About The Author
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Alex first picked up a bass when studying engineering at university, and his quest for sonic perfection led him to found Barefaced Audio, while also leading The Reluctant, an alt-ska/funk outfit.

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DESIGNED AND BUILT IN ENGLAND

This column is brought to you in association with Barefaced Ltd who manufacture high-output speaker cabs for the gigging bassist. Barefaced have recently launched their new Big Baby and Big Twin cabs, the most accurate and extended range bass cabs ever made. An archive of previous articles plus a glossary of terms can be found at **www.barefacedbass.com**

But This Goes to 11...

Welcome to the world of bass rigs.

Ears Distort Too!
A couple of months ago we looked at how the frequency response of our ears changes with increasing SPL, but one thing we didn't cover was how our ears start to suffer from distortion when you push them too hard, just as microphones or loudspeakers do (all three rely on moving membranes to convert sound into data or vice versa). So far there hasn't been much conclusive research on this (exactly how do you tell if someone's ears are distorting?), but if you've ever been in one of those loud environments where everything starts to sound rather harsh yet muddy and muffled, that's your ears getting overloaded. Once things reach this point, not only are you hearing with much less clarity but your brain is having to work harder to process the sound (a bit like when a CD player is dealing with a dirty CD, it's repeatedly sampling the data and processing it to try to play the music without glitching), and thus you suffer mental fatigue as well as hearing damage. For a long time I've been an advocate of musicians' earplugs – they really are one of the best investments a musician can make. Unlike normal earplugs, which merely stop you going deaf, proper musicians' earplugs have near flat frequency attenuation, which means the music still sounds great. And even better than that, if you're usually playing in properly loud environments, then the music will sound better (and your bass tone in particular will be more defined) due to the lower distortion from your ears. Yes, they're expensive, but if you're in a loud band you'll struggle to find any other piece of gear that can improve the clarity you hear onstage to such a degree, regardless of what you spend.

The Risks Of EQ
Last month we started investigating how the component frequencies of the notes we play often collide with the frequencies produced by other instruments in the band. One of the perils of starting to talk about frequencies is that it's easy to make the mistake that tone is all about how you tweak your EQ, and that couldn't be further from the truth. In fact, if you venture onto those Internet forums you'll doubtless be able to spot a beginner asking 'how can I EQ my amp to sound like xxx?' Sorry, you can't.

Keep It Simple
So here's how I'd recommend approaching EQ – and note it is there to be used! Being able to run your amp 'flat' neither makes you a better bassist nor makes your rig a better choice than one which takes some tweaking. If things don't sound fat or deep enough and plucking closer to the neck doesn't do the job, then turn up the bass knob. If they sound too boomy and plucking closer to the bridge doesn't sort it, then turn down the bass knob. If it doesn't sound bright or clear enough then boost the treble; if it's too sharp or harsh then cut the treble. Mid-range tweakery is a lot more complicated – rather than twisting knobs on the amp (or with active EQ on the instrument) I'd focus on getting the fingers and pickups doing this. Plucking near the neck shifts the balance to the low mids, nearer the bridge shifts the balance to the high mids. Likewise, panning to the bridge or neck pickups does the same. However, note that having both pickups full up (or panned equally, depending on whether you're a vol/vol or vol/pan person) doesn't give you a halfway-house tone, it actually cuts the mid range. You get some of the top from the bridge pickup and some of the bottom from the neck pickup, but completely different (and more subdued) mids.

Deeper Tweakery
Many amps have some cool-sounding knob (aural enhancer, contour, VPF etc) that is actually a simultaneous mid-range cut and bass and treble boost. This has two main purposes – firstly, for making your tone nicer at bedroom levels (as it works very much like a loudness contour, counteracting the Fletcher-Munson curve of our ears), and secondly, for completely losing you in the mix if you're at your first gig and forget what notes to play … It can actually be useful at gigs but it needs to be used very judiciously – and it can be rather effective if tweaked so it interacts with the other EQ. For instance, if you want to boost the lower lows so things get

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deeper but not boomy, sometimes cutting the bass EQ while also turning the contour knob up will hit that spot (you may then need to cut the treble a bit, but handily there's a knob for that). Be warned that doing superficially contrary things with your EQ may result in dismissive glances from armchair experts, but you know the truth. Multiple mid-range knobs also open up a world of possibilities, as do sweepable mids. However, leave all this complicated experimental tweaking for the rehearsal room when the rest of the band is running late. You can do some experimentation at home but you'll need to turn things up pretty loud, and small rooms do annoying things with bass due to the standing waves that occur. When you find some cool settings that do things which will be useful on the gig, remember them and then you can pull them out of your aural toolbag if you hit some acoustic nightmare scenario.

Attack, Attack!

Now we're getting into the cool stuff. Forget the knob twisting, this is about your hands. The harder the item that strikes the string, the more percussive treble attack you get and the greater the treble harmonic content in the actual note. The larger the item that strikes the string, the more that treble is damped. In my case my index finger tip is narrower and harder than my middle finger tip – so I have two choices instantly available without changing from the standard two-finger right-hand technique (and unless you're playing seriously fast, a single digit should be able to handle straight 8ths). We also have the thumb, the original bass guitar digit (look where the finger rest is on the first Precisions – and check out Monk Montgomery who was the first notable bass guitarist, thanks to Lionel Hampton digging the instrument's loud punchy fatness compared to upright bass). It may feel weird if you've never used it but the thumb is awesome – because it's larger and softer than your fingertips it gives a more mellow attack to the note. This means that you can have a sound that is simultaneously soft yet clear, as the harsh edges of the attack are damped but the full harmonic range of the note can swell and ring out. With practice you can do tons of things with the thumb, plucking up and down, combining it with the fingers and so on. It also positions your hand very handily for palm-muting …

Power Is Nothing Without Control

One thing that EQ can never do is control the tone of your note as it progresses through the envelope (attack, decay, sustain, release) – however, at no extra cost your hands can! Muting can require quite a bit of dexterity but the rewards are worth the effort. The simplest approach is traditional palm-muting, which can be paired with a pick (which should not be seen as a Lilliputian cause for division but as another tool in our tonal armoury) or with the new-found old-school thumb. You can also mute with your unused fretting-hand fingers (check out Rocco Prestia) when playing conventional fingerstyle, or you can take a hybrid approach of using both left hand and right palm along with thumb and finger plucking à la Gary Willis. Muting allows you to control both the treble content and the decay of the note – one of the joys of getting good at this is that you can add mid-range growl without adding treble brightness. Experiment!

Do We Have A Name For A 'Curve Ball'?

Maybe it's a googly? Anyway, another thing that many bassists overlook is that although most of the time we only play single notes, there is nothing to stop us playing more than one to change the tone and character of the bassline. Just adding a simple octave in a certain part of a song can make a huge difference (hopefully in a good way!) to the vibe, or picking another harmonically appropriate note as a double stop. The almighty rock power chord (root, fifth, octave) can sound particularly huge when strummed (big ol' downsweep with the face of your fingernails) on a bass. Practise it all over the neck and then hit it for the final rock ending of the night and show the guitarist how much bigger and badder your thick-stringed guitar is!