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Radiomicrophones

You may be a little bewildered by the range of prices and types of radio microphones, so here's a short introduction:

The quality and price ranges from home disco and 'karaoke' types costing £50 or less, right up to thousands of pounds for broadcast quality products. The main differences will be in transmission range, reliability of the radio (RF) link (see below), robustness of the hardware, and the audio / sound quality. With the cheapest, don't expect more than about 10 metres of range - any more, and you'll get gaps, or drop-outs, in the coverage, which may at worst give you a brief 'shhhtt' noise rather than silence.

Go more expensive, and you'll get a 'diversity' receiver with your radio microphone. Diversity means two separate receivers in one box, with two separate receiving antennas or aerials. The receiver that's getting the better signal is selected automatically -- so there's a good chance that if one receiver sees a gap in coverage, the other one is still working well. (But watch out -- some cheaper receiver boxes have two antennas but aren't true-diversity).

There are three different types of transmitter. Hand-held transmitters have the microphone and transmitter in the same microphone tube, which opens to allow you to fit batteries. Add-on transmitters fit on to a standard microphone, making it into a radio mike, although the lump at the base of your mic may not appear very elegant. Lapel microphones, headworn microphones (headmics) connect to a separate bodyworn pack / box that you can wear on your belt or in your pocket. If you're using a lapel microphone, it's often worth getting a better microphone than the standard one that came with the radiomic kit, because it will pick up less clothing noise, and probably be tougher made and of higher audio / sound quality.

There are two legal radio bands in the UK that don't need a licence to use – these are called deregulated frequencies: the 'VHF' one is between 173.7 and 175.1MHz (megahertz), and the 'UHF' one is between 863 and 865MHz. The UHF one is a pan-European allocation, but note that other European countries also allocate other bands, so don't assume that a radio mic bought in Europe is legal in the UK -- check! Manufacturers and vendors should put the frequency of their radio mic on the equipment and sales literature etc. Naturally, if you are going to use more than one, each needs to have its own frequency. Some more sophisticated designs allow the user to select from a range of frequencies. Do not assume that you will be able to use all frequencies, as intermodulation distortion and interference are common occurrences – often it is best to have at least 250khz between the frequencies you are using – 500khz upwards between frequencies even better.

Radio mics all need a battery. Some designs use a PP3 style 9V battery, and operate for a time between 3 and 10 hours from an alkaline. Newer types often use a pair of AA or even AAA cells and last for 5 to 10 hours. Be aware that the when the battery in a radiomic transmitter gets low on voltage (around 8.2v for a PP3, for instance) the radiomic audio signal (your voice) will often be muted by the radiomic receiver.