

Arthur Khoubesserian of The Funk Firm

Hi-Fi+: What drew you to the field of analogue audio in the first place and what do you regard as your specialties within that field?

AK: It turns out that at school, my maths master was an esteemed reviewer, recording engineer, and owner of Meridan Records: John Shuttleworth.

I was fortunate enough to go to live recording sessions where I learned both what good recorded sound was and more importantly what poor recordings were. He was fastidious to a fault and I was flummoxed to learn that despite owning Meridan Records, he was utterly scathing over what he described as “Groove Grinders”.

Comparing his records to his master tapes on what was, of its day, a fine piece of analogue reproducing machinery, one could understand why! They sounded so different. So, it was obvious. Records were crap! Or, were they?

I had experienced first hand the meticulous effort that went into record cutting and that was impressive. This therefore seemed an unlikely route for so great a divergence of sound. That then left the replay apparatus as the prime culprit, never mind that the mechanism of the failure was eluding me. Indeed, at the time, I gave it scant attention.

When I left school in the seventies, new, all-powerful (digital) record-playing “King” was on the throne. Not only was it taking no prisoners, in fact there were more than a few casualties.

“Aha,” I thought. “This is it.” Swept along with the tide of mass hysteria, I was confident in the knowledge that owning this piece of supreme engineering and illogical but obviously brilliant design would close the performance gap I had experienced, leaving me content and free to follow my chosen and quite alternate career. I had no choice. I had to have one.

Dutifully, I saved up and bought said hallowed artifact.

Only...imagine my utter, utter horror and dismay when it failed even more spectacularly than John’s setup to deliver! I felt I had been well and truly duped and by the ‘Experts’. Something needed doing.

So it was, in total innocence and naïveté and with nothing but my unyielding reliance on physics, maths (and my wits), that I joined the industry.

Thus, my exciting and it has to be said quite eventful journey of literally “Following the Groove” began.



Many in our industry say that analogue audio presently is enjoying a renaissance. Would you agree with this viewpoint and, if so, what do you think is driving that renaissance?

From 1979 – 1998 I was co-owner of Pink Triangle and amongst various developments I pioneered, I had released the acrylic platter and, I have to say, to much incredulity.

In 1998, utterly exhausted and burned out, I took a seven-year sabbatical. I isolated myself entirely from the industry.

The dark days: During this period, digital had landed. CD sales went through the roof. People literally ditched all their vinyl. Record sales crashed... well, except for those odd DJ guys. They were the stalwarts and guardians of vinyl and they kept it going.

I returned in 2005 to start Funk. I expected to find an industry where companies had developed even bigger ideas to the point that the likes of me would not stand a chance. Somewhat dumbfounded, about the only thing that was apparent was the almost universal adoption of the acrylic platter! Although one could probably say I felt vindicated, cold comfort was nearer the mark.

The other thing that started to happen was that turntable sales had started a new rise in acceptance and the answer was pretty obvious. Digital, for all of its fabulous technology had, sonically speaking, not evolved. The sound was still essentially the same digital sound they first heard. People



Above: The Funk Firm isn't content with making turntables. It also provides upgrades for a range of turntables. One of the simplest – yet most effective – is the Achromat vinyl replacement for the conventional felt slipmat.

had had their time with it and show after show that I attended I was presented with the same answer: “I take my iPod to work (remember them?) but when I get home, it is not what I want to listen to.”

This limitation I likened to the digital artefacts we get with fast moving images

on TV. Processing was getting in the way. Now don't get me wrong. Analogue is no saint in this regard. Ticks and pops, end of side distortion and more, analogue has it all, only it doesn't get in the way of the music as much as digital.

After all the years of improving and refining digital it was still regarded as somewhat sterile. By contrast, analogue retained an immediacy that we react to emotionally. It is the only way I could and can explain this phenomenon. People still love that and haven't been willing to lose it.

So, contrary to all expectations this bizarre format has clung on because fifty years on, it really does still offer something new.

How have engineering practices changed since you built your first turntable? Have the changes influenced subsequent designs?

Computers have been unleashed. The challenge is the increasing cost of good engineering.

In years gone by, one could ask one of any number of engineers for a few of this or that and get things done.

Today, computers and accountants dominate... and they want volume. The prevalence of computer controlled machines dictates quotas where the vast majority of companies will not even look at a job sheet that does not ask for hundreds of every single component.

Any idiot can produce a record deck satisfying all our sonic demands at tens of thousands of pounds.

Trying to get the absolute sonic best for a customer with a budget of eight hundred, or even fifteen hundred pounds to spend? Now we have the challenge.

Graciously it is said that I have a talent for turntable design and one day I will produce my 'ultimate statement' on record reproduction, but given the above restrictions, currently I've decided to focus on giving my customers the best possible sound within sensible budgets.

Today's world really has been a game changer.

What are the distinctive 'hallmarks' or signature elements of your analogue designs? What distinguishes your products from those of your competitors?

Throwing caution to the wind, defying convention, and following the free spirit.

Who in their right mind calls a product 'Little Pink Thing', LSD ('Little Super Deck')... or indeed calls a company "Pink Triangle"?!

Yet that very freedom of thought from the constraints and conventions and taboos is found throughout all my designs.

Take the original acrylic platter. Decried at the time, now everyone is using it.

(And with everyone copying it, it was time for the mouse-trap to get better: Achromat.)

Or consider DC motors. From day one I championed their use. At the time the whole industry tried to shout me down with sillinesses such as "they never run at the right speed".

I think it speaks volumes that my most vocal critics on the issue – a certain Scottish turntable manufacturer – now employ a DC motor themselves!

So, how good is a DC motor? Let's ask the Germans, you know, "Vorsprung durc.." and all that. Against all comers they have bestowed on LSD (a very modestly priced product) nothing less than "Ultimate Reference status for technical excellence" (let alone its sonic attributes).

Who was right in the first place?

Or, how about solving a problem that no one even knew was there? I am speaking of the question of bearing stability, where the bearing is pulled to one side by the belt (and thereby giving the slower turning motor of a direct drive an advantage?). By incorporating three pulleys, the forces are vectored and



now the belt drive has the advantage by virtue of a higher turning motor.

Or, let's turn to tonearm behaviour. Arm tubes ring like a bell. This is a fact. Just look at measurements, which have been telling this to us for decades and you can hear the problem, too. But because no one had an answer on how to deal with it, we accepted it.

This one simple example of the challenge of analogue is indeed quite formidable; thought experiments are one way to overcome it. I kept looking at the problem over and over again. There had to be a solution...and there was. As with the development of the acrylic platter, the solution came by freeing

Above: The core of The Funk Firm's line-up of high performance audio products – the Little Super Deck. A complete, just add cartridge, package, the LSD even comes with a lid. What a trip!

one's mind of conventional constraints and opening it up to a whole new way of seeing the problem and thereby formulating the solution.

The results were the genesis of the cross-braced tube technology now found in FX3. It added little mass yet was an order of magnitude stiffer than a conventional tube. Here's how it goes: A tube has great torsional (twisting) stiffness, but is wobbly along its length (think fishing rod)...and cartridges?

They produce longitudinal forces, which is how the tube is made to flex – recall the measurements.

Aha! Is the light being switched on?

By contrast, an I-beam (think RSJ) is longitudinally stiff. F.X technology combines the strengths of these two structures in a new and unique way and so solves the problems. Ever-lower levels of information become discernable, when previously they had not been.

The proof? We just compared two arms, one with and one without. Simple really.

By eliminating the obscuring colourations that held back previous deck, arm, and cartridge designs, we are getting ever closer to resolving all that microscopic detail.

In this way, going back to my days with John Shuttleworth, when the master tape as reference was king, this was how true progress was made. Slowly and sometimes painfully my efforts to attain my holy grail are beginning to bear fruit.

Unlike digital, which objectively has a defined limit to its resolving power, with analogue the limit really is at the atomic level of vinyl.

Some prefer to treat turntables and tonearms as integrated systems whose elements should be developed in concert with one another. Others prefer to take more of a ‘mix-and-match’ approach. What is your recommendation and why?

To save irrelevant repetition, I’m going to tie-up two questions in one in answering this and include Hi-Fi+’s next question, which is:

Which elements in the analogue audio signal path—turntables, tonearms, phono cartridges, or phono stages—have the most overall impact on sound quality?

Where to start?

The motor is that which drives the deck. That’s important.

The stability of the bearing is also crucial, which is why we need to apply a Vectoring drive to control that motion.

The huge 30dB spikes that a normal tonearm exhibits are also critical, which is why we need an ultra-rigid arm and with free bearings.

Then we get to the cartridge. If the magnetic circuit is not correctly structured, then we will have distortions just where the stylus begins its journey; so the cartridge is also critical.

But the cartridge’s signal is miniscule and needs to be amplified by special circuitry, which brings us to the phono stage. The best stages I have experienced (and we developed

at Pink Triangle) are transconductance stages, where the signal voltage is converted to a current and then amplified. They are complex and a pain to service but they make a noticeable improvement in maintaining transparency.

“So, once we’ve sorted out the motor, the support, the bearing, the arm beam, the bearings, the cartridge magnetic circuit, and fixed the stylus pivot, and amplified the signal as purely as possible, now can we finally listen to the music?”

Well, yes... only, another thought: Is your deck suspended or rigid? You see, if it’s rigid, then it is constantly feeding back all the junk from the outside world all the time. This truly affects the final result in ways your brain is only too happy to tell you about! That’s why suspended decks will out perform a rigid deck, everyday of the week. You need to isolate your deck.

“Got you, now. Your decks are rigid, aren’t they?”

That decision was market driven. Long story to do with something that someone at a show said. Yes. It was just one person! I won’t bore you with it here. All you need to know is that we have returned and released Bo!ng. Easily fitted, it is a universal isolation system.

Once again it is so easy to do a ‘before and after’ comparison for yourself to prove how significant and damaging an effect low-level feedback is.

So: Turntable? Arm? Cartridge? Phono stage? No one element outshines the other. They are all incremental, inter-dependent, and important.

We strive to find the best solution in each case.

Being as candid as possible, how would you compare the relative merits of digital and analogue source components? What things do you think good analogue sources do singularly well?

With digital, the signal is (simple) code and cannot be altered, meaning the results are pretty much fixed. 99.99% of the time, the technology translating the code is “off-the-shelf”.

(Pink Triangle developed a D-A converter that was not off the shelf and to this day people still say to me it has an ‘analogue’ quality that they have yet to better. That is quite some compliment and is testament to the free creative spirit that is this industry at its best.)

Similarly and at the same time in total opposition, analogue, for all its faults, has a seamless quality that is beguiling. I say that not because I make analogue equipment but because that is what I hear.

Ultimately and despite my physics training I have to describe analogue in emotive terms because that is its quality. It is not digital and thank goodness for that. What would be the point of producing something that is identical

to what you already have? Like fine wines or cars, for us human beings it is the differences that we appreciate.

Analogue is a total challenge. It is the artist who, despite delivering photo-realistic renditions of a subject, can add in a soupçon of extra pleasure that a mere photograph will never attain.

By definition digital is very precise. Of itself it can be nothing else and I find it interesting that some of the better digital sources turn to fuzziness or various analogue techniques to improve the final subjective appeal.

The human ear and brain is so fallible, yet at the same time, it knows what it likes!

Which three of your favourite analogue demo discs might you recommend to our readers? (It's hard to choose just three, we know, but please do your best.)

John Shuttleworth's recordings are obviously excellent and I'll choose Anthony Hedges' Scenes from the Humber.

If that's too esoteric, how about Ricky Lee Jones' self-titled (eponymous) album? It's a magnificent recording; I turn to that often.

Or, try Brian Eno's Apollo.

There are so many it's hard to pin down just three. But there you are, for what it's worth.

What set-up or installation tips would you give the newcomer... and what guidance would you give to the expert?

Goodness me I've heard some awful systems from 'experts'. I bought one! In this industry, you can never tell an expert anything... that's why they are the 'Expert'. Snake oil is wonderful stuff! I wish I knew where to buy it.

I believe everything should be validated and easily. Use your ears and don't be bogged down by the dogma from others.

Every rule can be broken and there is nothing wrong with that; if, when you close your eyes and listen and hear an improvement, then there is an improvement. Otherwise, there isn't!

Don't worry about every single dit and dot. It really is not important. Close your eyes. Enjoy the performance. That's what you bought your system for.

In five years' time, how do you anticipate that the world of analogue audio will have changed?

I will have retired!

Change means the unknown and so a crystal ball is needed. Why do we die to be replaced by our progeny? Our ability both to take on new ideas and to generate new ones falls away with age. Change is about leaping into the unknown and old people tend to be quite, quite inflexible.

Analogue audio, audio in general, and ultimately progress itself will only occur if there is new blood to help drive our quest, in this instance for musical nirvana, and sadly I see very few original thinkers and that is what we need and hence the need for progeny.

As for my part? I may be ageing, but I have yet more crazy ideas for people to shriek at – and they will. For me that is what I have grown to love the most. +

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