It could be social inclusion, education, rehabilitation (health or offending) and issues of wider community cohesion. They are usually charitable in nature and often registered charities. They are predominantly voluntary organisations themselves relying on donations, fund-raising and sponsorship from within their operating area.

# Housekeeping

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## Water

Water from the taps on-board is drinkable, however your group may wish to use bottled water for drinking and brushing teeth.

You should familiarise yourself with the water filling point on the boat. Generally, this is labelled WATER and can be found near the front of the boat. The water hose and tap adaptors are kept in the gas locker at the front of the boat. To avoid trailing the end of the hose through any grass, it's preferable to attach the loose end of the hose to the water tap, and then 'walk' the hose-reel back to the boat. Then, once finished, wind the hose back in whilst walking back towards the tap. It's often worthwhile running water through the hose, into the canal, before commencing filling, to wash out any debris that may have accumulated (spiders or other insects, etc).

Most water points on the Grand Union are operated by the Watermate key (also known as a BWB or CRT key). You'll use this to open a cover, or remove a padlock, to gain access to the tap. Remember to remove any adaptors that you might use on the tap when you've finished.

You should aim to fill the water as often as possible – daily is a good rule of thumb - depending on how many showers your group use. You may find that as little as 6-8 showers will use a complete tank of water. It can take anywhere around 30-45 minutes to refill a completely empty tank. This will become apparent when water starts flowing out of the overflow into the canal.

Remember that on a boat, water is a finite resource. That means you should ensure your group turn off the taps during teeth brushing, and generally use as little water as possible.

Water is pressurised within the boat by means of a pump. You'll hear this run from time to time as taps are opened. A pump which 'pulses' intermittently, when no taps are being used, is indicative of a dripping tap or a leak; a constantly running pump indicates either a tap left on or an empty water tank. Investigate as appropriate.

Should the water tank become empty, it's possible that an air-lock may form in the water system. If you believe this has occurred, please contact HNA for advice.

## Heating

Ensure you know how the heating operates – including hot water – before departure. Some boats generate hot water using surplus heat from the engine; others have an on-demand boiler in the kitchen area. A boat with a calorifier – a method of using the engine to heat water – can take up to 30 minutes to produce hot water.

If your group are particularly sensitive to cold, consider pre-heating the boat prior to their arrival.

It is important to ensure that any ventilation to the boat isn't blocked, to prevent CO poisoning.

## **Cooking**

Most residential trips will utilise some kind of rota for cooking and catering, and as HNA don't run these trips – they're run by the group – we should expect only an oversight role. Generally, due to space, meals are often served in rotation. Be aware that the kitchen area will get extremely warm if the cooker is used, so improve ventilation by opening windows.

Some boats need the cooker and oven to be lit with a match; others have electronic ignition. Ensure you're aware of the type before your group arrive.

## **Refrigeration**

The fridge runs off the boat's 12v power system. If the boat's power isolator is turned off, for example, before you pick the boat up, it'll take a while to get down to normal operating temperature. Likewise, if you run lots of lights (generally, this only applies to incandescent bulbs, not LEDs) for long duration, and start to drain the batteries, the battery's protection system will cut the power to the lights and to the fridge. Generally, not a problem, but you should be aware of it.

Remember to ensure the fridge is empty, with the door left open, and the battery isolator switched off when you return the boat.

## **Waste**

Water from the sinks and showers – grey water - is drained into the canal, whilst toilet waste – black water – is stored in tanks under the floor.

The kitchen bin should be emptied when full. You will see, at places alongside the canal, refuse bins where you can dispose of your rubbish. If you miss these, and find no other opportunity, you can dispose of rubbish upon your return to HNA. Some bins may require the BW Watermate Key.

Ensure that no waste (bottles, cans, etc) is thrown over the side of the boat.

## **Toilets**

Toilets are flushed by use of a foot pedal. Raise the pedal to add water to the bowl; depress the pedal to drain the toilet bowl.

As detailed in the Pre-Trip Briefing, only human waste and toilet paper should be placed into the toilets. Other items (sanitary towels, wet wipes, etc) can cause a blockage of the pump out system back at HNA, and your group will be charged an additional cost if this happens. Place any non-human waste into the bins in each bathroom.

An indication of the toilet tanks becoming full is them not draining completely when flushed. When this happens, use the other toilet on board. Each toilet is connected on its own tank. If necessary, you can have these pumped out at any marina along the canal, and expect to pay £15 to £20 for this. HNA will reimburse one additional pump-out to you upon production of a receipt.

An issue which has occurred before on a number of occasions is the foot pedal getting stuck in an open position, resulting in continually-running water, which will both fill the toilet tank and drain the fresh-water tank. Check this regularly, especially with younger boaters on board.

### **Showers**

Showering will use a lot of water. If your group want to shower, advise them to keep the shower as short as possible, turn off the water promptly, and fill the water tanks at the next opportunity.

The drain level in the shower is below the water line, so water will be pumped out. Some boats may have an automatic flow detection pump, others have a manually-operated pump, switched on and off by means of a switch adjacent to the shower.

# Risk Assessments

The purpose of a risk assessment is to identify any hazards, establish who might be harmed, examine how likely they are to happen and the outcome, and recording your findings.

## Why, When and How?

There are a number of ways to perform a risk assessment, and you probably do these on a daily basis without even realising it. For example, when you cross the road, you check to see if it's safe to do so. If a car is approaching, you might look at the speed it's doing, the distance you need to cross the road, and you assess whether you can cross safely.

A risk assessment might look at:

- The risk or hazard
- The seriousness (or impact) of the event
- The likelihood (or probability) of it happening
- A score, achieved by multiplying impact by probability.

So, if you scored each impact on a scale of 1-3 (one being the lowest, and three the highest) and then the probability (again, one being the lowest, and three the highest), you'd multiply them and end up with a number between 1 and 9 (being one of 1, 2, 3, 4, 6 or 9). You'd then score these with 1 or 2 being a low score, 3 or 4 being medium, and 6 or 9 being high, as per the chart right.

		Impact		
		1	2	3
Probability	1	1	2	3
	2	2	4	6
	3	3	6	9

Your group's organisation may already have a risk assessment process that they would prefer you to follow, but HNA would recommend that you assess any score which is greater than 3, and come up with a simple way to reduce that probability or impact.

As an example, a crush between a person and another boat might scores 3 ('major') for impact and 2 ('possible') for probability, resulting in an overall score of 6. As this exceeds the threshold we set, the action plan to address it is a fairly simple "Instruct/observe not to 'fend off' with arms, legs, etc"

## HNA Risk Assessments

A good risk assessment should be reviewed regularly, and after any incident which occurs greater than the threshold. HNA's Risk Assessments are available for download from our website, [www.hna.org.uk](http://www.hna.org.uk), and may be used stand-alone, or to aid you build your own risk assessment.

## Example Risk Assessment

Below is a risk assessment performed as part of a training exercise. An additional column, not shown, provides a simple, one-liner action plan, to address any scores of four or higher.

Risk or Hazard	Seriousness of Event			Probability of Event			Risk Group		Score
	Major	Minor	None	Cert.	Poss.	Unlik.	Crew	Pax.	
	3	2	1	3	2	1			
<b>Staff, Crew and Trained Volunteers</b>									
Person overboard whilst underway			X			X	X		1
Person overboard whilst in a lock		X				X	X		2
Person overboard whilst moored			X			X	X		1
Person falling in from lockside		X				X	X		2
Injury boarding/leaving boat			X			X	X		1
Fall from roof or gunwhale		X			X		X		4
Crush against bank or lock	X					X	X		3
Crush against other boat	X					X	X		3
Rope burns, pinches, trapped fingers		X			X		X		4
Lockside fall or trip			X			X	X		1
Injury from windlass mis-use	X					X	X		3
Fall or trip when operating balance beam		X				X	X		2
Fall or trip at stairways by locks		X				X	X		2
Head injury at bridge	X								3

If we use “Fall from roof or gunwhale” as an example, we can see that the seriousness of the event is probably going to be a minor event: of course, this could range from getting a wet foot, right through to the death of the person, but those are extremes – an expected injury would be a bruise or broken bone.

The probabilities of such an event happening are possible, so this results in a score of four, which exceeds our particular assessment’s threshold.

The action plan is to make sure that crew/passengers, if allowed on the roof, are made aware of obstructions on the roof (hatches, ropes, boat hook, poles, etc), that they are forbidden to use the roof in locks or on rivers, and that they shouldn’t use them when wet or frosty.

A risk assessment is, by definition, open to interpretation, but the important part is to show you have identified the risks, and have a plan in place to minimise them.

# Communicating

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Shouting at your crew and passengers continually isn't likely to be well received! And it's worse than that – if you are continually shouting, your crew and passengers will become used to it, and won't pay attention when you really need them to – when there is danger, for example.

## Communicating with your crew

Instructions to your crew should be clear and concise. If you ask someone to throw you a rope, don't be surprised if they untie a rope and throw the whole thing at you! If you just want the end of the rope, ask them to throw you the end of the rope.

There are no common hand signals, other than to indicate a man overboard (continual pointing at the person or where he was last seen). Any other hand signals (such as twirling a hand in a circular motion over your head to request paddles be raised, aren't universally known, and are likely a group- or regionally-based signal.

That said, a simple 'thumbs up' sign will indicate you understand what's being asked of you; likewise, using your hand to beckon another boat on will also be understood.

## Communicating with your passengers

Your passengers will likely be on-board to learn about boating, as opposed to merely sitting there watching the world go by. If you're letting someone steer, commands such as 'left' and 'right' aren't particularly helpful, especially if you're teaching a young person. It is far better to use words like 'to me' or 'to you' to help them understand where to move the tiller.

Likewise, when teaching, explain what is likely to happen, before it actually does, so that the person who is doing the work knows what to expect. Examples would include "...and we'll shortly bump the bank gently..." or "...as we go into the lock, you'll feel the boat touch the side..." or "...get ready to move into reverse to slow the boat... okay, into reverse a little... full reverse..."

## Communicating with third parties

You should, at all times, express courtesy to other canal users, and try to ensure your group do as well. This may mean apologising when things don't go to plan, such as passing moored boats too fast, or turning a lock around when a boat is approaching.

If things do go wrong, and another boat or other property is damaged, you only need exchange name and numbers – it's also useful to give HNA's office number for all enquiries, and to take pictures of any damage. It's a canal: bumps can and do occur, and sometimes, strong winds, weirs, currents and other problems can affect even the most experienced of boaters.

It is common for passers-by to stop and watch you pass through lock – this is always a good opportunity to 'reach out' to people, and, perhaps explain what boating is all about. You can direct them to HNA's website for more information or to get in touch.

## **Catering and Food Safety**

All of HNA's residential courses start with a session on meal planning and rotas. Whilst this is an essential, it also helps break the ice, gets people talking, and starts getting the group to bond together.

### **Planning**

As a group, you will need to decide what to buy for the following day's breakfast and lunch. Other supplies will be picked up on route, but these two are a priority. Compile a list of requirements – are there vegetarians? People with allergies? Any religion-based dietary limitation? Then, work out how many of each item you'd need to purchase – for example, would you need ten sausages for a group of ten people, or would you need twenty? Is there a preference for pork or beef? Vegetarian? Anybody want cereal instead?

You'd also need to include basics, such as milk, sugar, tea, coffee, washing up liquid, kitchen roll, toilet roll, etc. There's plenty of opportunity later to restock on items – and it's not possible to buy everything in one trip due to lack of on-board storage.

### **Buying Supplies**

The nearest supermarket to HNA is Tesco in Rickmansworth (directions: down Summerhouse Lane, left onto Park Road into Harefield Village Centre, left at the roundabout onto Rickmansworth Road, bear sharp left onto Harefield Road) which is 3.5 miles away.

Other supermarkets on the way include a Tesco in West Drayton, another Tesco in Bulls Bridge Hayes, a Sainsbury in Kensal Green, and a Sainsbury in Alperton.

### **Rota**

A rota of the daily chores is another essential, and again, it has the dual benefit of encouraging teamwork and gets the jobs done as well!

You should consider basing your rota on:

- Breakfast (including washing up): 2 people
- Lunch (including washing up): 2 people
- Daily sweep-through, empty bins, etc: 1 person

### **Tea and Coffee List**

It's also useful to make a list of people's tea and coffee requirements, as this will be referred to many times through the course of the trip. HNA would suggest you pin it somewhere in the kitchen area once completed.

## Food Safety and Cleanliness

The main risks include:

- Illness, which may be serious, from infected food – not always obvious from smell or colour.
- Illness or physical injury from food contamination originating from unclean surfaces, people, other food, foreign objects or flies/insects.
- Burns, scalds or cuts from hot pans, open oven or grill, boiling liquids, or sharp knives.
- Slips or trips from obstructions or spilt material.
- Meals not available when needed.

Handling the risks would include considering planning, food storage, hygiene, cooking and reheating.

Planning before the trip starts:

- Menus and supplies to suit storage and cooking arrangements, shopping en route and capability of cooks.
- Sufficient and suitable cooking pans, crockery, implements and cutlery.
- Lead cook satisfied with the arrangements on board.
- Cleaning materials available.

Food Storage:

- Store food in sealed containers or cover with new foil or cling film.
- Shop as planned to control storage times.
- Buy fresh meat vacuum packed where possible and in appropriate amounts for each meal, cooking the whole pack once opened.
- In refrigerator, store uncooked foods at the bottom, cooked foods at the top.
- Manage refrigerator temperature to be cold at all times whilst not wasting power.

Hygiene:

- Wash hands with soap and water before handling foods, utensils, crockery, etc. Have a dedicated hand towel. Re-wash each time you handle possibly contaminated things – including food.
- Wash surfaces both before and after preparing food.
- If in doubt, wash utensil before use.
- Wash chopping boards, knives, etc, immediately after use and before use with another type of food – especially important after use with fresh or cooked meats. Cross-contamination is a major cause of food poisoning.
- Wash up in hot water, doing glass and cutlery first, then plates, etc. Pre-wipe and soak greasy and burnt-on items and do them last.
- Avoid drying up if possible: it's better to let things air dry. If drying is necessary, use clean tea towels and don't allow their use as hand towels too.

**Cooking and re-heating:**

- Control access to, and passage through, the galley whilst it's being used.
- Try to avoid people moving from a food-preparation task, to a boat handling task, to minimise contamination.
- Ensure food is cooked or re-heater thoroughly. Inadequate 'warming' of pre-cooked food is a major cause of food poisoning.
- Take care to avoid contaminating cooked food (hot or cold) through contact – directly or indirectly – with uncooked food, especially with fresh meat. Cross-contamination is a major cause of food poisoning.
- Treat any crockery, utensil, cutlery, etc., that has been in contact with uncooked meat as contaminated – a classic barbecue mistake is to use the same tongs for handling everything on the grill, regardless of it being cooked or uncooked.

# NCBA Syllabus

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The HNA Training Manual is based on the NCBA syllabus for the Certificate in Community Boat Management – a recognised certification comprising of 20 hours of education, both in the classroom and on the canal. Trainees may find the following pages useful, in that they provide a breakdown of the skills into formal lesson plans:

Taking over the Boat

Health, Safety and Environmental Management

Group Arrangements

Practical Boating 1

Boat Handling: Theory

Practical Boating 2

Discussion and Appraisal

# Canal Glossary

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<b><u>Term</u></b>	<b><u>Meaning</u></b>
Aft / stern	Back of a boat.
Air draft	The height of the boat taken from the waterline to the highest fixed point on the boat (so you won't hit a low bridge).
Beam	A boat's width.
Bow	Pointed front of the boat.
Breasted pair	Two boats moored together.
Butty boat	A narrowboat without an engine, usually towed behind or alongside a powered narrowboat, has an open hold to carry cargo.
BWB key	Opens sanitary stations, waterpoints and some swing bridges and locks.
Cill	Doorsteps inside the lock, on which the lock gates sit.
Counter	Flat area below the water line above the swim.
Cut	Another term for a canal: workers cut the ditches to make the canals.
Draft	The depth of a boat / how deep it is under water.
Elsan disposal	Place to empty disposable toilets.
Galley	A boat's kitchen.
Gangplank	A plank used for getting on and off when the boat won't quite reach the bank.
Gunwale	The top edge of the hull where it joins the cabin side, pronounced 'gunnel' as tunnel.
Hull	The main body of a boat, not including the cabin.
Junction	Where two or more canals meet.
Keel cooled	A closed system, a slab tank (narrow & baffled) is welded to the inside (normally) of the swim, engine cooling water is then circulated through it; does the same job as the radiator on a car.
Linear moorings	Moorings along the canal where the boat is tied parallel to the towpath.
Lock gates	The mechanism that lets a boat into and out of a lock and also holds the water back
Navigation lights	Used in poor visibility on rivers to show other boats where you are and what direction you are going in. White lights – front and back; green light - right hand side; red light - left hand side.
Offline moorings	Moorings in a basin / marina etc, i.e. Not along the actual canal.
Online moorings	Moorings along the canal.
Paddles	Trapdoors in the lock gate or side of the wall of the lock which let water in and out of the lock (Also known as a sluice).
Port or Port side	Left-hand side when standing at the stern facing forward (towards the frontend)
Pound	A section of waterway between locks.
Pump out	The facility to empty toilets that have a fixed holding tank.
Raw water cooled	Canal water is drawn in via a mud box (normally a watertight container large enough to allow the incoming water time to settle) before being pumped around the engine to cool it then returned to the canal.

<b><u>Term</u></b>	<b><u>Meaning</u></b>
Restriction	When maintenance work is carried out on a waterway, but the navigation doesn't have to be closed. Boaters may need to follow special instructions, or be delayed for a certain amount of time etc.
Rudder	Used to steer the boat, it is attached to the back of a boat and into the water.
Screw	The propeller which makes the boat go.
Skeg	A steel horizontal bar welded to the base plate (normally in channel form) protruding from the stern to carry the lower end of the rudder post and bearing, it also gives some protection to the propeller.
Skipper	The captain or person in charge of the boat.
Sluice	Trapdoors in the lock gate or side of the wall of the lock which let water in and out of the lock (Also known as paddles).
Stake	Known as mooring pins, you hammer into the ground to tie to tie the boat to the bank (used when there are no mooring rings).
Starboard or starboard side	Right-hand side when standing at the stern facing forward (towards the frontend)
Stern	The back of a boat.
Stern-gear	The propeller, propeller shaft, sterntube, sterntube bearing, and stuffing box or packing gland (an adjustable gland to help keep water out of the engine space bilge).
Stern-gland Greaser	Tube full of grease which is packed around the sterntube to prevent water seeping into the boat. Checked twice daily.
Stoppages	When work/maintenance is taking place on a waterway, a section of it may need to be closed to boaters for a certain length of time
Summit	The highest section of a canal above the top lock.
Swans neck	The S shaped steel bar welded to the rudder post to which the tiller bar is fitted (the brass shinny stick with a wooden handle on the end) on a motor boat.
Swim	The after (back) underwater part of the hull that goes to a point to allow a cleaner flow of water over the propeller.
Tiller	Attached to the rudder to control steerage through the rudder.
Transom	The normally rounded after (back) part of the boat above the water where the steerer stands.
Tumblehome	The amount a cabin side slopes inwards (to give more bridge clearance).
Tunnel light	Large beam, like a car headlight, for use in tunnels to see the way and to be seen by on-coming boats.
Waterline	The line on the boats hull where it floats.
Weir	An artificial waterfall often built so the river or canal can run around a lock.
Winding hole	A place on the water broad enough to turn the boat around.
Windlass	A spanner-like tool used to open lock paddles or sluices.

# Useful Contacts

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- Hillingdon Narrowboats Association
  - Web: [www.hna.org.uk](http://www.hna.org.uk)
  - Tel: 01895 823 582 (office hours) or Emergency No.: 07860 857 877 (out of hours)
  
- Canal & River Trust
  - Web: [www.canalrivertrust.org.uk](http://www.canalrivertrust.org.uk)
  - Tel: 0800 47 999 47 (Emergencies, damaged locks/bridge/tunnel, trapped boats)
  
- Thames Barrier Navigation (London VTS)
  - Tel: 0208 855 0315
  - VHF: Channel 14, call sign "London VTS"
  
- Limehouse Marina
  - Tel: 0207 308 9930
  - VHF: Channel 80, call sign "Limehouse Marina"
  
- Thames Lock, Limehouse
  - Tel: 07766 774726
  
- Thames Lock, Brentford
  - Tel: 0208 568 2779
  
- Thames Lock, Teddington
  - Tel: 0208 940 8723

# The Final Word...

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HNA hopes that you found this course useful, and that you enjoyed it. We, along with many other community boating groups, are always trying to attract new people to volunteer with us to help us continue to operate. If you think this might interest you, please get in touch with us or your nearest community boating project. Details of all of these can be found on the NCBA's website at [www.national-cba.co.uk/projects](http://www.national-cba.co.uk/projects) – or ask any of our team to put you in touch.

If something's not going right for you, please speak to the Senior Trainer during your course – it's much easier to fix things then, and address any issues, at the time.

Feedback – good or bad – is always appreciated, and you'll have the chance to provide this at the end of the course. If you have other points you wish to discuss, please contact our Chairman, who can be reached any time after the end of your course.