

Black Gate Capacitors

The Best, Yet Rarely Used!

**Or, how Audio got into the sad state it's in,
and how we're slowly climbing toward the light again.**

Mr. Martin Colloms, of Hifi News fame, wrote a review in the July 2002 issue in high praise of Black Gate™ capacitors. (See piece in the Kit & Component Intro page for more of this.) Martin essentially says that without Black Gate™ capacitors in an audio product, it can hardly be deemed top quality, or as he puts it, and I quote directly, “ Even the lowest-cost types are rewarding, while the top components in my view change the rules for high quality audio equipment design.”

I have known this for over 15 years and as a result we have used Black Gate™ capacitors increasingly since the Audio Innovations days in the late 1980's, and have spent the past 10 years developing circuits, designs and other complementary components which aim to take the maximum benefit from the Black Gate™ capacitor. This work is ongoing and will probably never end, because as soon as you have covered new territory, you realize that there is more beyond that, which is partly what makes this pursuit so interesting and rewarding.

Why are most audio manufacturers not taking the benefit of the “Black Gate™ Advantage” ?

To better understand this we need to look at two aspects of what makes the audio industry “tick”. Martin Colloms alluded to this in his earlier review in the June issue 2002 of the Level Five Audio Note™ system, when he wrote on page 26, “These ineffable old tubes, (note: Martin is referring here to the 1930's single plate 2A3), cost hundreds of pounds and are very rare. Yet in this context they are not for keeping, they are for using, like vintage wine. Such sound qualities are far removed from the usual, where aspects such as slam, macro dynamics, dynamic range and neutrality help describe and differentiate between mainstream hi-fi units and generally stand us in good stead.”

How have these terms helped the audio industry?

It seems that most companies inherently feel the need to build more complicated circuits and make them “bigger” in order to increase price and “improve” performance. This “logic” is what has driven most audio companies since the 1960's and conforming to this is essential in order to be accepted as a “real player” in the market. The market perception of “quality” can therefore be summarized as follows; quality means ever larger, (to get more power or facilities or just pander to male insecurities, perhaps?), and more complicated circuitry in bigger and better-finished boxes, using the same inexpensive components as in less expensive products, just making them bigger and more presentable.

Give the customer what he wants!

A splendid old marketing chestnut. What this really means is that smart manufacturers should appeal to and trigger our most primitive, unsophisticated and deeply seated immediate responses, instead of selling on the basis of what experience and intellect have shown is better. This leads down a road of pseudo-improvements rather than real development, creating the illusion that we are on a constant road of upwards development. Within this value system and tradition, expensive components like Black Gate™ do not count, as they do not have external status or glamour.

Audio Survivor

The main reason this value system has survived for so long is that the alternative, truly audio-oriented quality components, developed for sound rather than just simple technical parameters, did not really

exist in the 1960's and 1970's when the central trends and tenets in audio developed. The other reason is that there is an economic advantage to this way of doing things! By having cheap components, (even if there are a lot of them), in big fancy boxes, the differential between cost of parts and the retail price is vast, leaving much greater profits to be spent on advertising, promotion, etc. More money for a bigger drum is always an attractive incentive.

All of the above comes at the expense of better sound and developments in that direction.

I spent 10 years studying these phenomena, first from outside the industry and then from 1978 from inside the industry, Initially I was in awe of the great brands of the 1970's, however, the more I studied and learned about the history of audio, heard current equipment in direct comparison to 10 or 20 or 30 year old equipment, and especially after I started collecting records seriously in the early 1980's, I realized that the value system and its resultant products, whether hardware or software, are completely misguided and wrong! It demonstrably does not lead to improvement in musical enjoyment. (Coincidentally, it also does not help us pass on our musical heritage to the next generation in a way that makes them appreciate how wonderfully marvelous, spectacular and beautiful it all is; how we should be grateful for its very existence and feel humble in its presence.)

Everything you learned in Audiophile School is Wrong. Now What?

What then should be put in place of the current system of technology and evaluation? It took me, with the help of many friends and collaborators, (special thanks here goes to Leonard Norwitz, whose musical knowledge and intellectual clarity are immense), the Comparison by Contrast method was born, refined and formulated. (See article, "The Road to Audio Hell" elsewhere on the web site.)

With this "tool" in hand, I went searching for equipment that sounded better when selected by the method. To my initial surprise, I found shockingly little: the Snell loudspeakers (only the early types like the A/II, A/III, E/II, J/II and the Type K), the Spatial Coherence pre-amplifier, the Rappaport Amp-1 to name a few. To my astonishment, the most successful products at coping with "Comparison by Contrast" were more than 15 years old (in 1980, that is!) and the further back I went the better some of the products, especially the amplifiers, turned out to be.

This led me to a serious study of the earliest audio technologies and the history of recorded music and its reproduction in general. Not being an engineer, I was unable to replicate any of the circuits I found and most of the 1930's amplifiers I acquired could not be made to work, so I had to wait many years to test my evaluation theory on these circuits. During the 1980's I applied many of the ideas that I had picked up from these studies in the products under the Audio Innovations brand, and when I sold the brand to concentrate on the work with Mr. Kondo on developing Audio Note™.

Parts is Parts. NOT!

Having experienced single-ended and transformer-coupled amplification as early as in 1986, the shock of hearing the first all silver-wired audio chain in 1992 was profound and led me to realize that components and materials choices in audio are not only far more important for the sonic end result, but also a far more exacting science than perhaps anyone had ever believed. (That has not changed much yet, but it will!) With this knowledge in mind, I was determined to find out how far the envelope would stretch.

I had learned in the early 1980's that the parts used directly in the signal path have a great influence on the overall voice of the piece of equipment in question. I am still learning how to squeeze the best voice out of the best components and circuits and the Black Gate™ experience has been, and still is, a great learning platform from where one can continuously find little incremental improvements. I had already discovered paper-in-oil capacitors in 1978, about the same time I got hold of the first Shinkoh tantalum resistors and silver cables. Thus began a major revision of materials, components and methodologies, together with a serious R&D program in 1992 when the collaboration with Kondo-san began in earnest.

The Audio Note™ Level System is Born. The 1992 “silver” system experience made me think a great deal about how the quality of pure, well-applied materials affected the overall result and how the increases in costs were largely offset by the correspondent improvement in sound quality, so when I sat down and formulated the early Audio Note™ UK product range, I decided to base it on three inter-supporting ideas:

- 1) The development of an end-to-end, top-to-bottom, full-range product range targeted strictly at two channel music reproduction
- 2) Using a system of “platforms” to allow me to build the entire product range, around a few basic, but good quality designs and circuits
- 3) Engineering these platforms in such a way that it would allow us to use basic components in the cheaper products, but to offer better and better versions, with a higher level of sound quality at more money

This philosophy of utilizing the same essential circuits or designs and increasing sonic performance through well thought out component upgrades is unique in audio, but is gaining in recognition slowly but surely, it is time consuming and expensive to apply as it places huge demands not only on your knowledge and understanding of the technologies and materials involved, but also on inventory, inventory management and finance, and as a result is unlikely to become the industry standard, as it is neither convenient nor mega-profitable. What it does provide, is an increasingly stable platform from which to build upon and apply one’s knowledge and experience.

The gradual recognition, (amongst the more informed DIY’er and more broadminded audio engineers - an enlightened group Mr. Colloms has now joined), of the utter superiority of the Black Gate™ capacitors, is improving the understanding and appreciation of the effectiveness of this methodology and for that I am both gratified and grateful.

A Method to the Madness

The next question was, "How do we present this very in-depth full-range product range in such a way that it is comparatively easy for the customer and the dealer to find his/her way around it at all the different price and performance points?" The solution was to break the range down into several levels, each defined by its performance and associated with the componentry and material choices which make the performance possible.

This is precisely the reasoning behind the Audio Note™ Level System, to create a “grid” providing an overview of the Audio Note™ product line with a clear association between price and quality. With this tool, the customer can immediately identify the level of sonic improvement relative to price AND more importantly, clearly verify this improvement relative to cost when listening to and comparing the products from each level. In addition, each level is tied to a set of technological parameters, interesting for those who have the interest, and hardly damaging the minds and ears of those who do not!

As with most of what we do, this level of effort to inform and educate our existing and prospective customers is truly unique and will probably remain so.