The Inland Waterways Association

GUIDELINES ON USE OF MARINE-BAND VHF RADIO BY INLAND PLEASURE CRAFT ON UK FREIGHT WATERWAYS

with advice on navigation lights, sound signals and navigational safety

A guidance note prepared by IWA's Inland Waterway Freight Group

keeping our waterways alive

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SUMMARY

- Marine-band VHF radio provides a means for vessel crew to communicate with other vessels and shore station (e.g. ports, locks, bridges and marinas) on operational, navigation and safety matters.
- As well as providing an effective means of calling for help in an emergency, use of marine-band VHF radio can inform you of the presence of large vessels and their intentions, as well as providing a means to call for locks to be prepared or moveable bridges to be swung or raised in advance of your arrival.
- Simply listening to the appropriate radio channel will provide a picture of vessel traffic, which may enable you to avoid meeting a large vessel in an awkward location, for example.
- Availability of radio-communication and establishment of vessel traffic services (VTS) in some areas has contributed to the penetration inland of larger vessels than hitherto, presenting an increased hazard to small pleasure craft.
- Marine-band VHF radio has become widely used on larger waterways, replacing flag signals and to some extent sound signals, so that if your vessels is not so equipped, you may be exposing yourself to unnecessary risks.
- Marine-band VHF radio is obligatory on vessels navigating many tidal waterways, including parts of the Ouse, Humber, Trent, Witham and Thames.
- Portable marine radio sets are now relatively inexpensive and the ship portable radio licence is free. Users will also need to attend a one day course, available in all parts of the country, to obtain the required operator's certificate.
- IWA strongly recommends that boaters carry marine band VHF radio on all major tidal waterways and on other waterways where locks and bridges are equipped with VHF radio.
- Vessels navigating at night or in conditions of reduced visibility must carry full navigation lights except for narrow canal craft, which only need to carry a single light at the bow on narrow canals and some other waterways. However, even narrow boats must carry full navigation lights on all tidal waterways and on many of the larger non-tidal waterways.
- Boaters should also familiarise themselves with local signage before venturing onto a large waterway; some waterways use local signs not found elsewhere.

UK Freight Waterways

Many inland waterway pleasure craft in the UK use the larger freight waterways, either on a regular basis or occasionally, to move between different parts of the waterway network. These waterways range from canals such as the Gloucester & Sharpness, through river navigations like the Aire & Calder or the Weaver, to tideways including the Thames, the Humber system, the Mersey, the Severn and Witham estuaries. Not all inland pleasure craft are suitable for all the tidal reaches and this note does not deal with seaworthiness, safety equipment (lifejackets, anchors etc) or insurance, which you need to check carefully before setting out.

The guidance provided here is generally applicable to all inland freight waterways (and other tidal waterways) in the UK and you may even find it useful even if you intend venturing no further seaward than the Aire & Calder at Castleford. However, it does not pretend to give you sufficient advice if you intend venturing out to sea where, in particular, you need to be fully aware of the GMDSS [1] and its implications for radio users.

What is Marine-Band VHF Radio

Marine-band VHF [2] radio is a means by which vessels can communicate with radio stations ashore and on other vessels. A range of channels is available, with specific permitted uses in each case; for example, those channels allocated to port operations and ship movement may only be used on matters concerning navigation, vessel operations and safety. Other channels are allocated for inter-ship use, safety transmissions and contacting marinas. The system is effective over short distances, up to a maximum of 100km or so at sea, depending on the height of your antenna, but often much less inland, where the local lie of the land, buildings and so on limit reception.

A vessel equipped with a marine-band VHF radio is known as a Ship Radio Station and the radio allows the navigator to listen to broadcast messages, to call other ship or shore stations or groups of ship stations and to broadcast distress, urgency and safety messages. To keep the system workable and ensure that essential messages get through, there are protocols to observe when using the radio and you need to be qualified to do so, which ensures that you have received some basic training. However, gaining an operator's certificate is not at all difficult or expensive and presents no problems to the average inland waterways leisure craft user.

Why do we need it?

Larger vessels than ever before are now using our freight waterways, many of which are tidal with strong currents, and one of the reasons that they are able to do this safely is the ability of skippers and pilots to communicate by radio with other vessels and with port operators and navigation authorities. By using the radio boaters can build up a picture of the positions of other large vessels and meetings at difficult places can be avoided, locks can be made ready before arrival, nearby vessels can be warned in advance of impending manoeuvres and so on.

Although your small pleasure vessel on the lower Trent, for example, may have plenty of room to keep out of the way, whereas a 3000 tonne ship is fairly constrained in its movements, this does not mean that small vessels do not need radio. Provision of marine-band VHF radio is a major benefit for various reasons, which all have safety implications.

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[1] GMDSS – the Global Maritime Distress & Safety System is now in use in European coastal waters and the fitting of GMDSS communications equipment is obligatory for commercial ships over 300 Gross Register Tonnes and for certain classes of fishing and passenger vessel. Pleasure craft are strongly recommended to fit such equipment if operating at sea.

[2] VHF stands for Very High Frequency and describes part of the radio spectrum – marine-band VHF radio operates on internationally agreed frequencies in the band from 156MHz to 163MHz.

- In an emergency, as well as being able to call the nearest lock keeper, port control or coastguard (depending where you are), marine-band VHF also gives you the best chance of attracting help from a nearby vessel. Another vessel will often be able to reach you before the emergency services do.
- Because radio is now virtually universal among commercial vessels on the larger freight waterways, there is a tendency to rely on it as a means of ascertaining the locations of other vessels. If they hear you on the radio, they will know where you are likely to be and can call you to warn of their approach, if necessary (provided you are listening on the right channel!).
- By keeping a listening watch on the correct channel, you will build up a picture of other traffic and this may enable you to avoid meeting a large vessel at an awkward passing point, for example.
- You will be able to call for locks and bridges to be prepared before you arrive. This is particularly important on fast-flowing tidal waterways, where waiting outside locks may be hazardous and best avoided if possible and where you really need to know well in advance if you are going to have to wait for a bridge to be swung. Most leisure craft horns are not up to the job of getting the attention of a bridge keeper from say 500m away - a suitable horn will cost as much as a marine-band VHF radio set anyway. As an example, many inland craft would be in serious trouble heading through Selby with a good tide behind them, if they had to get near enough to the railway swing bridge to attract attention using their horn and then had to try to hold back to wait for a train to pass!
- In some busy areas, the availability of marine-band VHF radio has allowed establishment of Vessel Traffic Services (VTS), allowing monitoring and control of vessels, to improve safety (in the same way as air traffic control regulates aircraft movements at an airport).
- If cruising in company, you will be able to stay in touch with your companion vessel(s) for safety and planning purposes (but not idle chat, which is not allowed on the public channels).

Comparisons are sometimes made with the days before VHF radio, when everyone seemed to manage without frequent disasters, simply by keeping a good look-out. That may be true, but freight traffic tended to be regular, vessels were smaller and most freight operators knew who else was working on the waterway, their traffics and how they worked with the tides. It is only recently that large numbers of pleasure craft have been using many of these waterways, often moving at times and on routes that are not traditional and sometimes skippered by boaters who are not fully familiar with the waterway or with traditional means of communication such as sound signals or flags. All these factors conspire to produce a situation where VHF Radio on pleasure craft unquestionably leads to an improvement in safety, if used correctly, although it does NOT excuse you from keeping a good look-out as well!

Mobile phones do not provide the facility to communicate generally with other vessels and citizens' band (CB) radio gives you no guarantee that anyone is listening. For these reasons, although a valuable additional means of communication, they are NOT a satisfactory alternative to marine-band VHF radio, although they may provide valuable additional means of communication.

For these reasons, IWA strongly recommends that all pleasure craft using larger waterways in active use by freight carrying vessels, or any tidal waterway[3], should carry marine-band VHF radio and have someone on board who is qualified and able to use it correctly.

[3] With the exception of the tidal Broads and short inland sections, such as the Bedford Ouse between Earith and Hermitage.

In an organised convoy, it may be sufficient in some cases for one or two craft to carry radio, provided that vessels all keep in close contact by other means.

In many cases, the navigation authority requires craft to carry radio and to maintain a listening watch. For example, in the Port of London Authority area marine band VHF radio is mandatory on any craft over 13.7m (45ft) length (with a special exemption for narrow canal craft travelling between Teddington and Brentford, subject to reporting by phone). VHF is also obligatory for all powered vessels on the Humber, the Trent seaward of Gainsborough, the Yorkshire Ouse seaward of Hook Railway Bridge and a number of other tidal waterways which form vital links in the connected inland waterway system. A summary of legal requirements for pleasure craft using such links is provided in **Appendix A**.

Is it difficult to install and use?

To use marine-band VHF radio, you need a transmitter/receiver set on your boat or a portable set. For frequent users of these larger waterways, it is worth investing in a fixed set, with a separate aerial mounted as high as possible. Installation is simple, requiring only a link to the boat's DC power supply and a connection to the aerial. On narrow boats, where you are standing outside in the wind, perhaps with significant background engine noise, an external speaker on the cabin top is a useful accessory – the type used by the RNLI on their inflatable lifeboats is the best bet, as these are waterproof. If you will be using your vessel at sea, you should fit GMDSS capable equipment and this will also provide benefits on the larger inland waterways.

If your planned trips on these waterways are on an occasional basis, a handheld (ship portable radio) set (borrowed or hired) may be a more practical and affordable option, although these will not give as good a range as a set with a separate antenna.

Your 'ship radio station' (i.e. your fixed radio installation) or your 'ship portable radio station' must of an approved type and must be licensed with the Radiocommunications Agency (RA). On application through OFCOM, who deal with maritime radio licensing for the RA, you will be given a licence and a call sign. The licence is available free and can be applied for on the OFCOM website (http://licensing.ofcom.org.uk/radiocommunication-licences/ships-radio).

Users must be qualified to operate the set or must use it under supervision of a certificate holder (except for marina Channels M1 and M2), although in an emergency with risk to life, anyone may use the radio to call for help. To obtain the necessary certificate [4] is straightforward and the Royal Yachting Association administers the necessary short course and examination [5], which can be undertaken at very many centres, including in the Midlands, far from the sea. Having passed this and declared that you will preserve the secrecy of correspondence, you will be given your certificate, complete with your photo, which is valid permanently unless revoked.

The reason for the regulation of radio use is to make sure that you can use it correctly in an emergency situation (yours or anyone else's) and to maintain discipline in the use of the correct channels and procedures. You should make sure you remember how to make and how to respond to a Mayday (emergency) call, similarly for Pan Pan (urgency) calls, Pan Pan Medico (medical urgency) calls and Securité (safety) calls. Write down the procedures and keep the crib

[4] The *Short Range Certificate*, which allows you to use VHF voice radiotelephony on the International Maritime Mobile channels, including use of digital selective calling equipment, as used in the GMDSS. Holders of the former *Restricted Certificate in Radiotelephony – VHF only* are still qualified to use VHF voice radiotelephony but not GMDSS. *Restricted Certificate* holders can upgrade to the *Short Range Certificate* by attending a short course.

[5] For details of the nearest course, contact the Royal Yachting Association, RYA House, Romsey Road, Eastleigh, Hants. SO50 4YA. Tel 023 8062 7400 www.rya.org.uk/coursestraining/Pages/default.aspx

sheet handy. It is worth noting that use of marine VHF radio on international channels without a radio licence or operator's certificate can attract a summary fine of £5000 or a six month prison sentence, or an unlimited fine and two years if it goes to the Crown Court!

Which channel?

There are 57 VHF channels available in the International Maritime Mobile Service, numbered 1-28 and 60-88. They have different allocated uses, including inter-ship communication, port operations and ship movement and some channels are allocated for more than one use. Some channels use simplex operation (single frequency) and this applies to all intership channels, while some of the port operations channels use duplex operation (different frequencies for transmission in each direction).

There are also the private channels (29-59) of the UK Maritime Mobile Service, which are licensed to specific commercial users on application. These are used for communication between private coastal radio stations and ships, for commercial purposes, and do not concern us here, except for Channel 37 (Channel M), which is allocated as a Marina channel, as are Channel M2 (used for yacht race control) and international Channel 80 (a duplex channel). M1 and M2 are for use by pleasure craft only, for communication between vessels and marinas or yacht clubs and none of these three marina channels may be used for intership communication. Use of channels M1 and M2 is covered by your ship radio licence, in addition to the international channels.

For vessels fitted with GMDSS compatible equipment, Channel 70 is the calling and distress channel. This channel must only be used for digital selective calling and never for oral communication. Channel 16 is the calling and distress channel for voice communication and is also used as the working channel for distress calls initiated on Channel 70. It must only be used for distress, urgency or safety working or for establishing contact, after which you must transfer to a working channel. In most cases, on inland waterways, you should call first on the relevant working frequency, not Channel 16. This will all be covered in your RYA course.

You will be concerned mainly with 'inter-ship communication', 'port operations' or 'marina' channels. Locks, bridges and port control stations all operate on 'port operations' channels and those relevant to UK inland freight waterways are listed in **Appendix B**, which also includes some isolated waterways accessible to trailed boats. This makes it clear which channels you should use for intership working or calling up locks or bridges. Marinas on these waterways with marine VHF radio and visitor facilities are listed in **Appendix C**.

Note that you should maintain a listening watch on the appropriate port operations channel for the waterway, which may be different from the channel for locks. For example, on the Thames in London you must listen on Channel 14 but you will need to change to Channel 80 to call Limehouse Lock. Similarly, travelling from Hull to York, you must listen on Channel 12 (VTS Humber) as far as the Humber Bridge; you should then change to Channel 15 for the Ouse up to Goole (Hook) Railway Bridge, then to Channel 9 up to Naburn, upstream of which convention dictates that you listen on Channel 6. However, to call Barmby, Selby or Naburn locks you will need to change to Channel 74 or to call Goole Docks you will need to change to channel 14.

Relevant 'listening watch' channels are listed in **Appendix B**. These are important, as commercial vessels will expect you to listen on these channels and will use them if they call you. By monitoring radio traffic on these channels you will also learn what large vessels are moving and where. To contact another vessel on these waterways, try calling first on the 'listening watch' channel, then try Channel 74 if on a CRT [6] waterway, and only use Channel 16 if this does not

[6] CRT - Canal and River Trust, which operates a number of the more inland freight waterways

achieve a response. In some cases it may be useful to call a group of vessels, for example, on the Trent north of Keadby a call to 'Trent Ships' on Channel 15 may be useful if you want to ask if there is any movement occurring on the lower reaches.

You should not forget that absence of a response to your call does NOT mean that the route is clear for you. Your radio may not be working, your antenna may not be high enough for the location, you may be calling on the wrong channel or the other skipper may not have heard or may have heard but not replied. Always proceed with care and keep a good look-out for larger vessels. At some locations with restricted visibility, it is common practice to announce your approach and direction of travel on the 'listening watch' channel. You will not necessarily get a reply but other craft may have received your message and adjusted their progress to avoid meeting you at an awkward place.

Channel 74 deserves particular mention. This is a port operations channel allocated to the Canal and River Trust's locks and bridges listed in **Appendix B**. Contrary to widespread rumour, it is not a private Canal and River Trust channel and is also allocated to various other port operators in the UK. Channel 74 is not allocated for general inter-ship use but, within a port, intership communication on ship movements and safety should be made on the port frequency [7]. This is where some confusion arises – where are the limits of the port, when we are considering a whole network of inland waterways with dispersed locks fitted with radio? In practice, you should keep a listening watch on Channel 74 and use this channel for initial intership contact on the following CRT freight waterways.

- Aire & Calder Navigation
- Sheffield & South Yorkshire Navigation (below Rotherham)
- Trent (upstream of Cromwell Lock)
- Lea (Lee)
- Weaver
- Severn and G&S Canal
- Crinan Canal
- Caledonian Canal

However, note the different channels that you should monitor on the Ouse, Trent, Humber, Thames and Severn tideways. Most modern VHF sets now have a scan facility, so you can monitor two or more channels simultaneously. This can be particularly useful (e.g. to listen on both Channel 9 and Channel 74 on the upper Yorkshire Ouse tideway), but you must make sure that you know how to lock on to the right channel before replying.

Under the GMDSS system, Channel 13 is now the internationally agreed channel for ship to ship communication on navigational safety matters and ships are encouraged to maintain a listening watch on this channel (as well as Channels 70 and 16) outside areas covered by port operations or VTS. However, Channel 13 should not be used for inter-ship communication on anything other than navigational safety matters or port operations.

You should not use the VHF radio for long chats about nothing in particular – it is in fact forbidden to make 'unnecessary transmissions or transmit superfluous signals'. However, there are conventions as to what is tolerated on various channels. Intership communications that are not strictly relevant to vessel navigation should be kept off Channel 13 and off channels that are allocated to local port operations. Similarly, you should avoid channels that have other regular uses; for example, Channel 9 is frequently used for communication between ships and tugs. In the UK, you should use Channels 6, 8, 72 or 77 for general inter-ship communications. If you are

[7] See OFCOM information sheet on Coastal Station Radio – RA290

in a group sailing together, it is useful to agree in advance which channel you will use for communication within the convoy.

In all cases, use the minimum power that will achieve the necessary range – there is no point in transmitting 25 Watts of power to a vessel 100 metres away, when 1 Watt will do. Using low power minimises interference with other users.

The GMDSS

By 1999, all vessels covered by the SOLAS Regulations [8] were required to fit radio equipment compatible with the Global Maritime Distress and Safety System. Under this system distress calls are initially made digitally on Channel 70, automatically alerting all other ships and the Coastguard stations with your identity and (if you have an electronic navigator linked up) your position. Your oral MAYDAY call is then made on Channel 16, as previously. Normal calls for specific ship stations or coast stations are made by digital selective calling (DSC), where the call is made to the station's MMSI number (like dialling a phone number). This activates only the radio of the called station, which then switches to the selected working channel.

Pleasure craft are not required to fit GMDSS equipment at present (although if you are travelling to foreign ports it will be essential) but there are implications of relevance to inland waterway vessels. The principal issue is that, while GMDSS equipped ships automatically maintain a listening watch on Channel 70, they have not had to maintain watch on Channel 16 after February 2005, although they are encouraged to do so, and to monitor Channel 13 while at sea. Similarly, the MCA coastguard stations no longer keep a dedicated 'headset' watch on Channel 16, although they have undertaken to maintain a 'loudspeaker' watch (which means there will not be a radio officer dedicated to monitoring Channel 16 only). This is really only important on very maritime inland waterways, as on most UK inland waterways you will be out of range of the coastguard stations anyway and you and other vessels will be working on port operations channels.

Information on air

Your marine VHF radio is a useful source of navigational information. In many of the larger port areas and some coastal areas, vessel traffic services (VTS) radio stations are in operation. These give regular broadcasts on ship movements, works in progress that may cause obstructions, divers working and tide levels, as well as weather forecasts. Ships are required to report to the VTS when passing certain waypoints, although pleasure craft are usually exempt from this requirement. You can call the VTS to ask for specific information (for example tide levels) – although by listening to the broadcasts and communications with other ships you will probably pick up most of what you need. These are often busy radio stations. You should avoid calling unless it is absolutely necessary or if you are required to report your passage of reporting points. You should keep any messages professional, succinct and confined to the essentials – remember, all other ships in the port will be listening to you!

Maritime Safety Information (MSI), including weather, sea state and navigational warnings, is also available through broadcasts by the HM Coastguard, at published times on Channel 10, 23, 73, 84 or 86, after an announcement on Channel 16, if you are within range of a coastguard radio station. This replaces the weather broadcasts previously made on Channel 67 (the small boat safety channel).

[8] SOLAS – the international Saving of Life at Sea Regulations – which apply to larger vessels at sea

The Collision Regulations (COLREGS)

Vessel movements at sea are governed by the internationally agreed Collision Regulations [9]. These also apply on most inland freight waterways. While the rules about avoiding collisions are fairly simple on more inland freight waterways (keep to the right to avoid collisions, unless signalled to do otherwise), you need to be slightly more familiar with the rules if you are entering larger estuarial waterways.

The main point to understand is that the rules require you to alter course to starboard when you are on a collision course with another vessel (Rule 14). If the course of both vessels is such that there is no danger of collision, do not expect the other vessel to alter course so as to 'keep right'. The rules also explain which vessel gives way in a crossing situation (the vessel which has the other on her starboard side must give way – Rule 15).

On canal and river waterways, vessels should keep as far to the right as is safe and practicable (Rule 9). Be aware however that a large vessel may need to move across the waterway frequently to find the deep water and you should communicate by radio or take note of sound signals, in case a ship coming the other way wishes to pass you on the 'wrong side', i.e. by keeping to the port (left) side of the channel. Note that pilots and vessel skippers will often refer on the radio to passing 'red to red' (the normal situation where you are both keeping to the right and pass port side to port side) or 'green to green' (where you both keep left and pass starboard to starboard).

The COLREGS also stipulate lights to be carried – see the next section. As well as making sure you have the correct lights, you should also learn to recognise other light combinations, for example as carried by a tug and barges. Keep a suitable reference booklet handy if you are moving at night or in poor visibility.

Navigation lights

Contrary to widespread belief, the single white light that fulfils requirements for navigation at night or in restricted visibility by a narrow boat on the English narrow canals does not fulfil legal (or commonsense) requirements on some larger CRT waterways or on many other freight waterways. You are more likely to be travelling at night on tidal waterways, as your movements may be restricted by tide times. On most such waterways, to travel at night in a power driven vessel, you MUST show the following lights, visible at the range indicated, when underway, as stipulated in the COLREGS (Rules 22 and 23).

Vessel length / Light	50m or more	20m - 50m	12m – 20m	Less than 12m
White masthead light	6 miles %%	5 miles	3 miles	2 miles
Red port sidelight	3 miles	2 miles	2 miles	1 mile
Green starboard side light	3 miles	2 miles	2 miles	1 mile
White stern light	3 miles	2 miles	2 miles	2 miles

%% - two such lights required, on separate masts.

[9] The International Regulations for Preventing Collisions at Sea, 1972, plus amendments adopted November 1995 – effected in the UK through The Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 (S.I. 1996:75.)

For small craft (less than 12m in length) masthead and sternlights can be replaced by an all-round white light and sidelights can be carried in a combined lantern. For vessels less than 7m in length, sidelights are not mandatory but should be carried if practicable. Note the visibility requirements: many narrow boats over 12m long are fitted with navigation lights that are not legal in this respect, as many boat builders and fitters unfortunately do not seem to know or care about the regulations.

On most larger waterways, including CRT commercial waterways, you are also required to show an anchor light when moored on the waterway at night – this is an all-round white light visible at 2 miles (or two lights visible at 3 miles for craft over 50m long) (Rule 30). The requirement for full navigation lights (with a few minor relaxations in some cases) applies to the following waterways. Note also that on all other CRT waterways, vessels other than narrow canal boats must carry both masthead light and stern light.

- Humber
- Hull (Humber to Hempholme)
- Ouse (Yorkshire)
- Aire & Calder Navigation (A&CN) *
- Sheffield & South Yorkshire Navigation * (below Doncaster including S&KN and NJC)
- Trent (upstream of Gainsborough) *
- Trent (downstream of Gainsborough)
- Witham, Welland and Nene tideways
- Great Ouse tideway and New Bedford River
- Yare (sea to Norwich)
- Lowestoft Harbour/Lake Lothing
- Orwell and Stour tideways
- Colne, Brightlingsea Creek, Blackwater
- Crouch, Roach and Havengore
- Lee (Thames to Hertford)
- Thames (PLA and EA sections)
- Medway tideway
- Severn tideway
- Bristol Avon tideway and Bristol Floating Harbour
- Gloucester & Sharpness Canal and R. Severn (Gloucester to Stourport) **
- Weaver (MSC to Northwich) and Weston Canal *
- Mersey and Manchester Ship Canal
- Ribble (sea to Preston) and Douglas (to Tarleton)
- Clyde (sea to Glasgow Green)
- Crinan Canal
- Caledonian Canal
- Tay (sea to Perth)
- Forth (sea to Stirling)
- Tyne (sea to Wylam)
- Tees (sea to Aislaby)

* - narrow canal craft need only show their headlamp and sidelights – but see note on headlights below.

** - narrow canal craft need only show their headlamp and stern light – but see note on headlights below.

Remember, no matter how small your boat, it is just as important that other boats can see you. When faced with a big ship in a sudden fog, you may end up wishing you had made sure your lights were up to scratch.

Although the rules are relaxed for narrow canal craft on some freight waterways, allowing use of a headlight instead of a masthead light, IWFG strongly recommends that, if you are venturing onto these larger waterways at night, you fit proper navigation lights and only use your headlamp occasionally, to pick out bridge details or when mooring, for example. The last thing a tanker skipper needs, when heading up the Aire and Calder Navigation at night with 600 tonnes of petrol, is to be dazzled by a small boat doing 6mph using a headlight with a beam designed for use on a car travelling at 70mph! Unfortunately, there are many narrow boats fitted with such a totally

unsuitable light (in some cases even more than one!!). On larger waterways at night, you will be navigating using lit marks or buoys, as will everyone else, and use of a headlight can cause a major hazard by dazzling skippers and pilots of oncoming craft.

Sound signals

These are less important than hitherto – because mariners now often use the radio instead. However, you may still come across them and on larger waterways used by ships it is essential to know the basic signals contained in the COLREGS and to use them where appropriate.

Signal	Meaning
One short blast	I am altering course to starboard (to the right)
Two short blasts	I am altering course to port (to the left)
Three short blasts	My engines are going astern (note that the vessel may still be moving forwards)

Other signals vary between waterways and you should check port or navigation authority literature for any local rules. There are also COLREGS signals for use in restricted visibility to indicate the situation of a ship, whether it is under way, stopped, not under command, under tow, at anchor or aground (Rule 35). You should keep a copy of the COLREGS handy for reference concerning these signals.

Waterway signage

Larger waterways are more likely to use signage complying with international (CEVNI [10]) or national standards; however, some waterways also have local signs. It is absolutely essential to familiarise yourself with these before venturing onto the waterway. Examples include the tidal Thames in London, where three red discs (daytime) or red lights (night) in an inverted triangle mean a bridge arch is closed, a bundle of straw by day or white light by night mean an arch has restricted headroom and an isophase white light illuminated on a bridge arch means a large vessel is approaching.

Position fixing

Assuming you have a suitable waterway guide, the biggest problem you are likely to have in knowing where you are on the narrow canals is the odd bridge having lost its number. However, as you move onto bigger waterways, it becomes more difficult.

Some waterways (such as the Yorkshire Ouse) have numbered beacons along the banks, while larger CRT waterways are now provided with kilometre posts, which are invaluable, as long as you have a chart that shows them. On wider waterways, like the Humber or the Severn Estuary, the channel is marked by buoys or light floats, red to port and green to starboard as you head inland (lateral marks), as well as other buoys marking hazards. At night, bankside beacons and floating marks may be lit with red, green, yellow or white lights and individual marks may be recognisable by the lights flashing in a particular pattern.

[10] CEVNI - Code Européen des Voies de la Navigation Intérieure

Navigation marks are shown on charts of the area [11]. These range from Admiralty charts for larger waterways, to charts produced by the port authority and charts for more inland waters produced specifically for the pleasure boater [12].

If you are venturing onto any freight waterway, especially tideways, make sure you have a suitable guidebook or chart and know what the symbols mean, before setting out. On more maritime waterways, you may find it worthwhile to purchase or borrow a GPS (Global Positioning System) navigator to give you the extra confidence of knowing exactly where you are, especially if visibility becomes poor during your voyage. Hand held GPS receivers, which show your position to better than ±10 metres using satellite signals, are now widely available and are invaluable if you plan to get into the saltier extremities of the waterway system. Knowing exactly where you are is important if you need to call for help - even well inland, such as on the Trent tideway.

Voyage plans

The notes above are not intended to deter anyone with a suitable boat from visiting larger freight waterways, simply to help make your voyage as safe as practicable for you and for other waterway users. However, this will only be the case if you do a bit of preparation and obtain and read relevant information in advance. The waterway authority may well have published advice - ask them or look on the web. Lock keepers are often very pleased to give advice, boat clubs in the area can also be a source of helpful information and nautical almanacs give useful details for more maritime waterways.

However, with the best will in the world, things can sometimes go wrong – an unexpected engine breakdown for example. Minor problems are less likely to develop into major ones if you can call for help on the radio, as explained above. For extra security, someone else should always know your voyage plan and be ready to call for help if you do not arrive where and when you are expected.

If you are travelling between staffed locks, the lock keepers will often keep an eye on things and will call ahead to the next lock with your estimated time of arrival. It is important to let them know if you change your plan *en route*. For instance, if you are heading up the Trent from Keadby Lock to Cromwell Lock and decide you have had enough and stop for the night at the tidal pontoons at Torsksey or Dunham – call Cromwell on Channel 74 and let them know. This could save CRT a lot of time and worry looking for you. Again, the radio is invaluable in such circumstances.

Further reading

A wide variety of books, charts and other publications is available, giving further advice on navigating larger freight waterways, and a selection is detailed in **Appendix C**.

[11] Note that lit marks may have lights that are fixed (F), flashing (Fl), where the lit period is shorter than the dark period, isophase (Iso), where light and dark periods are of the same duration or occulting (Occ), where the light period exceeds the dark period. These details are marked on charts, along with details of the pattern and the colour of the light. Refer to Admiralty Chart 5011 (which is in fact a book) or a nautical almanac for full details of abbreviations.

[12] The *Cruising Guide to the North East Waterways*, produced by Ripon Motor Boat Club, and covering the Ouse, Trent and tributaries, is an excellent example of the latter. It is currently out of print but second hand copies may be available.

Disclaimer and limitations of this note

This guidance note does not address all you need to know about radio if you are going to sea, particularly if you intend visiting foreign ports. In particular, it does not cover radar, EPIRBs [13], SARTs [14] or detailed use of GMDSS – all of which are covered by the radio licensing procedures.

This note is provided to assist inland waterway boaters visiting UK freight waterways and should not be taken as a definitive statement of the rules concerning radio use, or of any other statutory legal requirements. The skipper is responsible for the safety of the vessel and all on board. IWA and its freight group accept no liability arising from the use of this guidance note.

Data on waterways listed in **Appendices A, B** and **C** was up to date at the time of compilation of this note but changes do occur and information on these would be welcomed, sent c/o the author at the email address below or to IWA, Island House, Moor Road, Chesham, HP5 1WA. Note also that VHF is being used more and more widely and freight waterways not listed may well be served by radio facilities in the future, so it is always worth making enquiries of other waterway users in the area.

The listing in **Appendix C** aims to cover all marinas on inland freight waterways with moorings for visiting motor cruisers and which are provided with marine-band VHF radio facilities. This is based on published information and the inclusion or omission of a particular marina implies no recommendation or otherwise by the IWA. Additions and corrections would be welcomed and should be sent to the author c/o the email address below or to IWA, Island House, Moor Road, Chesham, HP5 1WA.

Footnote

While you may consider that your vessel is fully suitable for the waters in which you are operating and your seamanship may be excellent, these may not be enough if your 20 tonne narrowboat gets into a close-quarters argument with a ship displacing several thousand tonnes, even if it isn't your fault. It may be worth remembering a short verse [15]:

> *Here lies the body of Michael o'Day,*
> *Who died maintaining the right of way,*
> *He was right, dead right, as he sailed along,*
> *But he's just as dead as if he'd been wrong.*

Defensive driving is just as important on the larger waterways as on the roads if you want to avoid accidents. VHF radio, proper navigation equipment and knowing how to use them can contribute greatly.

John Pomfret, Inland Waterways Freight Group, March 2013
email: pomfret@btinternet.com

[13] EPIRB - Emergency Position Indicating Radio Beacon

[14] SART - Search And Rescue radar Transponder

[15] As quoted in the Ripon Motor Boat Club *Cruising Guide to North East Waterways*.

APPENDIX A

LEGAL REQUIREMENTS FOR VHF RADIO FOR PLESASURE CRAFT ON MAJOR TIDAL WATERWAY LINKS IN THE CONNECTED WATERWAYS SYSTEM

Waterway	Between	Navigation authority	VHF radio requirements
Ouse (Yorkshire)	Trent Falls - Goole - Hook	ABP	**Required** on ALL powered vessels
Ouse (Yorkshire)	Hook to York	CRT	No requirement but Naburn Lock and Cawood Bridge are equipped with VHF radio
Humber	Sea - Hull - South Ferriby - Trent Falls	ABP	**Required** on ALL powered vessels
Trent	Trent Falls - Keadby - Stockwith - Gainsborough	ABP	**Required** on ALL powered vessels
Witham	Sea - Black Sluice - Grand Sluice	Port of Boston	**Required** on ALL powered vessels
Nene	Sea - Bevis Hall Bevis Hall - Dog-in-a-doublet	Fenland District Council Environment Agency	No requirement but Sutton Swing Bridge, Port Sutton Bridge, the Port of Wisbech, Wisbech Marina and Dog-in-a-doublet Lock are equipped with VHF radio
Great Ouse	Sea -Stowbridge	King's Lynn Conservancy Board (KLCB)	No requirement but KLCB and the ABP docks are equipped with VHF radio
Great Ouse	Stowbridge - Salters Lode - Denver - Earith	Environment Agency (Middle Level Commissioners for Salters Lode Lock)	No requirement but Denver and Salters Lode Locks are equipped with VHF radio
Thames	Sea to Brentford	Port of London Authority (PLA)	**Required** for all vessels over 13.7m length unless under oars or in a pre-arranged convoy with a VHF radio equipped vessel. Seven days notice is required for convoys.
Thames	Brentford to Teddington	Port of London Authority (PLA)	**Required** for all vessels over 13.7m length unless under oars or in a pre-arranged convoy with a VHF radio equipped vessel. Seven days notice is required for convoys. Narrow canal craft are also exempt but must phone London VTS on departure and arrival.
Medway	Thames to Allington	Medway Port Authority (Peel)	**Required** for all vessels over 50 gross register tonnes or over 40m length
City Docks (Bristol) and Portishead	Shirehampton to Hanham and Portishead harbour area	Bristol City Council	No requirement but Bristol City Docks, Bristol Floating Harbour, Prince Street Bridge, Netham Lock and Portishead Marina are equipped with VHF radio
Severn	Avonmouth area	Port of Bristol	No requirements but recommended. Bristol VTS control vessel traffic in the vicinity
Severn	Off Avonmouth to Sharpness/Lydney	Gloucester Harbour Trustees (GHT)	Recommended by GHT. Sharpness is provided with VHF radio
Mersey	Liverpool to Eastham	Mersey Docks and Harbour Co (Peel)	**Required** for all vessels over 50 gross register tonnes
Manchester Ship Canal	Eastham to Manchester	Manchester Ship Canal Co (Peel)	Recommended (note pleasure craft only accepted if pre-arranged)
Ribble	River Douglas to Preston	CRT and Riversway	No requirement but Preston Docks and Tarleton Lock are equipped with VHF radio

APPENDIX B UK INLAND FREIGHT WATERWAYS – MARINE-BAND VHF RADIO CHANNELS

Where not obvious, the call sign is in italics. For CRT locks and bridges, the call sign is of the form 'Naburn Lock', 'Llanthony Bridge' etc. Channels for listening watch during passage are bulleted and shown in bold type. Where more than one channel is listed for ports, the primary channel is shown in bold. Most port radio stations and many locks and bridges also monitor Channel 16, but always try the working channel first. Coastguard and major port radio stations maintain 24 hour radio watch (marked *) but many other radio stations operate only at tide times or when a vessel is expected – check locally in advance.

General VHF channel information	
Station	***Channel(s)***
Calling, distress and safety channels	16 70 (DSC only)
Inter-ship channel for navigational safety outside port or VTS areas (also for port operations in some areas)	13
Inter-ship only channels (preferred channels for general communications with other vessels)	06 08 72 77
Inter-ship (other channels approved for inter-ship use but also used for port operations)	10 09 73 69 67 17 15
Coastguard stations (including Humber MRSC, Yarmouth MRCC, Thames MRSC, Swansea MRCC, Liverpool MRCC, Clyde MRCC, Oban MRSC, Aberdeen MRCC) (call *Humber Coastguard* etc) *	16 67 (small craft safety channel) MSI on 10 73

♦	Port Radio stations, Locks and Bridges, clockwise from the Humber.	
	Station	***Channel(s)***
♦	Humber seaward of Clee Ness(*VTS Humber*) *	**14**
♦	Humber inland of Clee Ness to Humber Bridge (*VTS Humber*) *	**12**
	Grimsby Docks (*Grimsby Docks Radio*) *	**74** 18 79
	River Hull (*Drypool Radio*)	**22** 11
♦	Humber inland of Humber Bridge (*VTS Humber*) *	**15**
	South Ferriby Lock	74
♦	Ouse from Apex (Trent Falls) to Hook ##	**15**
	Blacktoft Jetty	14
	Goole Docks (*Goole Docks Radio*) *	**14** 19 09
♦	Ouse from Hook to Naburn	**09**
	Goole (Skelton) Railway Bridge (*Goole Bridge*) *	09
	Howdendyke Wharves	09
	Boothferry Bridge *	09
	Barmby Lock, Selby Lock	74
	Selby Rail Bridge $$, Selby Toll Bridge *, Cawood Bridge	09
	Naburn Locks	74
♦	Ouse above Naburn	**06**

- Use Channel 15 on the Ouse to Hook but also listen on Channel 14 for Goole movements.
$$ - Selby Rail Bridge is left open to river traffic when not attended.

	Station	***Channel(s)***
♦	Aire & Calder Navigation	**74**
	Ferrybridge, Pollington, Whitley, Bulholme, Castleford, Lemonroyd, Woodlesford, Fishponds, Knostrop Locks ++	74
	Woodnock, Kings Road, Birkwood Locks ++	74
♦	Sheffield & South Yorkshire Navigation (including NJC, S&KN)	**74**
	Keadby, Sykehouse, Long Sandall, Doncaster, Sprotborough, Mexborough, Waddington, Kilnhurst Flood, Aldwarke, Frank Price, Rotherham Locks and Barnby Dun Bridge ++	74
♦	Trent below Gainsborough ###	**15**
	Burton Stather Wharf	17
	Flixborough Wharf (*Flixship*)	17
	Grove Wharf	17
	Keadby Lock	74
	Gunness Wharf	17
	West Stockwith Lock	74
	Gainsborough Wharf	17
♦	Trent above Gainsborough ###	**06**
	Torksey Lock	74
	Cromwell, Nether, Town, Hazelford, Gunthorpe, Stoke, Holme Locks	74
♦	Witham Estuary	**12**
	Boston Docks	**12** 11
	Grand Sluice	74
♦	Nene tideway	**14**
	Sutton Bridge Port	14
	Sutton Swing Bridge	09
	Wisbech Port	14
	Dog-in-a-Doublet Lock	77

- Listen on Channel 15 on the Trent seaward of Gainsborough but also on Channel 17 for shipping movements at Trent wharves. Listen on Channel 6 inland of Gainsborough.
++ - Many of these locks are operated for commercial craft only by mobile lock keepers with portable VHF sets. User-operation facilities are provided for pleasure craft.

	Station	Channel(s)
♦	Great Ouse tideway (*KLCB)*	**14** 11 12
	Kings Lynn Docks (ABP)	**14** 11
	Salters Lode Lock	73
	Denver Sluice	73
♦	Yare	**12**
	Yarmouth Harbour (*Yarmouth*) *	**12** 09 11
	Haven Bridge, Breydon Bridge, Trowse Railway Bridge, Carrow Bridge	12
♦	Lowestoft Harbour/Lake Lothing/Oulton Broad (VTS) (*Lowestoft Harbour Control*) *	**14**
	Harbour Bridge (*Lowestoft Harbour Control*) *	**14** 11
	Mutford Lock & Bridge, Carlton Swing Br. (*Mutford Control*)	**14** 09
♦	Orwell Navigation Service VTS (*Ipswich Port Radio*) *	**68**
	Ipswich Port (*Ipswich Port Radio*) *	**68**
♦	Stour (VTS) (*Harwich VTS*) *	**71**
	Harwich Harbour *	**71** 14
♦	Colne and Blackwater	**68**
	Brightlingsea Port (*Brightlingsea Port Radio*)	68
♦	Crouch, Roach and Havengore	**80**
	Havengore Lift Bridge (*Shoe Bridge*), also call Range Officer (*Shoe Base)* for clearance (24h notice required)	72
♦	Lea	**74**
	Bow Locks	80
♦	Thames (*London VTS*) (sea to Sea Reach No. 4 buoy) (*Port Control London*) *	**69** 18 20
♦	Thames (*London VTS*) (Sea Reach No. 4 buoy to Crayfordness) (*Port Control London*) *	**68** 18 20
♦	Thames (*London VTS*) (inland of Crayfordness) *	**14** 22
	Thames Barrier *(London VTS)* *	14
	Limehouse Lock (*Limehouse Marina*)	80
	Tower Bridge	14
♦	Medway & Swale (VTS) (*Medway Radio*) *	**74** 22 73
	Kingsferry Bridge	10
	Whitstable	**09** 12
♦	Exeter Ship Canal (*Port of Exeter*)	**12**
♦	Parrett (*Bridgwater Port Radio*)	**08**
♦	Bristol VTS (Avonmouth to Sharpness) *	**12**
	Bristol (*City Docks Radio*) (low power only)	**14** 11
	Bristol Floating Harbour	73
	Prince Street Bridge, Netham Lock	73

	Station	Channel(s)
♦	G&S Canal and Severn upstream of Gloucester	**74**
	Sharpness Port (*Sharpness Radio*)	13
	Purton, Junction, Hempstead and Llanthony Bridges	74
	Gloucester, Upper Lode, Diglis, Bevere, Holt and Lincomb Locks	74
♦	Tawe (*Swansea Docks Radio*)*	**14**
	Tawe Lock	18
♦	Dee	
	Mostyn Port	14
♦	Mersey (VTS) (*Mersey Radio*)*	**12**
	Mersey Radio (traffic reports, weather reports) *	09
♦	Manchester Ship Canal (Eastham to Manchester) (VTS) (*Eastham Port Control*) *	**14**
	Eastham Locks *	07
♦	Weaver and Weston Canal	**74**
	Marsh, Dutton, Saltersford Locks (also call-sign *Weaver Base*)	74
	Rock Savage, Sutton, Acton, Winnington Bridges	74
♦	Ribble, Douglas and Lune	**16**
	Preston Docks Lock (*Riversway*)	16 14
	Tarleton Lock	74
	Glasson Dock	69
♦	Clyde VTS(*Estuary Control*) *	**12**
♦	Crinan Canal (*Crinan Sea Lock, Ardrishaig Sea Lock*)	**74**
♦	Caledonian Canal (*Corpach Lock, Clachnaharry Sea Lock* and main lock flights)	**74**
♦	Tay	**12**
	Dundee (*Dundee Harbour Radio*) *	12
	Perth Harbour	09
♦	Forth (VTS) (*Forth Navigation*) *	**71** 20 12
	Leith (*Leith Harbour Radio*) *	12
	Grangemouth Docks *	14
♦	Tyne VTS (*Tyne Harbour Radio*) *	**12** 11 14
♦	Tees VTS (*Tees Port Control*) *	**14** 22 12
	Tees Barrage Lock (*Tees Barrage Radio*)	M

&& - Initial contact on Channel 14, then transfer to Channel 20

APPENDIX C MARINAS ON INLAND FREIGHT WATERWAYS WITH VISITOR FACILITIES AND MARINE-BAND VHF RADIO

Arranged clockwise round the UK starting from the Humber. If no reply on marina channel during staffed hours, try Channel 16, then change to working channel. * means 24h radio watch

Station	Waterway	Channel(s)
Grimsby Meridian Quay Marina (call *Fishdock Island*)	Humber	74
Grimsby Marina (call *Royal Dock*)	Humber	09, 18
Hull Marina *	Humber	80, M
Albert Dock, Hull (*Albert Dock Radio*)	Humber	09
Humber Yawl Club (*Brough Haven*) *	Humber	80
South Ferriby (*South Ferriby Base*)	Ancholme	80, M, 74
Selby Basin (CRT) (*Selby Lock*)	Yorks. Ouse	74
Naburn Marina	Yorks. Ouse	80 M
West Stockwith Basin (CRT) (*Stockwith Lock*)	Trent	74
Boston Marina	Witham	M, 06
Wisbech Marina	Nene	09
Suffolk Yacht Harbour	Orwell	80, M
Woolverstone Marina *	Orwell	80, M
Fox's Marina (*Fox's*) *	Orwell	80, M
Neptune Marina *	Orwell	14, 80, M
Ipswich Haven Marina (*Ipswich Port Radio*)	Orwell	68
Shotley Point Marina *	Stour	80, M
Titchmarsh Marina	Walton B/w	80, M
Brightlingsea Harbour (*Brightlingsea Harbourmaster*)	Brightlingsea Creek	68
Tollesbury Marina	Blackwater	80, M
Bradwell Marina	Blackwater	80, M
Blackwater Marina	Blackwater	M
Heybridge Basin (*Heybridge Lock*)	Blackwater	80
Maldon Quay	Blackwater	M
Burnham Yacht Harbour	Crouch	80
Essex Marina	Crouch	80, M
North Fambridge (*West Wick Marina*)	Crouch	80, M
King George V Entrance Lock (*King George V control*)	Thames	72
Gallions Point Marina	Thames	80, M
West India Dock * (for Poplar Marina) (*West India*)	Thames	13
Greenwich Yacht Club	Thames	M
South Dock Marina *	Thames	M, 80
Limehouse Marina	Thames	80
St Katharine Haven (*St Katharines*)	Thames	80, M
Chelsea Harbour	Thames	80

Station	Waterway	Channel(s)
Brentford Dock	Thames	M
Gillingham Marina	Medway	80, M
Medway Bridge Marina	Medway	80, M
Port Medway Marina	Medway	80, M
Embankment Marina	Medway	80
Queenborough Harbour Master (*Sheppey One*)	Swale	08
Queenborough Yacht Club (*Queen Base*)	Swale	M, 80
Iron Wharf Boatyard (*Iron Wharf*)	Faversham	08
Conyer Marina	Conyer	80, M
Portishead Quays Marina *	Avon	80
Bristol Floating Harbour	Avon	73
Bristol Marina	Avon	80, M
Lydney Harbour	Lydney Canal	M
Gloucester Docks	G&S Canal	74
Tewkesbury Marina	Severn/Avon	80, M
Swansea Marina	Tawe	80
Albert Dock Marina (*Canning Dock*)	Mersey	M
Liverpool Marina	Mersey	M
Fiddlers Ferry Yacht Haven	Mersey	M
Douglas Boatyard	Douglas	16, M
Preston Marina	Ribble	80, 14
Glasson Marina	Lancaster C.	80
Dumbarton Marina	Clyde	M
Bowling Harbour	Forth & Clyde	74
Ardrishaig Harbour	Crinan Canal	74
Bellanoch Bay Harbour (CRT) (*Crinan Canal*)	Crinan Canal	74
Crinan Harbour (*Crinan Boats*)	Crinan Canal	12
Inverness Harbour	Caledonian C.	12
Seaport Marina (*Clachnaharry Sea Lock*)	Caledodian C.	74
Granton Marina (*Boswell*)	Forth	M
Port Edgar Marina (*Port Edgar*)	Forth	80, M
Royal Quays Marina	Tyne	80
St Peter's Marina	Tyne	80, M

APPENDIX D FURTHER READING

A wide variety of books is available giving further advice on navigating larger waterways and a selection is detailed below. Many are available from IWA, Island House, Moor Road, Chesham, HP5 1WA, tel. 01494 783453 or consult their shop web site at www.iwashop.com.

For RYA publications, contact the Royal Yachting Association, RYA House, Romsey Road, Eastleigh, Hants. SO50 4YA, tel. 023 8062 7400, or consult their web site at www.rya.org.uk/shop.

Information is also provided by the Maritime and Coastguard Agency in Marine Information Notes (MIN), Marine Guidance Notes (MGN) and Marine Safety Notices (MSN) – these are downloadable from the MCA web site www.mcga.gov.uk or contact the MCA, Spring Place, 105 Commercial Road, Southampton, SO15 1EG, tel. 023 8032 9356 for queries about VHF radio.

OFCOM also produces information sheets available by downloading from their web site at www.ofcom.org.uk or by calling them on 020 7981 3131.

Geographically based references are arranged clockwise round the UK starting from the Humber

VHF Radio and Navigation

International Maritime Organisation (2003) *Convention on the International Regulations for Preventing Collisions at Sea 1972. Consolidated Edition.* IMO, London. IMO Ref. IB904E

International Maritime Organisation (2009) *SOLAS (Consolidated Edition)*. IMO, London. IMO ref. I175E

Royal Yachting Association (2011) *International Regulations for Preventing Collisions at Sea*. RYA ref. G2. [Colregs annotated for leisure users]

Royal Yachting Association (2012) *VHF Radio (including GMDSS).* RYA ref. G22.

Royal Yachting Association (2011) *VHF Handbook.* RYA ref. G31.

Royal Yachting Association (2012) *VHF Radio SRC and sample questions)*. RYA, ref. G26.

Specific waterways (in order round the coast, starting with the Humber waterways)

Reeds Nautical Almanac – published annually.

Nicholson/OS (2012) *No. 6. Nottingham, York and the North East*. 144pp. [Yorkshire Ouse, Selby Canal, Goole & Knottingley Canal, S&SYN, S&KN, NJC, Trent]

Ripon Motor Boat Club (1992) *A cruising Guide to North East Waterways* [Yorkshire Ouse, Trent and tributary rivers]. [Out of Print – occasionally available second hand]

Bowskill D. (1986) *Northeast Waterways*. Imray. 200pp. [Witham, Trent, Yorkshire Ouse and associated waterways] [Out of print – occasionally available second hand]

Canal & River Trust *North Yorkshire Navigations*. Free leaflet. [Includes Yorkshire Ouse, Selby Canal]

Canal & River Trust *Aire & Calder Navigations*. Free leaflet. [A&CN and C&HN systems]

NABO (2009) *Some advice for skippers using the Aire and Calder Navigation*. Free leaflet.

Canal & River Trust *East Midlands and South Yorkshire Navigations*. Free leaflet. [S&SYN, S&KN and NJC]

NABO (2009) *Some advice to skippers using the River Trent*. Free leaflet.

Canal & River Trust *River Trent*. Free leaflet. [Trent]

Bowskill D. (1998) *The East Coast – A pilot guide from The Wash to Ramsgate, 4th Edn.* Imray. 230pp. [includes all tidal waterways from the Kentish Stour to the Witham]

Jarman C., Cooper G. & Holness R. (2011) *East Coast Pilot Lowestoft to Ramsgate*. Imray. 144pp. [updates are available at www.eastcoastpilot.com

Bowskill D. (1999) *The Norfolk Broads and Fens*. 144pp [Witham, Welland, Nene, Great Ouse, Yare, Lowestoft]

Griffiths M (1999) *Swatchways and Little Ships*. Adlard Coles Nautical. 192pp. [Rivers and creeks of the Thames Estuary and Kent, Essex, Suffolk coasts]

Nicholson/OS (2012) *No. 1. London/Grand Union*. 157pp. [Includes Thames, Lea]

IWA (2006) *Thames Tideway Guide*. IWA London Region. 12pp.

Ludlow R. (2012) *Navigating the Thames*. Imray. 36pp. [Tidal Thames]

Port of London Authority (2012) *River Thames Recreational Users' Guide 2012.* PLA. Download free from www.boatingonthethames.co.uk/Cruising.

Port of London Authority (2012) *Mariners' Guide to Bridges on the Tidal Thames.* PLA.

St Pancras Cruising Club (2011) *Notes on visiting London's Waterways*. SPCC, Camley Street, London. [Series of notes covering Thames tideway, Bell Lane, Bow, Deptford, Barking, Dartford & Crayford Creeks and the Bow Back Rivers]. Download from www.stpancrascc.co.uk.

Gloucester Harbour Trustees (2011) *Marine Safety in the Severn Estuary and lower Wye. A Guide to Safe Navigation for Small Craft and Notes for River Bank Users.* Download from www.gloucesterharbourtrustees.org.uk.

Nicholson/OS (2012) *No. 2. Severn, Avon and Birmingham*. 157pp. [includes Severn above Gloucester, G&S]

Nicholson/OS (2012) *No. 5. North West and the Pennines*. 144pp. [includes Weaver and A&CN west of Castleford]

Peel Ports/British Waterways (2010) *Safety Guidance for Small Boat Passage of the River Mersey.* Download from www.merseydocks.co.uk/assets/pdf/small_boats_safety_04_2010.pdf [Includes Manchester Ship Canal]

British Waterways (Undated) *Ribble Link Skipper's Guide*. Dowload from www.ribblelink.co.uk/Skippers%20Guide.pdf [Douglas and Ribble tideways and Ribble Link]

Clyde Cruising Club (2012) *The Firth of Clyde. Sailing Directions.* Imray.

Royal Northumberland Yacht Club (1990) *Sailing Directions – Humber to Rattray Head*. RNYC, Blyth See www.rnyc.org.uk/saildir/amd.html for updates. [Humber, Tees, Tyne, Forth, Tay]

Charts

Ripon Motor Boat Club (1992) *A cruising Guide to North East Waterways* [includes detailed charts of Yorkshire Ouse and Trent]. [Out of Print – occasionally available second hand]

The Boating Association *Chart 3 – Yorkshire Ouse.* Version 10. [York to Trent Falls]

Thet Boating Association *Chart 2 – Tidal Trent.* Version 11. [Cromwell to Trent falls].

Heron Maps (2011) *The Broads*. [Yare, Lowestoft Harbour/Lake Lothing]

Geoprojects UK (2004) *The Thames Ring and London Ring Atlas*. [Thames inland of Limehouse]

Admiralty charts covering inland freight waterways

Number	Inland freight waterways covered	Scale
5011	Symbols and abbreviations used on Admiralty Charts (actually a book)	N/A
109	Humber (all of it), lower Trent, lower Ouse, Goole Docks	Various
3497	Humber – Hull to Immingham	Various
1188	Humber – Immingham to the North Sea	Various
1200	The Wash, Great Ouse to King's Lynn, Nene to Wisbech, Witham to Boston	Various
1536	Yarmouth and Lowestoft	Various
2693	Orwell Estuary and most of Stour Estuary ##	Various
1491	Lower Stour Estuary	1:10000
1594	Upper Stour Estuary	1:10000
3741	Colne Estuary and Blackwater Estuary ##	Various
3750	Crouch Estuary, Roach Estuary and Havengore ##	Various
1185	Thames Estuary – seaward of Holehaven - and lower Medway Estuary ##	1:25000
2484	Thames Estuary – Canvey Island to London Bridge ##	Various
1186	Thames Estuary – Canvey Island to Tilbury	1:12500
2151	Thames Estuary – Tilbury to Woolwich	1:12500
3337	Thames Estuary – Barking to London Bridge	Various
3319	Thames Estuary – London Bridge to Richmond	1:12500
2482	Medway Estuary and The Swale ##	Various
1834	Medway – Sheerness to Hoo ##	1:12500
1835	Medway – Hoo to Maidstone	Various
1859	Bristol Docks	Various
1166	Severn – Avonmouth to Sharpness ##	1:25000
3490	Mersey – Eastham to Liverpool	1:15000
3478	Manchester Ship Canal	Various
1981	Ribble Estuary and Douglas Estuary	Various
1552	Lune Estuary and Glasson Dock	Various
2007	Clyde Estuary	1:15000
2320	Crinan Canal	1:7500
1791	Caledonian Canal	Various
1481	Tay to Perth	Various
738	Forth – Stirling to Grangemouth	1:20000
737	Forth – Grangemouth to Bridges	Various
736	Forth – Bridges to Leith	Various
1934	Tyne Estuary	Various
2566	Tees Estuary	Various

- also available as a small craft edition (folded) (same number prefixed by SC)

Imray Yacht charts and Stanfords charts are also available covering some inland freight waterways