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Tech Talk

Home Recording Studios, Part 1 ©

by John McCarthy

Hi and welcome once again to Tech Talk. As a seasoned journalist and broadcaster, I've witnessed at first hand the enormous changes that technology has brought to creating programmes and recording techniques over the last thirty years. I cut my professional teeth on analogue audio equipment and although I believe that modern digital recording is a significant improvement over analogue in so many practical ways, I occasionally yearn to return to the days where no self-respecting radio broadcasting studio would be without three or four reel-to reel tape recorders, a couple of turn-tables, multi-channel mixing consoles and Ampex final mixdown machines. The weekly quasi-religious ceremony of cleaning recording heads, pinch-rollers, capstans and tape guides; the old tried and tested editing techniques, such as punch recording and splicing tapes by finding selections and marking the tape with a dot over the play head and then splicing the tape and sticking two pieces back together after perfectly aligning them. In fact, getting the perfect splice wasn't as easy as it sounds. Then there was azimuth adjustment and calibration in order to ensure optimum sound quality; all the people who studied and mastered these skills deserved the qualification and job title of sound engineers.

I still have a Revox PR99 at home plugged into the stereo and it always raises a nostalgic smile on my wrinkled countenance when pressing the start button. However, my pride and joy is an old Nagra, which cost me an arm and a leg back in '81 – a true masterpiece of mechanical engineering - which still works beautifully, and was the preferred "mobile" equipment for many journalists when conducting outside interviews – and I use the word "mobile" in inverted commas, because it weighs in at seven kilos with batteries and microphone, compared to most current handheld professional devices which are comparative atomweights at under 300 grammes. All in all, the only thing I don't regret about the analogue age is having to ship 7 and 10 and a half-inch reels at exorbitant costs to clients in faraway lands. Thank you, technology in general, and the internet in particular, as nowadays I can send even very large hi-quality lossless sound files for free to the four corners of the planet through specialised providers.

Home recording studios have now become very popular and financially more and more accessible, with an ever-increasing number of hobbyists and enthusiasts taking the plunge. There's a bewildering array of equipment on the market, and it's always a good idea to get some advice before, for example, buying a microphone, which more often than not is the first piece of kit to purchase in order to make podcasts or longer broadcasts.

The first thing you have to determine is your objective: in what sort of situation will you be using the microphone? There exist four major pick-up patterns, which will determine your choice. The stereo mode is obviously the best for easily capturing a realistic stereo sound. By centering the sound source – that's to say, your voice or instrument – you'll get equal amounts of signals in the left and right channels. If you want a little more on the right channel, move the source a little to the right, and of course the opposite if you wish to add a stronger signal on the left channel. Most users tend to record everything as centered as possible, and then pan either left or right when making the final mix-down.

Cardioid is the most commonly used pick-up pattern and can be useful in most situations, and will be your best choice for recording vocals, a podcast or voiceovers. When recording in this mode, sound directly in front of the microphone is picked up, while the sound at the sides and the rear isn't. Therefore, when recording a source, you'll have to place it directly in front of the microphone.

Omnidirectional mikes pick up sounds equally from all directions and are perfect for recording musicians playing at the same time, or recording a conversation between many people strewn around a room. In this mode, placement of the microphone isn't crucial.

Finally, there are bidirectional microphones, and these pick up the sound at the front and rear, while the sounds to either side are rejected as much as possible. This setting is perfect for recording an interview, where the interviewee is sitting opposite you. By placing the microphone between subjects – front of microphone facing one source, and the rear facing another – you can obtain a very natural sound without the complexity and added expense of using two or more microphones.

That's all we have time for, I'm afraid. Join me next week for another Tech Talk, where we'll be taking a look at USB, XLR condenser and dynamic microphones, audio interfaces and recording software. Feel free to get in touch if you'd like to comment or contribute, our e-mail address is contact@englishwaves.fr. Bye for now.