technique recording & mixing
GETTING A 'PRODUCED' SOUND

polished production

GIVING YOUR RECORDINGS A 'PRODUCED' SOUND

Why is it that some perfectly well-recorded songs sound like demos, while others sound like top commercial tracks? **Paul White** investigates the mystery of the 'produced' sound.

One of the questions we hear most from *Sound On Sound* readers is "Why doesn't my music sound as 'produced' as the music I hear on commercial CDs?" I'm sure you won't be too surprised when I tell you that there isn't a single, simple answer. Some people assume that the superior equipment used in pro studios is the key, but although competent gear is required to do the job properly, you don't actually need anything esoteric. Even when it comes to recording vocals you don't have to use expensive high-end tube capacitor mics -- artists such as Phil Collins and Mick Jagger often use relatively inexpensive dynamic models because that's what works best for them. A few years ago, the drum sound was what gave away most demos, but now we have good drum machines, drum samples and sample loops, as well as real drums, to choose from.

The secret of a produced sound starts with the source material. It doesn't matter what you do to your recording afterwards if this isn't up to scratch. It almost goes without saying that good timing and good tuning are essential, but the choice of sounds and the way in which acoustic instruments and voices are recorded has a huge bearing on the perceived quality of the end result.

Vox Clever

If you record vocals in a small, untreated room, the chances are that the resulting sound will be boxy, so place your mic somewhere near the centre (but not exactly in the centre) of a larger room and put up improvised screens (sleeping bags, duvets, blankets and so on) where necessary to kill the reflections. Used in this way, virtually any respectable mic will give you good results providing you use a pop shield. You can also record acoustic guitars

in the same environment.

Vocals invariably need compression, but what kind and how much? Listen to what you've recorded and try to establish how much variation there is in the vocal level. If you hear a lot of fluctuation it might be better to use a model of compressor that can pin down the level without changing the sound too much. The compressors that come as standard in Yamaha digital mixers are good for this, as you can really pile on the gain reduction without changing the sound too radically; there are also analogue models that can do the same. On the other hand, you may feel the vocals need thickening as well as levelling, in which case a compressor with a character of its own might be better suited to the job. Tube and 'opto' compressors generally produce the fattest sounds, and of course there are software plug-ins that emulate just about anything you can buy in a rackmount box.

The goal is to get the vocal sitting nicely with the backing track so that you don't feel the urge to turn it up or down in different parts of the song. Professional engineers may also spend some time fine-tuning vocal levels with their mixer automation systems, and if you use either a digital mixer or a computer-based recording system you can do the same.

Key Facts

Synth sounds must be chosen with care, because a lot of factory patches are designed to sound big and impressive for the benefit of those who choose their new instruments on the strength of 'preset cruising'! What sounds wonderful on its own might take up too much space in a mix so, if you don't want to edit the patch, try using EQ to trim off excess bass or high end. The EQ'd patch might sound odd in isolation, but it may well fit the track better. Another tip for those reluctant to get into heavy editing is to layer patches to get the desired result. For example, a deep bass sound mixed with a more percussive patch might help you produce a bass that you can hear as well as feel.

It's important not to over-orchestrate your arrangements, especially when you have fat synth pads and overdriven guitars occurring at the same time. The same is true of some treated drum loops, which can actually take up a lot of space. If in doubt, listen to some commercial mixes in a similar style to the track you're working with. You may be surprised at how little there is going on at any one time.

It may help if you get your sounds as close as possible to correct at source so you don't need to use a lot of EQ. Few budget mixers have the kind of EQ that works well when called upon to make major tonal changes, and often you'll find that the more you EQ, the harsher, boomier or less focused your mix becomes.

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Reduced Reverb

Once you've created space in your mix, don't give it all away by filling every available gap with heavy reverb. As it happens, reverb is one area where a decent-quality unit really helps, especially if you use a lot of small-room or ambient reverbs. You don't have to spend a fortune: the excellent

Lexicon MPX100 costs around £200, yet still offers the general feel of Lexicon's more expensive studio processors.

Bear in mind that heavy reverb tends to push a sound to the back of a mix, so if you want a vocal to appear up-front you should use a fairly bright reverb, with 80mS or so of pre-delay. Don't overdo the decay time, either, especially with up-tempo songs. Other effects should also be used carefully -- use an effect because the track needs it, not because you happen to have it! Dramatic effects can be made even more dramatic if you use them for short sections of a song rather than having them full-on all the way through, and delay effects often work best when the delay time is related to the tempo of the song.

Master The Situation

What many people don't realise is just how great a difference is made to commercial records at the mastering stage. Prior to mastering, you might be surprised at just how ordinary some mixes sound. Mastering often involves nothing more than compression, limiting and equalisation, but it has a dispro portionate effect because of the quality of the equipment being used and the expertise of the person using it. Yes, this is one area where the equipment *does* make a huge difference, though with all-in-one mastering processors now available at prices project studio owners can afford, it is possible to get a professional sound at home providing you have good ears and accurate monitors.

A good equaliser doesn't just change the spectral balance of a sound: it also seems to lift information out of a mix. One popular mastering technique is to apply an overall boost of just one or two dBs at around 15kHz with a wide bandwidth setting. This is what people mean when they talk about 'air EQ', 'sheen' or 'gloss'. With a nice equaliser this boost will lift out high-end detail while at the same time pulling the vocals forward, but it shouldn't make the sound harsh or toppy. Similarly, adding a gentle dip at around 180-250Hz may help clarify a muddy lower mid-range, while a boost at 70-90Hz will firm up a weak bass end. It is vital to use a classy equaliser for this job, though -- a cheap one just won't deliver the necessary fairy dust! (And a good mastering equaliser probably costs more than many people's entire computer-based recording system.) I use an SPL Vitalizer on some of my mixes, as it replicates many of the EQ functions of a mastering processor, and if you don't have the money to buy a high-end equaliser I'd recommend one of the lower-cost versions of the Vitalizer as an easy-to-use alternative.

Favourite Strings

Guitars and basses can be a dead giveaway that a recording is not a commercial one if they are poorly recorded. Sticking a mic in front of an amp is probably still the best way to get a live-sounding recording of a performance, but if this is not feasible there are so many good recording preamps around now that there's little excuse for getting a thin or buzzy guitar sound. However, go easy on the overdrive, and consider using less overdrive but combining it with compression if you need sustain. Use a gate to keep your guitar tracks clear of unwanted noise, and also try to reduce clutter in the arrangement: where two guitars are playing essentially the same chords, for example, first decide whether both guitars are actually necessary. If they are, consider using different chord inversions for one of the parts, or even a capo. Incidentally, acoustic guitars almost always sound better miked than DI'd.

Basses can actually be more difficult to record than guitars, because although they may sound great in isolation when DI'd via an active DI box and a compressor, they can still lack punch in the context of the overall mix. Again, consider miking the amp or using a guitar DI preamp so you can add just a little overdrive to warm up the sound. Compression will help keep the sound even and punchy. A good tip here is to make any necessary EQ adjustments when the rest of the track is playing, because then you'll be able to make the sound match the track. If you EQ the sound first it might sound great on its own, but could get completely lost when the other faders are brought up.

A very gentle overall compression of around 1.1:1 with a threshold of -30 to -40dB will

make a mix sound more even and more powerful. However, multi-band mastering processors add a lot of flexibility in the area of compression, because they give you the opportunity to perform operations such as applying more compression to the bass end than to the rest of the mix. This helps firm up the bass end only, and any spectral imbalance caused by the different compression ratios can be restored by adjusting the levels of the various frequency bands at the compressor's output.

Mastering also tends to involve limiting, a process similar to compression (but with an infinitely high ratio) that controls just the tips of loud peaks. Applying a little limiting will often make it possible to increase the avera ge level of a mix by several dBs without any side effects becoming audible. If you're starting from a 20- or 24-bit master and you reduce to 16-bit right at the end of the process, this has the benefit of using the whole of the bit resolution of the CD format, which means less noise, less distortion and better low-level resolution. It also makes your CD sound as loud as the 'produced' commercial CDs in your collection. Use a limiter specifically designed for mastering (such as the Waves *L1* plug-in or the limiter in your mastering processor) and don't over-limit, or you will start to hear the difference. Usually 4-5dB of limiting is all that's needed.

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Processing via tube or simulated tube circuitry can also warm up a mix (which is why tube EQs and compressors are popular for mastering), but again you get even more flexibility if this tube processing comes as part of a multi-band package. For example, adding a little gentle tube saturation only to the low band will noticeably thicken the bass and kick drum without spilling over into the midrange and high end. Similarly, adding high-end saturation has an effect similar to an enhancer, enhancing detail and and lending gloss. The secret with all these treatments is to use them sparingly and always compare the processed sound with the unprocessed to make sure you have not gone too far. A good processor will transform a recording with just a dB or two of adjustment where needed. If you find you're using a lot of processing, suspect your basic mix of being too wide of the mark.

Summing Up

As you can see, the magic of musical production isn't something you 'paint' on at some point in the recording process, but is rather the result of attention to detail at all points throughout the recording, starting with the musical arrangement and choice of sounds. Nevertheless, processing at the mastering stage (ie. after your mix) can make a huge difference. Professional mastering is expensive for a reason: pro mastering engineers have great equipment and a lot of experience in using it. If you're not confident you have the necessary equipment and expertise to do your mix justice, think about getting your work professionally mastered, especially if it's destined for commercial release. If you're going to do this, don't do any processing at all on your final mixes -- leave each track just as it is.

On the other hand, if your mix is 95 percent there and you don't have the budget for pro mastering, don't be deterred from doing the job yourself, as there are now several hardware mastering processors (as well as innumerable software plug-ins) within the reach of serious project studio owners, and these can really help to get the job done. SOS

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