

NABO GUIDANCE PAPER

MARITIME VHF RADIO

1 VHF Radiotelephones

1.1 In recent years it has become popular for owners of pleasure craft on inland waterways to install a VHF radiotelephone on board for communications between craft and for port operations. Users of commercial waterways find that the facility enables them to speak to lock keepers and bridge keepers in advance of a passage, or direct with another vessel to ascertain its movements.

1.2 Most VHF sets have up to 55 channels available for specified purposes (many of them related to defunct “ship-to-shore” telephone calls which no longer apply in the UK), in addition to special channels for marina and yacht club purposes. The operational range of VHF is generally restricted to “line of sight” – this can exceed 50 miles on open waters but on inland navigations the topography usually restricts the range to about 10 miles or so.

1.3 The cost of the equipment has come down over the years and it is now possible to purchase excellent radios for less than £100, with a fixed antenna costing up to £30 extra. Portable sets operating at lower power are also available for less than £60. All equipment must, by law, comply with specified technical standards previously signified by a “MPT” code or “ETSI” standard. Changes in EU legislation mean that less stringent standards than hitherto now apply to voluntarily fitted maritime radio equipment. Generally, the more expensive sets are better made and easier to use – but the decision is yours.

1.4 Installation is simplicity itself and can be undertaken by a practical owner in a few hours. VHF sets do NOT require an aerial earthing point and the only connections to make are to the battery supply (with an in-line fuse) and the plug-in antenna lead from the whip aerial.

1.5 Power consumption is very modest – a typical current demand of just a few mA on stand-by, rising to 5A when transmitting on full power.

2 Inland Waterways Craft

2.1 Craft on inland waterways are eligible to install and use VHF radiotelephones in exactly the same way as coastal and sea-going vessels, and are subject to the same operational restrictions and requirements.

2.2 Many boat owners use their radios as a means of keeping in contact with one another and for making social arrangements. However, you should avoid clogging up the airwaves with endless petty conversation. All calls are free but marine VHF is not an alternative to CB radio and operators must comply with

certain regulations and procedures. Intership broadcasts should not take place when a vessel is moored.

2.3 VHF radio can be a useful aid to boating safety especially on busy commercial waterways such as the tidal Thames where contact can be made with port operations control, which monitors the movement of all shipping. At present, however, it is NOT compulsory for private vessels under 13.7m in length to carry VHF radio when navigating the tidal Thames, and certain dispensations also apply to narrowboats over 13.7m in length in transit between Brentford and Teddington, and travelling in convoy to the west of Bow Creek (see Port of London General Direction No 4)

2.4 Useful booklets can be purchased which explain the correct usage of marine VHF radiotelephones and owners should familiarise themselves with the contents before using the equipment.

2.5 British Waterways commercial waterways provide port operations communications on Channel 74. A listening watch is also maintained on Channel 16 for emergencies.

2.6 It is recommended that “Low Power” be used when communicating with other vessels or base stations within a few miles distance. This reduces interference with other transmissions at greater distances, whilst enabling you to be heard locally. Use of “High Power” will not necessarily improve the quality of your transmission.

3 Licence Applications

3.1 It is a criminal offence to install a marine VHF radiotelephone without a valid licence issued by Ofcom (the Office of Communications regulatory body).

3.2 A Ship Radio licence application form can be obtained from:

Ofcom Licensing Centre
PO Box 56373
London SE1 9SZ

Tel 0207 981 3131
Fax 0207 981 3333

Postal applications will cost £20 but the service is free via the Ofcom website www.ofcom.org.uk

3.3 The licence will last for a lifetime and any amendments will be free either by post or via the website.

4 Operator's Qualifications

4.1 Whilst anyone may install the equipment and obtain a Ship Radio licence, a VHF radio can only be operated (i.e. used to transmit) by, or under the direct supervision of, a holder of a Certificate of Competence. For small craft a "Restricted (VHF Only)" certificate is adequate.

4.2 The certificate is obtained by taking a simple examination to demonstrate understanding of the correct procedures, particularly Distress calls and other safety procedures. Many yacht clubs and education centres offer short courses and may conduct the exam on their premises.

4.3 If equipment incorporating Digital Selective Calling is installed, it will be necessary to obtain a Short Range Certificate. A VHF only certificate can be upgraded to the higher qualification by taking a 1-day course and examination.

4.4 Without an operator's certificate the radio can only be used for monitoring (receive-only) purposes unless a DISTRESS situation exists, when persons in grave and imminent danger may use any or all means at their disposal to summon assistance. It is also permissible to use channel M (the "marina" channel, sometimes called Ch 37) and channel M2 (if fitted) because these are classed as "Private" channels and are not internationally recognised marine communication frequencies.

4.5 Details of the Certificate and examination centres can be obtained from:

Royal Yachting Association
RYA House
Ensign Way
Hamble
Southampton
Hants SO31 4YA

Tel 0845 345 0400
Fax 0845 345 0329

Website: www.rya.org.uk

4.6 Technical information and details of legal requirements can be obtained from:

Ofcom (the Office of Communications)
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Contact Centre:
Tel 0845 456 3000

Fax 0845 456 3333
Email: contact@ofcom.org.uk

5 Use of Channel 16

5.1 Channel 16 is the Distress, Safety & Calling channel. Except in emergencies, its use should be restricted to calling another station or vessel, before switching to an agreed working channel.

5.2 Nowadays, it is common practice for contact to be established with another vessel or station by calling direct on the working channel, providing you know the other station will be monitoring that channel.

6 Marina Channels

6.1 Pleasure craft are permitted to use Channel M (also known as the Marina Channel or Channel 37) to contact marinas which have VHF radio. This is a simplex channel which means that vessels can monitor both sides of a transmission.

6.2 Many marinas also operate on Channel 80 which is the recognised channel for traffic between pleasure craft and yacht harbours, etc. This is a duplex channel which means that vessels will only hear the replies and cannot monitor other vessels' transmissions.

6.3 Another channel termed "M2" is also available for use by sailing clubs and marinas.

7 GMDSS

7.1 Marine radio communications have been revolutionised by the introduction of the Global Maritime Distress & Safety System (GMDSS) which enables ships anywhere in the world to call for assistance using a digital calling procedure.

7.2 Yachts and small craft are not bound by the new conventions but may find themselves at a disadvantage in the future if they are unable to communicate direct with other ships and harbour authorities.

7.3 The Maritime & Coastguard Agency agreed to maintain a VHF Channel 16 watch until 2005 since when it has been downgraded to a "loudspeaker" watch with no certainty of distress calls being heard.

7.4 To benefit fully from the new GMDSS system it is necessary to install VHF radio equipment having Digital Selective Calling (DSC) which sends an automatic signal which is picked up by other stations.

7.5 Vessels having DSC radio equipment will be assigned a unique reference number (known as a MMSI) which is rather like having your own exclusive

telephone number. Other vessels and stations will be able to call your radio which will only alert you when it receives a message destined for it.

7.6 The equipment was very expensive when first placed on the market but prices have come down (sets are now available priced at £100 to £160) which makes it affordable when buying a DSC radio to upgrade from an existing set, subject to having to take an additional examination for the more complex procedures. In any event, all new equipment must be capable of being upgraded to full DSC standard even if you do not require it initially. Warning: it is false economy to purchase a DSC-capable set that requires an additional “box” at a later stage. Separate DSC controllers can cost you £200, they must be the same make as your basic VHF set and they require another whip antenna and occupy valuable space on board.

7.7 Most new marine radios are now DSC equipped but if you do not use the DSC facilities you are still permitted to operate the set using your existing permit.

7.8 A word of warning – DSC sets will only receive automatic signals when in the squelched mode. If your set is receiving background “noise” the DSC controller will not identify a digital signal.

7.9 A further word of warning – DSC alarms will sound until cancelled by the operator. Never leave your set on and unattended, especially if you have animals on board that might be profoundly disturbed by the noise.

8 Other means of radio communication

8.1 Mobile telephones have supplanted marine VHF radio in many cases where simple, confidential, two-way communications are required. Most people carry a telephone on board and this is an ideal way to contact marinas etc to make arrangements for berthing. However, it must be stressed that mobile phone signal coverage cannot be guaranteed in all areas especially at sea, and the use of marine VHF enables you to listen in to other users and allows them to hear your messages. This is particularly useful if you require assistance and do not know whom to call.

8.2 Some boat owners use CB radios to speak to one another by prior arrangement but the signal range can be poor and your messages are not private. CB is a fad that has largely had its day. Licences are free to under-21's and over-75's.

8.3 PMR446 2-way “walkie-talkie” radios are becoming more popular and may be purchased cheaply from many retail outlets. They offer short-range microwave communication up to about 2 miles on 8 channels but the use of additional codes means that over 300 effective channels are available. Despite this being Private Mobile Radio your messages can be heard by anyone using the same channel and privacy code if they are within range. Their use at public events and by youngsters can lead to congestion on the

airwaves. No licence is required for their use so you cannot complain if you experience interference from other users. They are useful for keeping in touch with friends and family in the immediate vicinity of your boat or onboard if your vessel is large!

9 Further Information

9.1 In case of difficulty or for more information members of NABO may contact the NABO Rivers Users' Co-ordinator or the Technical Committee.

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Whilst every care has been taken in the compilation of these notes NABO cannot accept responsibility for the use or consequences of the use of this information, not for any inaccuracies or obsolescence within the information.

Appendix 1

FIXED RADIO EQUIPMENT FOR PLEASURE CRAFT

MANUFACTURER	MODEL	FEATURES	PRICE INDICATION & SUPPLIER (February 2007)
Cobra	MR F55 EU	DSC, GPS interface, scan, dual watch, waterproof, channels M1 & M2, surface or flush mounting	£99 Compass Watersports mail order & Adrenaline Chandlery
	MR F55 W EU	White version of the above	£99 Adrenaline Chandlery
	MR F75 EU	DSC, larger display	£145 Adrenaline Chandlery
ICOM	IC-M503	Waterproof optional DSC	£259 suggested retail price guide + £200 for DSC controller
	IC-M401	Waterproof optional DSC	£189 suggested retail price guide + £200 for DSC controller £188 Gael Force mail order £218 Adrenaline Chandlery
	IC-M421	Combined DSC, waterproof	£250 suggested retail price guide £219 Force 4 chandlery or mail order
	IC-M505	Waterproof combined DSC Full features inc 2-way hailer & auto foghorn	£299 suggested retail price guide
	IC-M601	Waterproof combined DSC	£449 suggested retail price guide

		Full features inc 2-way hailer & auto foghorn	
Midland Radio	Neptune	DSC, ATIS, GPS interface, installation frame extra	£155 Compass Watersports mail order
NASA	SX35	DSC, 32 number directory, GPS interface	£155 Compass Watersports mail order
Navman	7100	DSC, ATIS, full channel search	£150 Compass Watersports mail order
	7200	As above + displays nav data	£199 Compass Watersports mail order
Raymarine	Ray 54E	DSC, ATIS,	£188 Compass Watersports mail order
Silva	S10	DSC, waterproof, flush mount kit extra	£150 suggested retail price guide £129 Force 4 chandlery or mail order
	S15	As above + interface with GPS and Navtex	£275 suggested retail price guide + £100 for Navtex antenna £350 suggested retail price guide for complete package £239 Force 4 chandlery or mail order without antenna £300 for complete package
Simrad	RD68	Full features, flush mount kit extra	£259 Force 4 chandlery or mail order (with free speaker)

XM	XM DSC	DSC, rugged construction	£114 Force 4 chandlery or mail order

Appendix 2

HAND HELD VHF RADIOS (February 2007)

MANUFACTURER	MODEL	FEATURES	PRICE INDICATION & SUPPLIER (August 2006)
Cobra	HH100VPEU	Mains charger	£50 Compass Watersports mail order £39 Adrenaline Chandlery
	HH300VPEU	Charger, hands-free kit	£89 Adrenaline Chandlery
	HH400 EU	Charger, hands-free kit	£119 Adrenaline Chandlery
Entel	HT640	Rugged, submersible	£149 Force 4 chandlery or mail order
ICOM	M1 Euro	Waterproof, charger	£299 Compass Watersports mail order £179 Force 4 chandlery or mail order
	M31	Waterproof, rechargeable	£149 Force 4 chandlery or mail order
	M31 Sport	As above but requires batteries	£99 Force 4 chandlery or mail order
Midland Radio	Atlantic 1		£65 Compass Watersports mail order
Raymarine	Ray 101E	12v charger	£ 165 Compass Watersports mail order
Silva	Star M298	Mains and 12v charger	£54 Compass Watersports mail order

	S12	Waterproof + mains adaptor	£85 Force 4 chandlery or mail order
XM	XM 2000	Charger + bag & 12v charger	£79 Force 4 chandlery & mail order