

Hillingdon Narrowboats Association

Merlin Handover Manual

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Welcome!

On behalf of Hillingdon Narrowboats Association, I'd like to thank you for choosing to hire Merlin. No matter which boat you've hired, or the length of your trip, we're sure that you'll have a fantastic time exploring the waterways around this part of the country.

Before we confirmed your booking, we'll have made sure that you are competent to steer a narrowboat: this may have been as part of our training scheme, or, if you already have boating experience, we may have asked you to spend an hour or two with us to so that we be sure of your skills whilst afloat. Alternatively, you may have chosen to have an HNA-certificated steerer come with you, either for all, or just part, of your trip.

Please take the time to read this short manual, which covers everything we'll have told you during the handover process. We do realise that you probably want to get straight into boating, but spending 20-30 minutes just to familiarise yourself with the boat, and the immediate area, is time well spent.

If you have any problems during your hire period, please do contact us using the details in the 'Get in Touch' section. Many problems can be resolved very quickly, or we might be able to offer advice for events outside of our control. Whatever, if you have any queries at all, please do get in touch quickly, so we can have you on your way again as quickly as possible.

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

Thanks again for choosing Hillingdon Narrowboats. All that remains is for me to wish you a safe and pleasant trip, as you begin your journey on the water.

Best wishes

Dave

Dave Wright

Project Manager, Hillingdon Narrowboats

Table of Contents

Welcome.....	2
If You Read Nothing Else.....	4
Daily Checks.....	5
Reminders.....	7
Starting and Stopping.....	8
Engine Dashboard.....	9
On Board Equipment.....	10
Steering.....	11
Safety.....	12
Mooring.....	13
Mooring at HNA.....	14
How Do I.....	15
At the End of Hire Period.....	18
If Things Go Wrong.....	19
Calling Emergency Services.....	20
Summery.....	21
Canal Glossary.....	22
Get In Touch.....	24
HNA Safety Briefing.....	25
On Arrival at First Lock.....	26
Sound Signals on the Inland Waterways.....	27
Pre-Use Check List.....	28
Inventory.....	29

If You Read Nothing Else...

...please read this section. It covers the basics you really need to know.

Water

The boat has a large tank of potable water. This water may have a slightly unusual taste, but it's safe to drink, brush teeth with, and can be used for cooking. For trips of more than a day, we would suggest you top up with water once a day: the basic rule of thumb is to top up when you can, not when you have to. A fully empty tank can take 30-45 minutes to refill completely. The water refill inlet is on the left (port) gunnel at the front cabin bulkhead. The Nicholson's Guide on the boat will identify the location of water points along the canal.

Diesel

Prior to your trip, the boat will have been refilled with diesel. For cruises of more than 4-5 days, we'd recommend checking the amount of fuel remaining using the dip stick, which has the EMPTY level clearly marked (Merlin is out of Diesel when dipstick shows 9 inches as the take off point is set high). A good guide is a consumption of one inch of fuel per day (approx. 6 hours).

Gas

There are three gas bottles on board, stored at the gas locker in the very front of the boat. Two bottles are connected: the third is spare. If one bottles runs out, the automatic changeover will switch to the other. If both bottles are empty, you should connect the spare bottle. Remember to turn off the old bottle before disconnecting it, and to turn on the new bottle after it's connected. **Gas bottles have a LEFT-HAND thread**, and a spanner can be found in the gas locker. Do not overtighten the connection.

In the event of a gas leak, turn off both bottles, open doors and windows and do not operate any light switches, either off or on. Move to boat to the bank, moor it safely and switch off the engine, and turn off the power isolators in the engine compartment. Ventilate the boat, and investigate the cause of the leak. Contact HNA for further advice.

Waste Water

Sink and shower water is discharged into the canal. Toilet waste is collected in tanks in the bottom of the boat, and should be of sufficient capacity for a trip of less than a week. An indication of a full toilet tank would be waste water in the bottom of the toilet bowl. Use the other toilet until you can obtain a pump out (HNA will reimburse, with receipts) one pump out per hire.

Fire

Fire extinguishers and blankets are on the boat. Familiarise yourself with their locations and operating instruction. HNA's advice is to only fight fire if you can safely do so easily. Your priority should be to get yourself and passengers to safety – at least 3-4 boat lengths away - before giving any consideration to extinguishing the fire.

Daily Checks.

Before commencing each day's journey, and whilst the engine is cold, **you should check the following areas in and around the engine bay.** You access the engine by lifting the hinged engine cover at the rear of the boat.

Before commencing these checks, for safety reasons make sure that you have the keys to the boat on your person, to prevent any other person starting the engine whilst these checks are being carried out.

Overview and Isolators

The battery isolator is located under the seat in the steerers area on the right hand side see picture. To turn on the batteries turn the knob $\frac{1}{4}$ turn clockwise. It is normal for the engine compartment to have a mix of oil and water in the bottom. The boat is fitted with an automatic bilge pump which will start to operate if water levels get too high. However, if the battery isolator (see below) is turned off, the bilge pump will not operate. If there is significant water in the engine compartment, and the battery isolator is turned off, you may wish to turn it on for a few minutes (see below) to pump out the engine bay. The ignition key is not required for the bilge pump to operate.

Oil Level

The dipstick is on the top of the engine. The oil will appear black, and should be between half and three-quarters of the way up to flat end of the dip stick.

In the unlikely event that it is less than half way, do not start the engine, top up from oil provided.

Water Level

The engine is water cooled and to check if the engine has sufficient water remove the red filler cap and make sure the water is visible.

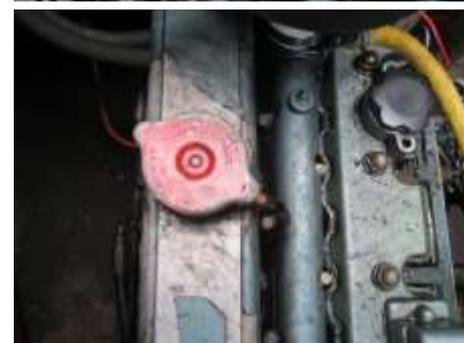
If the water is low you must top it up with (preferably) normal tap water, or, if necessary, clean canal water.

Fan Belts

The fan belt is found towards the front of the engine, and should be checked to ensure it is not overly loose.

The best way to do this is to see how much 'play' there is in the belt, and this should typically be around half an inch either way. If the belt is excessively loose, contact HNA for advice.

Check also for any obvious visual tears or breaks in the belt, and again, if you have any concerns, contact HNA for advice.



Propellor Shaft

The prop-shaft exits the rear of the engine and passes through the body of the boat to the propeller. The only check you do here is to make sure that the shaft turns, and you should do this by simply resting a foot on the shaft and rotating it gently.

If you experience any resistance, check that the boat is in a neutral gear, and that the propeller blade itself isn't obstructed (see below).

Should you find that you can't remediate the problem, contact HNA for further advice.

**Weed Hatch**

Reminder: make sure you have the boat keys in your possession!!

The propeller blade is under the rear of the boat, and visible through the weed hatch. Unscrew the securing bar across the top of the weed hatch, using a windlass to give you additional leverage if necessary. Slide the bar forwards, and place out of the way. Gently, lift the top of the weed hatch cover upwards and forwards, bearing in mind that it may contain mud and/or water, leaning it over the edge of the hatch.

Through the hatch, you can inspect the propeller blade for any ropes, fishing line or other debris that could obstruct it. It often helps to turn the blade by rotating the prop shaft as detailed above.

Remove any obstruction and retain on board for disposal later. Do not return any rubbish into the canal, as it may well just foul another boat.

Refit the weed hatch cover and securing bar, and tighten securely.

Failure to secure this may result in the engine bay filling with water.

**Stern Gland**

To prevent water entering the engine bay via the prop-shaft hole, the stern gland is pumped with grease both before and after a day's running time. To do this, simply twist the handle on top of the stern gland clockwise firmly, until it is hand-tight.

Normally, this can take anywhere between a quarter of a turn and a couple of turns, depending on the age of the stern gland packing. If you can continue turning without feeling any significant resistance or you can see grease escaping from any of the fittings, contact HNA for advice.



Reminders

This concludes the checks within the engine compartment, so you should now replace the engine bay covers.

A checklist is provided to assist you with these checks.

Things to do every morning

1. Oil Level – half way
2. Water Level – to 2-3" below top
3. Fan belt tension – approximately half-inch in both directions
4. Prop shaft – rotates freely
5. Weed hatch - blade free of obstructions
6. Stern Gland – tighten gently
7. Bilge – check for excessive water

Things to do every night

- 1 Bring tiller and pin inside.
- 2 Stern Gland – tighten gently
- 3 Bilge-check for excessive water
- 4 When mooring overnight, in less-salubrious areas, remove any loose items from the roof

Starting and Stopping the Engine

To cold-start the engine:

1. Ensure the battery isolator is turned on. This would only normally be in the off position when you pick up your boat.
2. With the key in your pocket, to prevent accidental starting, perform the daily checks:
 - a. Fan belt tension
 - b. Engine coolant level
 - c. Oil level
 - d. Prop shaft rotation
 - e. Weed hatch
 - f. Tighten stern-gland greaser as necessary
3. Apply some throttle, making sure that you disengage the gears first sliding the red tab away from the main handle on the morse control.
4. Insert the ignition key, and turn anti clockwise for a maximum of 12 seconds to pre heat the engine then turn to the START position until the engine has started. Release to key back to the RUN position.
5. Slowly take the engine to full revs, and then back to tickover. Check for excessive engine smoke.



To warm-start the engine (after, perhaps, a brief stop):

1. Apply some throttle, making sure that you disengage the gears first. Insert the ignition key, turning to the start position until the engine has started. Release to key back to the RUN position.
2. Slowly take the engine to full revs, and then back to tickover. Check for excessive engine smoke.

To stop the engine:

1. Ensure the boat is secured, front a rear, with ropes.
2. Pull the stop button situated above the rear cupboard in the semi trad area.; Turn the ignition to OFF

If you are stopping the boat for the day, check the stern-glad greaser and tighten as necessary.



Engine Dashboard

Top Line

Engine temperature, Rev counter engine hour meter

Bottom line

Bilge pump although an automatic pump is fitted this button is an override

Oil warning light. This must be out when the engine is running if it lights up during normal operation STOP the engine and check oil level.

Tunnel light Switch this turn on the Tunnel light

Alternator warning light This must be out when the engine is running if it lights up during normal operation STOP the engine and check the fan belt.



INTERNAL FUSE BOARD

In the Skippers cabin there is a consumer unit fuse board

The switches are all marked

On the left of the unit is an outside light switch in the middle there is a 12 volt car power socket and a volt meter below that.

Note in the voltage falls below 12 volts you may hear a **whining noise** this is the inverter warning that the voltage is low, turn off the inverter fuse (far left on panel) this will stop the whine alternatively start the engine and charge the main batteries.



On-board Equipment

On board, you'll find the following items of equipment, which you'll use to operate the boat

The keys supplied with the boat will operate the the front cabin doors, the engine ignition and British Waterways water taps, anti-vandal locks and other BWB facilities (showers, toilets, gates, etc). Additionally, there is another BWB key and a tank (water, grey-waste pump out) key on a separate keyring hanging in the steerer's cabin,

Tiller and Pin

The tiller should always be removed from the boat at night and when unattended. Being made of brass, it is of interest to passing thieves, and the boat will be impossible to steer without it. Ensure that you don't drop the pin into the canal.

Mooring Pins (x2) and Club Hammer

Like tent-pegs, these can be used to tie up the boat if you moor where no bollards or rings are available.

Mooring Clips (x2)

These can be used on some parts of the canal, and slip behind the metal pilings of the canal edge and allow you to tie your mooring line to them.

Windlasses (x3)

Used for operating lock paddles. Ensure that you use the smaller of the two holes to operate the lock spindles, to avoid damage to either the windlass or the spindle.

Nicholson's Waterways Guide and Map Case

The Nicholson's Guide is the de-facto guide to the UK's canal network, and shows winding (turn-a- round) points, pump-out stations and water taps along the canal, as well as locks, marinas and other local points of interest.

Hosepipe

Stored in the gas locker at the front of the boat, this is used to refill the water tanks as and when needed (see later).

Other equipment which may be available (check log book):

Magnet and line – which may be useful for retrieving a lost windlass from a lock should it go overboard. Alternatively, an item for entertainment whilst waiting for a lock to fill or empty – you might get lucky!

Boathook and pole – the boathook can be used for retrieving floating items from the canal, or removing obstructions (branches, debris, etc). The pole can be used to push the boat off of a mud bank should you get stuck. Always use the pole to push with, never to lever, as it will break if used in this manner.

Emergency tool box containing screw drivers pliers and other useful tools for use in an emergency.

Steering

You will have been assessed as competent by HNA prior to your hire. However, it's worth reinforcing a few basics:

Keep to the centre of the canal, moving to the right when an oncoming boat is approaching. You should pass left-side to left-side.

Familiarise yourself with the pivot point of the boat shortly after departure, so you can better estimate when to commence a turn. Remember, a very short blast of full power during a turn will make the boat turn sharper, without increasing forward speed.

Steering in reverse is usually ineffective. It's often best, when reversing, to give short blasts of forward throttle, with the tiller in the appropriate position, to correct your direction.

If you run aground, the best advice is to try to reverse off of the obstruction, and get the back of your boat into deeper water. Use boat poles to push the boat off. In the case of serious grounding, contact HNA for advice before considering asking a passing boat to tow you off.

Do not attempt to overtake unless the boat in front indicates that he wishes you to do so. Regardless, don't overtake under bridges, on bends, in shallow water, or when passing moored boats.

Be courteous to other waterway users. Take your turn at locks, and close gates and paddles unless another boat is approaching or signs direct you otherwise.

The maximum speed on the canal system should be considered to be 4mph. In practice, it'll often be slower than this. You should avoid creating a breaking wash, going at moored boats and fishermen faster than tickover, and be conscious that it is possible to dislodge boats poorly moored with excessive speed. Slow down to tickover when passing moored boats, at least 3-4 boat lengths before you get to them.

To stop, or to slow down quickly, use a burst of reverse until the boat comes to a stop. Note that this may cause the boat to veer off course slightly. Steering ability is significantly reduced when moving forward in neutral, when, for example, slowing gradually.

Safety

Locks

At locks, pay close attention to use of the windlass on the lock spindles using the small hole of the windlass when ever possible : keep tight hold of it when raising or lowering paddles, remember the use of the safety catch, and never leave a windlass on a spindle.

In the event of a man overboard in a lock, drop all paddles immediately, and seek to recover the casualty.

Be aware of the location of the cill when lowering the boat in a lock, and keep well forward. If the back of the boat does get caught, immediately close the lower paddles, and add water by opening the upper paddles very slowly to re-float the boat.

Man Overboard

If anyone should fall overboard, immediately put the engine into neutral. Talk to the casualty, and if possible, instruct him to stand up and walk to the bank. Never attempt to recover the person onto the boat unless there are no alternatives, and only then, do so at the rear of the boat. Ensure anyone who does fall in showers as soon as possible, and keep them warm. Advise them to visit their doctor if they exhibit any flu-like symptoms in the following 3-4 weeks, and to tell their doctor they have been exposed to canal water, due to the risks of Weil's disease.

Accidents and Emergencies

In the event of needing medical attention, use the Nicholson's Guide to identify your location and nearest point of access, and relay this to the 999 operator.

Life Jackets

HNA will make available life jackets for you upon request. The decision to wear these rests with the hirer and his/her passengers. Life jackets, if worn, should not be covered by coats, jackets, etc, and should always be the outermost item of clothing worn. HNA will charge for any life jacket inflations caused by anything other than a person overboard.

Security

Ensure the boat is locked – front and rear – and any side hatches are also secured, windows closed, curtains drawn and any valuables removed with you when leaving the boat.

Mooring

As a reminder, you shouldn't moor in the following places:

- Under bridges
- Across weirs
- In locks or on lock moorings
- On water points or facilities moorings
- In winding holes
- On corners
- Anywhere other than the tow-path side, unless signs indicate you can.

When mooring, use ropes front and back, leading away from the boat at approximately 45 degrees. It's often best to bring the rope back to the boat and secure it to a t-stud on the boat with a secure hitch, preferably the boatmans' hitch.

When mooring overnight, in less-salubrious areas, remove any loose items from the roof, and ensure windows on the tow-path side are closed.

If you moor using mooring pins, ensure that these are driven in using a mallet at an angle of 45 degrees. Pins and ropes should not obstruct the tow path. It is often useful to lead the rope through the ring on the mooring pin, so that if it does work loose, it won't be lost.

Mooring at HNA's Boathouse

HNA Boathouse is situated not, as you may think, on the Grand Union Canal, but on a side stream along and joining the canal. This side stream can be fast flowing especially after rain and can cause problems for the most experienced steerer unless they know the following simple rules.

Coming downstream from Springwell

Slow the boat down very early.

Get mooring rope ready at rear of boat

Swing in rear/stern of boat to mooring and hold back till a rope is taken off and made fast.

The current will slowly bring in the front of boat to enable a rope to be taken off and secured.

Then make fast the bow

Upstream from Coppermill Lock

Bring front into mooring slowly and early till you have secured the bow.

Allow the current to bring in the rear/stern.

How Do I...

Extra information and reminders

Gas

Sufficient gas will be provided for your hire. Three bottles are provided, of which two will be connected at any one time via an automatic valve. If you need to change an empty bottle, an appropriately sized spanner is provided in the gas locker. Gas bottles have a left-handed (ie: the reverse of normal) thread, so to unscrew the valve, you need to turn it **CLOCKWISE**, and to screw on the new valve, you need to turn it **ANTI-CLOCKWISE**.

Water

The freshwater tank will hold enough for several days cruising, although it is worth topping up every couple of days: refill when you can, not when you need to. The water filler cap is at the front of the boat, next to the gas locker. Use the Nicholson's Guide to identify where your next water tap is – they are generally adjacent to locks. Most taps will require the BWB key to unlock them – ensure they are locked when you have finished. Place the reel at the tap and extend the hose towards the boat. The white tank key, like a flat bladed screwdriver, is used to open the water tank cap. It can take 30-45 minutes to refill a completely empty water tank.

Water is delivered to the tap via a flow-activated pump situated under the floor. It is normal to hear the pump activate when either the hot or cold taps, or the toilet flush, are activated. An intermittently pulsing pump is an indication of a tap being left on or a toilet flushing.

Water Heating

The boat is fitted a –gas powered water heater. It may take several seconds for hot water to appear at the tap.

Heating system

The boat is heated by a gas boiler situated in the Skippers Cabin and heated by radiators; it has a pilot light that will need lighting after changing gas bottles or if the gas has been turned off for any reason. To light the pilot light first access the small door to the boiler controls then turn the black knob (Blue arrow) fully clockwise to zero. Then press and hold down button with green arrow, then press ignitor button with the white spot on top red arrow. This will send a spark to the pilot. Hold down left hand button for 15 seconds slowly release and check that the pilot is alight if not repeats as above. When alight turn the black knob back to 5



To turn on radiator circulation pump put the switch in the airing cupboard in the down position



Hip Bath/shower

To pump out the shower switch the red switch to start the pump.



Waste Water

Both toilets have their own waste-water tanks under the boat, and have sufficient capacity for several days. It is unlikely that you will need to empty these during your hire, but if so, you can seek the advice of a local marina or other facility offering pump-out facilities. Expect to pay £15-£20 for a pump out if needed, otherwise both tanks will be emptied at the return of the boat. Please don't place any items into the toilet other than toilet tissue as this may block the pump-out facility at HNA and result in the loss of your deposit. Water from the kitchen sink, and the two wash sinks, are discharged into the canal.

Electricity

The boat has a 12v DC battery-backed system supporting the lights, fridge and freshwater pump, which is recharged when the boat's engine is running. Excessive use of lighting along with short engine running hours will result in a flat battery. If this happens, run the boat's engine for a period of time to recharge batteries and to provide internal lighting

Additional batteries for medical reasons (such as CPAP machines for sleep apnoea) can be provided along with a 12v AC inverter to produce a 240v AC supply, and are independent of the boat's 12v system.

Diesel

Fuel consumption is minimal on a narrowboat, probably in the region of 1.0 – 1.5 litres per hour. Assuming an eight-hour cruising day, and a 100 litre diesel tank, you can expect to get around 8-12 days worth of cruising time in between fill-ups. HNA will ensure you have sufficient fuel to last your hire period, based on the duration and expected distance of your trip.

Toilets

To flush the toilet, using your foot, push the foot-pedal down. This will open the trap in the toilet, and add a small amount of water. If more water is required, again using your foot, lift the pedal up. Repeat as necessary. A toilet brush is provided for use if necessary.

Ensure that the toilet flush pedal returns to the centre OFF position when finished, otherwise the contents of the fresh water tank will be drained into the toilet tank, causing it to overflow.

Please remember not to place any items other than toilet tissue into the toilets.

Safety

Fire extinguishers are provided in the steerer's cabin, next to the step, in the kitchen area, opposite the stove, and in the forward cabin. A fire-blanket is also provided in the kitchen area.

A carbon monoxide monitoring device is installed in the kitchen. In the event of it sounding, exit the boat immediately and seek fresh air and medical advice if necessary.

Security

At night, and when leaving the boat unattended, ensure:

1. All hatches are closed and bolted, including the hatch in the steerer's cabin.
2. Windows are shut and locked.
3. Curtains on the tow-path side are drawn.
4. All taps are turned off.
5. The toilet flush lever is in the middle position.
6. The tiller and pin are removed and stored in the steerer's cabin.
7. All lights are turned off.

Entrance and exit to the boat is via the front cabin.

If mooring in areas prone to vandalism, it is often wise to take further precautions:

Remove items from the roof, such as life-rings, boathook and pole.

Consider mooring the boat by looping around a mooring bollard and securing the rope back to the boat, rather than on the bollard.

Consider using cable ties to secure the rope, making it significantly more difficult to be cast off.

Ensure any safety devices are returned to the correct place when starting the cruise afterwards.

Lifejackets

HNA will provide an appropriate number of lifejackets along with spares, based on the number of passengers and crew on board. HNA does not have a policy on whether passengers and crew should wear lifejackets, but would expect the hirer to perform their own risk assessment and make their own informed decision based on the result of the assessment.

At the End of Your Hire Period

Hopefully, you've had a successful cruise. When you return the boat, we'd appreciate it if you could run through the brief check list:

1. Remove all personal possessions, rubbish (including waste bins in toilets) and surplus food/liquids.
2. You should aim to leave the boat as you found it. Waste bins are available at HNA's boathouse for any waste.
3. Ensure the boat is cleaned, that any cooking or cutlery items are washed, dried, and returned to their correct place.
4. Make sure the fridge is emptied, and that the door is left open.
5. Leave the gas on and the pilot light on the water heater lit, but turn the battery power off in the engine compartment.
6. Bring in the tiller and pin and stow in the steerer's cabin.
7. Ensure all windlasses, mooring pins, mooring clips, hammers, and maps are accounted for.
8. Report any problems to a member of HNA's team, or by filling in the log book provided.
9. Leave the keys in the ignition, or as previously directed by HNA, and padlock the door.

If Things go Wrong...

Accidents

In the event of an accident involving another boat, **do not admit liability**. Remain calm and polite and obtain the following information:

1. The name of the other boat and its registration number.
2. The owner's name and address.
3. The skipper's name and address.
4. The names and addresses of any witnesses.
5. The date, time and location of the incident.
6. Write a report of how and why the incident happened.

Contact HNA immediately for further advice.

Breakdown

The most common problem you'll encounter is an obstruction of the propeller (blade). Moor up, stop the engine and remove the key, and then proceed to remove any debris around the blade. On some sections of the canal, this can need doing with monotonous regularity.

In the event of engine failure, moor up, and contact HNA. Most problems can be rectified easily.

Loss or Damage

Again, contact HNA at the earliest opportunity. In some instances, we may need to make a police report, and this may require a witness statement. Wilful damage caused by you or your party will normally be chargeable.

Emergency Services: 999 or 112

When calling either the CRT Emergency number, or the traditional Emergency Services, you should give your location as best you can based on bridge number, lock names/numbers or nearest landmarks

For incidents such as dangerously damaged locks, bridges or tunnels, or for boats trapped in weirs or locks, or serious pollution, contact the CRT Emergency number. For non-urgent issues, such as fly tipping, vandalism, low or high water levels, use the CRT non-Emergency number.

For any boat problems, or to notify HNA that you will be significantly late in returning the boat, please try the HNA Office number first, (01895 823 582) followed by the HNA Out of Hours Emergency number if there is no reply. (07860 857 877)

Canal and River Trust Emergency Telephone Number Tel: 0800 47 999 47
(Emergencies, damaged locks/bridge/tunnel, trapped boats)

Summary

You are **not permitted** to cruise on tidal waters, without the express permission of HNA, and agreed in advance of your hire.

Night cruising is **not permitted without the express permission** of the Chairman or Project Manager of HNA. Permission may be granted taking into account your experience, the section of canal you're on, weather conditions, your familiarity with the section of canal, the numbers and age of your passengers, and whether you need to pass through any locks.

Keep your speed down. All boats carry HNA's name and phone number, and we do receive reports of speeding boats. Repeated reports of a group speeding may result in early termination of your hire.

Dispose of all rubbish in approved waste facilities, or retain it on board to dispose of back at HNA.

You are expected **to return your boat in the same clean and tidy condition** in which you took over it. A boat in a dirty condition will attract an additional cleaning charge.

Ensure all crew and passengers are given **HNA's Safety Briefing** before departure. This is for everyone's benefit, even those who have used our boats before.

Treat other boaters as you would wish to be treated yourself. **Show courtesy and consideration,** and remember that voices or music travel great distances over water, especially at night.

Canal Glossary

Term	Meaning
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 tied 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 / Watermate 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 in 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.
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.

Term	Meaning
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.
Swan neck	The S shaped steel bar welded to the rudder post to which the tiller bar is fitted (the brass shiny 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.
Windlass or lock key	A cranked handle for opening and closing lock paddles.

Get in Touch

- Hillingdon Narrowboats Association
 - Web: www.hna.org.uk
 - Tel: 01895 823 582 (office hours) or 07860 857 877 (out of hours)

- Canal & River Trust
 - Web: 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"

- Thames Lock, Limehouse
 - Tel: 0207 308 9930
 - VHF: Channel 80, call sign "Limehouse Marina"

- Thames Lock, Brentford
 - Tel: 0208 568 2779

- Thames Lock, Teddington
 - Tel: 0208 940 8723

HNA Safety Briefing Notes

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 on the Skippers say so.
- 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 duck or get down lay flat immediately don't look around so see why.
- 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.
- When boat is stopping or approaching a lock or bank never jump off 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 boat; if possible go to the front of the boat. The Skipper will direct the boat towards the bank.
- Never rock the boat unless required to do so by Skipper as things may spill or fall off the cooker.

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 eyes peeled for danger, such as safety catches not on, or for people running.

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 lock spindle. 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 lock spindle 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 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.

Sound Signals on the Inland Waterways

A Blast = 1 second

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

5 Blasts = your intentions are unclear or are you taking sufficient avoiding actions?

1 Extra Long Blast (4 Seconds) = warning at tunnels, blind bends and Junctions

Merlin Pre-Use Check List

This list **MUST** be completed at handover of Merlin and given to HNA staff

Skippers Name:		Date:	Mobile:
I confirm that I will give a full safety briefing (copies of which are on board) to all passengers and crew before setting off, and a lock briefing to lock operators at first lock. I Confirm that I have been given a copy of the Hand Book and that I will read the contents.			
SIGNED.....Skipper Date.....			
ITEM	OK(✓)	N/A (✓)	Defect Reported
General exterior condition			
Fenders Fore / Aft			
Fresh Water Tank			
Fuel			
Engine oil			
Fan Belts			
Weed Hatch			
Stern Greaser / Stern Gland / Centre Shaft			
Tiller & Pin			
Bilge Pump			
Gang Plank / Boat Poles / Boat Hook			
Ropes:- Fore / Aft / Centre			
Mooring Spikes / Mallet			
3 Lock Windlass			
Watermate Key			
Lifebelt 2			
2 Fire Extinguishers & 1 Fire Blanket			
Interior Lighting			
Toilet and Spare Blue			
Tunnel Light / Horn			
Gas			
Smoke & Gas Alarms			
First Aid Kit			
Interior condition			
Emergency tool kit			
Jump Leads			

Merlin Inventory

		HNA	Skipper			HNA	Skipper
1	Kettle			2	Roasting Tins		
1	Tea Pot			1	Grill Pan		
15	Dinner Plates			1	Baking Tray		
15	Side Plates			1	Sieve		
15	Bowls			1	Mixing Bowl		
15	Mugs			1	Measuring Jug		
15	Knives			1	Colander		
15	Forks			1	Chopping Board		
15	Spoons			1	Washing up Bowl		
15	Tea Spoons			1	Drying Rack		
15	Plastic Beakers			1	Broom		
1	Knife Block			1	Dust Pan and Brush		
1	Steel			1	Mop and Bucket		
1	Scissors			1	Refuse Bin		
1	Fish Slice			2	Loo Brushes		
1	Grater			2	Sanitary Bins		
1	Ladle			1	Matches/Lighter		
1	Potato Masher						
1	Potato Peeler						
1	Serving Spoon						
1	Spoon with Holes						
1	Spaghetti Spoon						
1	Tin Opener						
1	Tongs						
1	Whisk						
1	Wooden Spatula						
2	Wooden Spoons						
1	Scissors						
2	Frying Pans						
3	Saucepans						
2	Stainless Steel Pots						
1	Milk Pan						