viewpoint

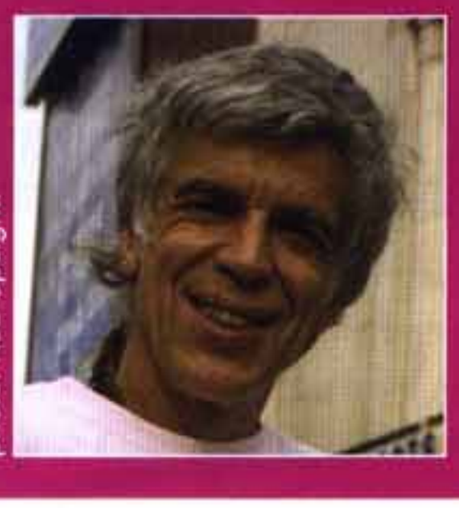

photo: Rob Speight.

"Good sound is pure, just like good food, which implies a lack of additives and minimal processing . . . why do we tolerate such impurities in audio?"

An Extremist's Perspective . . .

Tony Andrews of Funktion One gives his Viewpoint

Electrically amplified sound has been with humanity for roughly 75 years but it is only since the 1960s that the rise of popular music has driven the quest for better and bigger, full-range sound systems. The majority of this early work was carried out by enthusiasts who loved music and who had been touched by an "audio moment". This work is far from finished, particularly with regard to loudspeakers.

We have nowhere near achieved the potential inherent in good audio. In fact, in some respects we have been going backwards. If this was not the case, why, I ask myself, has the sound for the last three years at the largest open-air festival in Europe not been as good as it was 20 years ago? There are three main culprits: line arrays, badly implemented digital audio, and the human condition.

Firstly, despite the fact that they are 'fashionable', line arrays are not 'new' technology and they do not contain new technology. They are merely a rearrangement of the same old components your audio grandfather was familiar with, namely moving coil cone loudspeakers and compression drivers. The only advance has been in thermal durability.

The majority of line arrays are a combination of dynamically mismatched horn-loaded compression drivers and direct-radiating cone loudspeakers which achieve a modicum of improved efficiency and directivity by mutual coupling. However, this renders them susceptible to the slightest air movement which means outside, on a windy day, they are very compromised.

Furthermore, they are inefficient (bad converters of electrical energy into acoustic energy) and require a great deal of amplification. If multiple sources are so good, then why do we only have one point source mouth? I'm going with nature! The transient smearing of multiple arrivals is bad enough, but the addition of variously slotted flat boards in front of mid-band cone loudspeakers to provide a surface for the ubiquitous compression drivers to work against is an insult to good audio.

You need multiple cabinets before line arrays even work at all. You have to find the right shape room to fit the dispersion and they all need corrective EQ, which does wonders for the phase linearity - *not*! This, when added to the previously mentioned multiple arrivals, means that the sound quality is only ever mediocre at best. It's like having one's vision in soft focus, lacking crisp definition. Despite this softness, the compression drivers never fail to have the sonic demeanour of a hacksaw blade. Good sound is pure, just like good food, which implies a lack of additives and minimal processing. Most informed people prefer fresh food over processed food, so why do we tolerate such impurities in audio? Mushy, distorted sound poses no challenge to good engineers growing their appreciation and manipulation of the 3D sound stage and hides the ineptitude of so many. This is further facilitated by the plethora of software programmes which enable engineers to think they are getting it right just because their lap-top tells them so. Far too many engineers are now mixing with their eyes.

The industry's fixation with the line array paradigm has meant that all sorts of unworthy electronic and digital equipment, particularly FOH desks, have made it into mainstream because, as I said earlier, the picture is so mushy that the industry can't tell 'fish from fowl'. On a high resolution point source system the "wrongness" of the more ubiquitous digital FOH desk offerings is obvious but if you can't hear it because you've only ever mixed on low resolution line arrays, then it's going to slip right past you - and sadly, it has! In my opinion, the industry has lost its way and become complacent. The pursuit of breathtaking audio has become a dying attitude.

I understand the convenience of recall and the small footprint of digital desks, but at the price of insipid bass, gutless mid-range and gritty high frequencies, it makes no sense to me. These subjective impressions are permeated with the nagging feeling that all is far from well in the land of phase and time, otherwise why, with the advent of digital equipment, did valve-based equipment make such a comeback? It was obviously to smooth digital harshness and warm up the sound. Although valves are somewhat inaccurate, they have a sonically friendly, smoothing effect which was used to mitigate the unnatural sound of digital equipment.

I do not have a problem with digital as a method but rather with the implementation of digital. 96kHz and 24bit does not magically mean it's going to be great; what about the algorithms, converters, latency, etc? Were the designers sensitive to the audio effects of design choices along the product development route?

How did we allow ourselves to get to this sorry state of affairs, where engineers think that the art of sound engineering has reached a zenith, whereas in fact, it does not sound as good as it did in the days of the early point source systems and analogue desks? Our sonic memories are short, particularly with sound (about three seconds). However, one does remember the emotional effect. The sound one works with is what one's brain becomes accustomed to. Over a period of time our brains will apply the necessary EQ and adjustments to give an approximation of a perceived flat response which becomes habitual. After a while, even if a sound is superior, it will sound wrong because it is different.

When listening to a new sound, this habitual compensation gets in the way of what is really there and takes some time to unlearn. It is also mentally fatiguing due to the amount of mental processing being used and prevents the brain from getting to grips with the exciting sonic issues. Added to this, our fascination with computer programmes which have flashy interfaces and save us having to think or use our art. To sum up, we have a natural tendency to be lazy, mentally as well as bodily, putting convenience above quality - so one tends to like what one gets used to, whether it be good, bad or ugly.

I welcome all future discussions!

One more thing, in light of what I've said above, I feel I should explain one of the cornerstones of my thinking: I remember as a teenager, with an interest in hi-fi, being profoundly struck by the concept that the really serious hi-fi people used amplifiers with no tone controls! How could you make it sound nice without a "loudness button" and a treble and bass control? Well, the serious people got every component of the audio chain as naturally right in itself as possible i.e. flat, maximum frequency response loudspeakers, the correct wire, class A amplifiers, minimalist phono cartridge pre-amp, exotic vinyl player and astronomically expensive cartridge and stylus. They arrived at their result without any electronic correction.

Now contrast that with today's world, with signal not only routing through all manner of equalisation, gates, and compressors etc, but also through A to Ds and D to As of dubious performance. The overall effect is to smear the timing and destroy phase linearity so it's mashed up before it ever gets to the speakers, which wouldn't notice anyway.

So, may I propose that one of the major precepts on the road to good sound is to use as few devices and stages as possible, with the minimum of correction in all areas of the audio chain. The effect on signal audio quality of employed devices should be as close to the effect of a piece of wire (next to nothing) as possible.