Credits

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Opening Salvo

As Winter turns to Spring here in Colorado...and back to Winter...and back to Spring again, a no-longer-young man’s fancy turns to thoughts of another issue of Copper.

>cough<

Our lucky 6th issue has some truly unusual content. Our regular columnists: Seth Godin writes about how the prospect of MQA has him all atwitter; Richard Murison explores the etymology of “dither”; Dan Schwartz examines the anti-existential angst of what you DON’T have to be; Lawrence Schenbeck goes back to Bach; Duncan Taylor writes about another fab four; and WL Woodward --sets the wayback machine for 1969. My two columns continue the Acoustic Research story and predict, in graphic detail, the future of the audio biz...NOT.

In this issue’s features, we learn about the early days of Prince in an interview with his first producer, Chris Moon; in a new installment of Over There, Ken Kessler writes about his adoptive homeland, the UK; and we welcome vintage audio specialist Haden Boardman, whose first piece for Copper is on the resurgence of analogue (as he and Ken AND Chris put it--we’re surrounded by Brits and near-Brits!). This issue’s In My Room by Amir Daana of Panama features an outrageous Infinity IRS-based system that will inflame the hearts of vintage enthusiasts everywhere.

We always want to hear from you, whether it’s in response to one of our articles, or writing about your home music system. Until next issue: enjoy! Good reading!
Dirty Secrets

Bill Leebens, Edgar Villchur had a dirty little secret. And that secret is.....he didn’t really understand how his own invention, the acoustic suspension woofer actually worked. And neither did I until about 25 years after I had the intellectual tools necessary. That’s right, and it is really quite simple.....if you are a physicist or have studied physics seriously. The acoustic suspension woofer like its competitors using different designs can be accurately described by applying Newton’s Second Law of Motion as it is used in explaining forced oscillation. Three variables play a role in how they all work. Mass of the moving object, the cone, the bobbin, and the voice coil, spring constant which in this case is mostly but not entirely air, and the velocity related frictional loss, viscosity. This is why the stuffing is so important, the damping factor depends on the loss of energy needed to push and pull air between the stuffing fibers. He got it right that that air as a spring is linear because of the ideal gas laws, P1*V1=P2*V2 and Force = pressure times area. The stuffing in effect creates an aerodynamic drag on the speaker and the right amount and quality will create any desired system Q. You can also tune the system for any arbitrary F3 by adjusting the parameters The approximate solution for Newton’s equation to solve this problem is given in every college physics text related to mechanics.

Villchur believed there was a thermodynamic explanation to his invention. Those laws apply but no cigar, that is a poor tool for understanding it. When you see it applying Newton’s Law it is easy to see why this is the best possible design and why all other designs have serious shortcomings. There are more advantages to this design as well. The restoring force is applied uniformly over the entire surface of the cone. Unlike mechanical suspensions there is to circumferential tendency for the cone to twist due to differing forces at different angles and no tendency to shear due to different forces between the inner and outer suspensions. I’m surprised you didn’t mention the NY Audio Society’s experiment at Riverside Church with four AR1s and Western Electric 150 watt amplifiers were used in a live versus recorded demonstration against an Aeolian Skinner pipe organ. When the AR1 woofer was combined with another AR invention, the dome midrange and dome tweeter to create AR3, it became the world standard for accuracy. Its bass response was so accurate that it was used by medical schools to teach students what heartbeats sound like. An AR3 is on exhibit at the Smithsonian Institute as an example of excellence in American engineering and manufacturing. Even today, it’s a hard target to beat for what are mostly flawed and mediocre designs. Measurements by Ken Kantor for his AR303 variant, 1% THD at 30 hz, and no servo feedback. AR’s ultimate design in this respect was Teledyne AR9. Kantor was
instrumental in helping Fostex develop the 1259 acoustic suspension woofer used in the NHT 3.3. It is a variant of the AR 12” woofer but owing to its plastic cone is only suitable as a sub woofer. Madisound marketed its own variant of the 1259 for awhile.

Soundmind

**More AR**

Just read the article by Bill Leebens on the AR1 speaker. I don’t have a the AR1’s but I have a working pair of AR5’s. I partially rehabbed them and they worked fine until my son got hold of them and told me something was wrong with them but he hooked them up to a worn out old HK receiver. I took them back and put them in the basement without checking them out again. They may be fine but I want to refurb the crossovers and repair what ever might have happened to them when my son had them but I just haven’t gotten to it yet. I wonder if Mr Leebens has any advice for me in doing the refurb. I was just planning to replace the caps in the crossovers.

Thanks so much,

The Gregman

**Pono**

Although I agree somewhat regarding Pono (e.g., the whole campaign was filled with a lot of hype and bs; for example, ignoring the fact that many of us had been downloading and enjoying hi-res files long before Pono came along), the preponderance of the words in the article lambast not the product, but the campaign, and many may miss his statement that “I think the player itself is a remarkable, great-sounding product, and a freaking bargain.” Although the ergonomic choices in product design are debatable, it is far more difficult to misplace than, for example, a Meridian Explorer or USB-stick-type DAC. To each his own. The whole Beats thing reminds me of the level of bs and hype that have surrounded Bose products since the ‘60s. Twenty percent of the price to support the product design and build, and 80%
William Franklin

Seth Godin

I’d like to give some positive feedback on Seth Godin’s articles for Copper Magazine - they are getting better and better. His latest on ‘teetering on the edge’ rang true for me - life is better with risk of disaster, and promise of a miracle.

It brought to mind some people I know who live by the exact opposite ethos - eradicate all uncertainty and risk (and art?)

I know which camp I would rather be in.

Thanks Seth, and Copper, keep up the good work.

Regards

Ross Andrews

Ken Kessler

I noticed that Ken Kessler is not in issue 5. I really hope Copper Magazine did not fold to all the snivel-ing hyper-sensitive readers.

Please tell me Ken Kessler will be back.

Kind thanks,

RP

The Music is Dead

“How can something that is based in something as beautiful as the love of music, become so incredibly hateful and destructive?”

If you have an answer for that...let me know, will you?
Hoi Bill,

The music is ‘dead’, that’s why. Let me try to explain.

Some day in May, at the High End Messe in Frankfurt, many years ago, I was attending a demonstration, given by Ingo Hansen, the man behind Phonosophie.(in Germany).

There was a recording engineer, showing how music was recorded and further digitally processed.

A band was recorded and he let us hear the result. Fresh lively engaging music. Then, he said, they needed to process this raw recording, give the base a bit more volume, the sax a little less .. and so on... It was run through the ‘processor’.

Again, he let us hear the result... and there is was, that fresh lively music had lost it's soul and had died.

At that moment, I realized why, for me, music wasn’t the same anymore, after the introduction of the CD.

I don’t know the reasons for this. Maybe it has nothing to do with the CD as such, but you better ask someone like Soundmind or any other well informed person, what might be the cause.

Keep up the good work

Koen wouters

AGB

“The legendary/infamous/widely-feared, former TAS reviewer AGB, Andrew Benjamin” really made me laugh Mr. Leebens. The self proclaimed dragon slayer who said he would defeat all opponents when he first started posting on the PS site some years ago finally left tearing out of there like a terrified child fleeing screaming into the night. Reports were that he didn’t stop until he got to Eastern Europe, a place
he originated from. I warned him, I’m not some gullible audiophile who can be talked into anything by some slick know nothing reviewer. Quite the opposite, I know far more about this than he does. I also know that many millions of years ago before water carved it out through erosion the Grand Canyon was nothing more than a shallow ditch. It would hardly surprise me if someone were to scavenge its length with the greatest care they might just find some absurd antique concept mechanical wristwatch made by some famous maker like Patèk Phillipe or a Louis Moinet Meteoris lost or discarded and replaced with a far more accurate, reliable, and maintenance free $400 Casio Watch. Remarkable how on one hand a man can dismiss an antiquated mechanical unreliable, unstable, fragile inferior technology that has been far surpassed by more advanced cheaper technology in one area and then in the next breath cling to it, embrace it fiercely in another area. Who buys those stupid expensive useless pieces of collectable junk?

People who have so much money they can throw it around meaninglessly and those who aspire to show they want to be just that….or are snobs or junk collectors. Sorry Andy, my smart phone is even more accurate than the Casio. It is synchronized to a world standard by an ap that costs nothing. I don’t mind telling you either that even though my father’s side of the family was Hungarian, the crazy side, I do not like goulash.

That includes audio and timekeeping goulash.

Mark Fischer
MQA Just Ruined My Stereo

By Seth Godin

Not just broken, but broken into a thousand worthless pieces.

Sure, it still works, but reading these articles about MQA makes it sound worse. Far worse.

MQA, we’re promised, will remove digital artifacts, open up the soundstage and clear away the veils. It isn’t just a dramatic step forward for digital—it leaves analog in the dust.

Of course, the very existence of MQA means that the music I’m listening to right now is rife with digital artifacts, closed in and veiled. This music, the music that was so majestic and real just two days ago, has been muddied and rusted by a few articles in a high end magazine.

If you ever needed proof that this is all in our heads, there it is.

MQA sounds like a sort of artless April Fool joke. Not only is the music better, better in every single way, but it streams, quickly and easily, without regard for bandwidth.

I’m never going to need to buy another piece of music, in fact, I won’t be able to buy high fidelity music, because all the good stuff will only be streamed. All I can listen to for the cost of one vinyl record a month.

Here we are then, on the precipice of wonder, in the magical moment where hope has to be so much better than reality ever could be. So why does it feel so unsettling?

Isn’t this what we’ve been working for generations? Perfect sound, and not only that, but every record ever recorded! They drive a truck to your house…

The challenge that I’ve got, and that you may have as well, is that every change comes at a cost, even the change to perfection. Change means giving up the things we liked in order to have things we might love.

I’ve been buying music for forty years, and I’m not going to be able to have that pleasure again, not if I also want perfect music.
And the act of looking through the music I already own, being prompted by proximity and juxtaposition-that goes away once I’m streaming all the time. No need to spend any time at all imagining what a better cartridge might contribute, or whether or not that record, that physical totem, is clean enough, static released enough, flat enough…

But most of all, as far as I can tell, this is the end of the road.

It can’t get better after this.

The original master, from the vault, straight to me.

Sure, there will be revisions to the software, incremental improvements. But they won’t be giant leaps, and they’re likely to not be announced. They certainly won’t require a wholesale shift in our habits.

And you know what, now that I think about it?

I can’t wait.

**Seth Godin** is the author of 18 books that have been bestsellers around the world and have been translated into more than 35 languages. He writes about the post-industrial revolution, the way ideas spread, marketing, quitting, leadership and most of all, changing everything. You might be familiar with his books *Linchpin*, *Tribes*, *The Dip* and *Purple Cow*. 
Mr. Dithers

By Richard Murison

In my previous columns I have described how it has been shown mathematically that digital audio is able to store an audio waveform exactly, provided it can be sampled at a frequency no less than twice the highest frequency contained within the waveform, and represented by a collection of exact numbers. Those are the only two constraints that we are required to operate within, so it will be very instructive to understand how those constraints actually limit our ability to achieve the objectives that we strive to reach.

In this column I want to focus on the second of these constraints – the one that says the waveform samples have to be stored as exact numbers. In digital audio, we express this storage precision in terms of the Bit Depth, and this is usually a choice between 16-bits and 24-bits. I wrote in a previous column that every stored number therefore contains a rounding error at the level of the Least Significant Bit (LSB), for which the technical term is “Quantization Error” (QE). These quantization errors will serve to limit the precision with which the original waveform can be recreated. Therefore, when the signal is sampled, it makes sense to try to represent it with the most accurate number possible so that this QE is minimized.

Bizarrely, it turns out that minimizing the QE is not necessarily the best way to go. This method produces a QE signal that often correlates quite well with the original signal. In plain English, this means that the QE signal can look more like distortion than noise, and research has shown that the human ear is far less tolerant to distortion than it is to noise. However, done this way, the QE has a magnitude which is always less than one half of the magnitude of the least significant bit. So it will only correlate with the original signal (and therefore produce distortion) if the original signal is sufficiently clean that when analyzed with a hypothetical magnifying glass that sees all the way down to the level of the least significant bit, the signal contains no additional noise. But if the original signal does contain noise, and if the noise is of a magnitude that swamps the least significant bit, then the QE is going to correlate with the noise and not with the signal, and consequently will only comprise noise and no distortion. All of this can be mathematically proven.

So if the original signal is clean and contains no noise, all we need to do is add some noise of our own, and any distortion components present in the QE will be replaced by noise components. Although the
magnitude of this noise will turn out to be larger than the magnitude of the original distortion components, it also turns out to be more pleasing on the ear. This added noise is what we call dither.

There are actually many different types of noise, and naturally we want to add the best type of noise for the particular circumstances, and this is where it can get more complicated. In most cases TPDF (Triangular Probability Density Function) noise is the one that best fits the bill. TPDF noise has been shown mathematically to maximally suppress QE distortion with the minimum amount of added noise. In the two graphs below, I have tried to illustrate this:

The first graph shows the spectrum of a 344Hz signal sampled at 16-bits and 44.1kHz represented by the dark blue trace. You can see the clean signal peak, and a large collection of QE distortion peaks that fill the high frequency region. In the red trace, I have added 1 LSB (i.e. ±½LSB) of TPDF dither. The graph shows (not as clearly as I wanted) that the many of the QE distortion peaks have been reduced in magnitude, and some have disappeared entirely. In the pale blue trace, I have added 2 LSB (i.e. ±1LSB) of TPDF dither, and the distortion peaks have been eliminated entirely. In the yellow and green traces I have further increased the amount of TPDF dither, but have managed only to further raise the noise floor. The graph on the right shows a zoomed-in region which makes these features a lot easier to see. Clearly, adding as little as ±1LSB of TPDF dither (pale blue trace) doesn't just smoother the distortion components in noise – it actively eliminates them.

Other types of noise have other properties. One of the most interesting is “Noise Shaped” dither. This type of noise is more complicated, and has to
be added within a frequency-sensitive feedback loop. It has the interesting property that the QE noise is actively shaped away from one portion of the frequency range (where the ear is most sensitive) and into another (where the ear is less sensitive). Surprisingly, in the right circumstances, noise shaped dither is capable of suppressing the SNR to a level below the notional theoretical limit imposed by the bit depth. I will save a deeper dive into Noise Shaping for a later column, because it has a very useful application that is worth exploring in more detail.

It is important to appreciate that dithering the signal adds noise to it - noise that was not there before, and which can never be removed again afterwards. If you dither an already-dithered music data stream, you will add further noise, which may not provide much benefit. In particular, adding noise-shaped dither to a data stream that has already received noise-shaped dither can raise the accumulated noise to quite unpleasant levels at higher frequencies. Most CDs are mastered with a final application of noise-shaped dither, so if you have ripped one of these, you don’t really want to be applying more noise-shaped dither in your playback processing chain.

I want to finish with an interesting note describing the origins of dither as a signal-processing technique. Dither has its roots in the problem of dropping bombs during WWII. Elaborate mechanical contraptions were devised to enable the bombardiers to aim their bombs as accurately as possible when dropping them from bombers while getting shot at. In the safe confines of the engineering lab, the engineers could not get these devices to work with sufficient accuracy, much to their frustration. But, wartime needs being expedient, they were installed into the bombers anyway and pressed into service where, much to the surprise of the engineers, they proved to be far more accurate than expected. It turned out that the elaborate mechanical mechanisms were rather “sticky” in operation, and when installed on a bomber, the immense constant vibration jogged the mechanisms out of their “sticky” positions and caused them to function properly. Those of you old enough to feel the need to rap your knuckles on an analog meter before taking a reading are doing exactly the same thing. Back in the lab, the engineers mounted the bombing aids onto a vibrating table, and all of a sudden were able to replicate the excellent in-service performance. They termed this forced vibration “dither”.

**Richard Murison** enjoyed a long career working with lasers, as a researcher, engineer, and then as an entrepreneur. This enabled him to feed his life-long audiophile habit. Recently, though, he started an audiophile software company, BitPerfect, and consequently he can no longer afford it. Even stranger, therefore, that he has agreed to serve in an unpaid role as a columnist, which he writes from Montreal, Canada.
Where Are We Going?

By Bill Leebens

“Those who cannot remember the past are condemned to repeat it.”
--George Santayana

“History is bunk”.
--Henry Ford

“Ehh.”
--William M. Leebens, Jr.

One who obsesses over the history of the audio business, as I do for “Vintage Whine”, might think that such a perspective will enable one to project and predict the path of the industry. In this particular case I will side with Henry Ford: I don’t believe knowledge of the industry’s past provides any useful insight into its future course.

Put another way: I’ve spent two-thirds of my life in and around this business, and I don’t have a clue as to where it’s going. Depending upon your point of view, that’s either incredibly exciting, or deeply sad. I’ll pick the middle ground, and say, “maybe both”.

I believe in the laws of physics more than the laws of man, or of business. Newton’s first law of motion states: “Corpus omne perseverare in statu suo quiescendi vel movendi uniformiter in directum, nisi quatenus a viribus impressis cogitur statum illum mutare”. Roughly translated: a body at rest will remain at rest, unless a force acts upon it; and a body in motion will remain in motion unless a force acts upon it.

There is an unwarranted assumption that physical laws will translate into the world of business: “we’ve always done it that way, it’s always worked, so it’ll keep working”.

Not quite. If you view any aspect of the world of commerce as a little dot moving along a straight line, and imagine all the changes, upheavals and innovations in the world at large as little arrows bombarding that dot from all directions—what’s going to happen to that little traveling dot? Will it keep going in the same direction?
The qualifier in the first law is, “unless a force acts upon it”. So if innumerable forces act upon something, coming from all different directions…can we assume that something will just keep going the same way?

No. We know that the forces will affect the state of the object or business, and there’s just no way to account for every variable, every force. Ever seen spaghetti models, which plot possible different paths of hurricanes? There is no certainty, just an endless succession of dice-rolls, maybe, and if-thens. The best prediction is still a guess. It MAY wipe out Disney World, or it MAY trash next year’s orange crop. Or---hell, it might zip north to destroy New Jersey. And really, who could blame it?

We kid because we love.

What’s the point? My point is that knowledge of past trends or patterns does not ensure that one can predict the future. At all.

Back to audio. There may be amongst us a prescient few who viewed the launches of iTunes and iPods in 2001, and saw the future of audio unfolding before their very eyes. Most in our biz were like the once-powerful Big Time Dealer who physically ran an iPod owner out of his hallowed store, screaming, "get that @#$%&*! thing out of my store!!"

While I didn’t get it immediately, I quickly sussed out the way things were going. Somewhere there’s video of a seminar at RMAF ages ago, in which I huffed, “the next time some ------- complains to me about how the iPod is ruining the audio business, I’m gonna smack him in the face. It’s the single greatest marketing opportunity we’ve been given in our lifetime.”

And so it was… yet many were shocked when Beats approached a billion—that’s with a “B”--- in sales. And many of my colleagues still wonder if headphones—and vinyl—are gonna stick.

Let’s be frank: I’ve heard that the demise of the audio industry was imminent, for almost as long as I’ve been in it. Many companies have fallen by the wayside, and whole product categories have vaporized. There have been surprises, there have been unfavorable economic conditions. But, heck…while we’re in a quoting mood: “there is no security on this earth; there is only opportunity”. (Gen. Douglas MacArthur).

There will always be those who bemoan the passing of the carburetor, or the world of Ward and June and Wally and the Beaver. I am not one of them. While I admire the accomplishments of the past, I look at new technologies and trends and wonder what can be made of them, and how I can influence the outcome. Ego, much?

I look at major deals in our biz, like the sale of B&W to a Silicon Valley group, and try to figure out what it means. It may mean a complete change of direction for our biz. Or it may have just seemed like a reasonable deal. I have no way of predicting which, if either, is true.

But it will be fun to watch, and to try to steer the industry in response to all the changes that occur every second of every day. I guess that could mean that at heart, when it comes to audio….I’m an optimist.
Don’t tell anyone. I’ve got a reputation to uphold.

Bill Leebens is Editor of Copper and Director of Marketing at PS Audio. He has been in and out of the audio business for over 40 years. Each time he returns to it, he becomes more cynical. He does not intend to go quietly.
You Don’t Have To Be Jewish

By Dan Schwartz

When I was a kid, my parents had a comedy record called You Don’t Have to Be Jewish, which had a couple dozen bits, including “The Presidents”. In “The Presidents”, the presidents of the US and of Israel are chatting. The president of the US says (in a Texas drawl), “Mr. President, you must realize that I’m the president of 200 million people.”[1] The president of Israel says, “Yes, Mr. President --- but you must realize that I’m the president of 2 million presidents.”

Why am I telling you this? I got an email from Paul McGowan, who wrote, “Idea for you - and maybe this is just me being stupid. What’s a bass instrument for? Drums keep the beat, guitars handle melody or rhythm. Might make for an interesting series.”

It’s hard to remember what I used to think, though I’m sure I must have thought that way at some point. If you listen to piece like “Regiment” on Brian Eno and David Byrne’s My Life in the Bush of Ghosts, it’s not hard to imagine the bass as the deepest point in an inverted pyramid that everything else swirls around. I remember thinking like that, and it still might come in handy.

But there’s another kind of idea about playing music that has come to the fore in my mind over the last 25 years. Josef Zawinul once said of his group Weather Report (paraphrasing), “Nobody solos and everybody solos”. This was especially true of the early years of the 70s, when in addition to he and Wayne Shorter, the members were Miroslav Vitous or Al Johnson, and Alphonse Mouzon, Eric Gravatt (praise him with great praise!) or Ishmael Wilburn.

But the same could be said of the Grateful Dead in that same period, the “turn-on-a-dime” Grateful Dead, when they were at their leanest and most nimble. Even though they apparently had specified roles, they way those roles worked together was different than every other in rock and except those that came from the same scene.

And THAT’s where I live, musically.

Some good examples of what I’m thinking of are “Unknown Soldier” from I Sing the Body Electric, or
“Nubian Sundance” from Mysterious Traveler in Weather Report’s “catalog”. Or sides 5 and 6 of the Dead’s Europe 72, comprised of “Truckin’” through an instrumental that they’ve titled Epilogue/Prelude into “Morning Dew”. If you ever saw either of these bands live you know what I’m talking about. The music becomes more about time than anything else.

In some sense, music like this has a lot in common with Indian music, so it makes sense that it’s my home. In western music, it’s known as modal improvisation. In Indian music, it just IS.

[1] It was the 60s, you know?

Dan Schwartz is a parent, sort of a husband, and has been a musician of some years, having played on quite a few records - and even a few good ones. He’s recorded or played with Rosanne Cash, Bob Dylan, Jon Hassell, Brian Eno, Bernie Leadon, Dave Navarro, Linda Perry, Sheryl Crow, Stan Ridgeway, and was a member of the Tuesday Night Music Club. In his spare time, he used to write for Harry and Sallie at the absolute sound and the Perfect Vision. Professionally, he keeps trying to leave music, but it keeps coming to get him.
Living With the Goldbergs

By Lawrence Schenbeck

In November 1741 J. S. Bach was a guest of Count Keyserlingk, Russian ambassador to the Saxon court. That part we know for sure; what follows is conjecture. Bach could have seized the chance to present his new publication, Clavier Ubung bestehend in einer Aria mit verschiedenen Verœnderungen vors Clavicimbal mit 2 Manu- alen, which he could have composed for Keyserlingk’s harpsichord whiz Johann Gottlieb Goldberg. (That’s why they’re called the Goldberg Variations.)

The Count could have commissioned them from Bach. But aside from “Composed for Music Lovers, to Refresh their Spirits” on the cover, there’s no dedication. Think about it: No savvy 18th-century composer would have failed to name his worthy patron. Nor would he have neglected to praise his good taste, merciful tolerance of imperfection, and general I-won’t-behead-you-this-time attitude. So we have to assume that Bach was up to his usual trick, in which he simply left behind a shipload of masterpieces, the better to scare future generations away from ever attempting to compose anything better.

Thanks, J. S.

Here is what Forkel, Bach’s first biographer, had to say: Goldberg, who lived in the house with [Keyserlingk], had to pass the night in an adjoining room to play something to him when he could not sleep. The Count once said to Bach that he should like to have some clavier pieces for his Goldberg, which should be of such a soft and somewhat lively character that he might be a little cheered up by them in his sleepless nights. Bach thought he could best fulfill this wish by variations. . . . The Count thereafter called them nothing but his variations. He never wearied of hearing them. . . .

Well, maybe. As an insomniac myself, I wonder whether anyone could actually “never weary of hearing” music written especially for sleepless nights. Wasn’t Forkel doing a Parson Weems thing, giving readers something cuter than the bare truth?
A better question: Were Bach’s Variations BWV 988 meant to induce slumber, or instead to soothe and divert? Forkel’s mention of “soft and somewhat lively” music that left the Count “a little cheered up” splits the difference too nicely. My fellow insomniacs would consider this a rebuttal:

Audio files available only in online version

That’s what I’m talkin’ about. These are not lullabies. The only restful moment is the opening Aria:

Audio files available only in online version

Before the Aria repeats at the end, 30 livelier variations intervene. That’s 32 movements, one for each measure of the Aria. Every third variation is a canon, the strictest and most difficult sort of counterpoint to write. And just to let us know the composer was fully awake, each canon is constructed at a different pitch interval. Beyond that, these pieces continually astonish us with their variety. Listen:

Schumann-esque, no? As Schumann said, “He is not a stream [Bach] but rather an ocean.”

And it’s not the Aria’s melody that Bach varies, but rather its bass line and implied harmonies (in jazz parlance, the “changes”). Astute listeners will notice that occasionally he carries a motive over from one variation to the next, and sometimes variations seem to be arranged in ascending order of difficulty.

Does this mean we should consume them all at one sitting? A lot of keyboardists program them that way. You head to Carnegie Hall, find your seat, and prepare for over an hour of continuous music. Yet Bach seems prepared to cut you some slack: Variation 16 is styled as a French overture. If the management does let you take a bathroom break after 15, you’ll be welcomed back via this grand re-introduction:

Audio files available only in online version

Thanks, J. S.

Recordings complicate things further. Completism reigns: Nobody records just two or three movements (“These Are a Few of My Favorite Goldbergs”? ) anymore. That doesn’t mean you should listen straight through. Nobody in Bach’s time seems to have considered the Big Gulp scenario preferable. On that score we have Forkel’s inadvertent blessing:

For a long time, when the sleepless nights came, [Keyserlingk] used to say, “Dear Goldberg, do play me one of my variations.”

So go ahead, hit pause. Make a snack. (Try not to get peanut butter on the remote.) Listen. Reflect. Listen some more. Get up and walk the dog.

What instrument sounds best in this repertoire? Bach explicitly wrote the Goldberg Variations for a two-manual harpsichord (the so-called “French double,” heh heh). I like Andreas Staier, who uses a very colorful 18th-century instrument:

Audio files available only in online version

Beyond keyboards lie a host of transcriptions for other media that will someday call out to you. Back in the ’90s Dmitri Sitkovetsky arranged the Goldbergs for string orchestra. His celebrated effort has been freshly recorded in hi-res by the Britten Sinfonia (Harmonia Mundi HMU 807633). For some time I was put off by this arrangement, largely because I don’t like hearing the Aria played by instruments that sustain the notes. Sounds too gooey:

Audio files available only in online version

Yet once you get past the Aria, you get benefits: more power, dynamic shading, varied articulations, actual bass:

Audio files available only in online version

The transcription I really like is Richard Boothby’s, for—of all things—a consort of viols. Boothby’s own viol group, Fretwork, does right by him in their exquisite 2011 recording (Harmonia Mundi HMU 907560). There’s something about the antique sound of the viol (a sound that Bach adored, by the way) that helps us hear these notes as if for the first time.

Audio files available only in online version

Thanks, Fretwork.

Credits:
(1) (3) Andras Schiff, 2003 (ECM 1825)
(2) (6) Lars Vogt, 2015 (Ondine 1273-2)
(4) Zhu Xiao-Mei, 2007 (rec. 1990; Mirare MIR 048)
(5) Andreas Staier, 2010
(7) (8) Britten Sinfonia, 2015
(9) Fretwork, 2011.

Lawrence Schenbeck was born on a mountaintop in Tennessee. In spite of that, he became a historical musicologist. He is the author of two books, many more scholarly articles, and countless liner notes, music reviews, and “casuals.” He lives in the Atlanta area with his family and too much music, Tchaikovsky being the least of it. Literally.
The Brotet Means Business/part 1

BEHIND THE GLASS

By Duncan Taylor

Young hotshots and aged experts: we can agree there’s a difference between the two, notably in motivation but also in approach. One is on a path to become the other, grasshopper.

In the recording studio, I’m happy to work with either. If the young hot shot is disciplined, youth plays a lesser role; oldsters offer a gentler experience behind the glass, and a smoother one, to be sure.

When it comes to skill and technique, I often find the cream of the new crop and wizened masters to be on the same page. I’ve had some experience with both, having recorded several young prodigies (including two 13-year-old girls I’ll write about in coming columns), but also legends of Nashville like John Jorgenson, Herb Pedersen, and Larry Keel as well as Boulder veteran, Otis Taylor.

The young gunners at the front of the field bring tangible excitement into the studio, as I discovered when I recorded a quartet of very talented young men a year ago. Three of the four virtuosi had recently graduated from Berklee College of Music; the sole exception, cellist Nat Smith, might actually have been the most innovative in the group. Their composition style was as unique as the manner in which they created it.

We published the session under the names of the individuals in this quartet because they were on the fence about keeping the name of the band as it currently stood. They had released an EP under the name The Brotet, but I got to know them better as Grisman, Leslie, Hargreaves and Smith.

Samson Grisman, Sam for short, is Dave Grisman’s kid. You know that Dave---the one Jerry Garcia called “Dawg,” and a legend on his own in the acoustic music world. At age 8, Sam made his recording debut playing with his dad, Mike Seeger and John Hartford on their Grammy-nominated album Retrograss. Let’s just say the kid’s got a pedigree.

Sam plays upright bass in this group and is the de facto band leader, which in this case only means he
was the one exchanging emails with us beforehand. Each of these guys is such a hell of a player, and the group such a collection of tight friends, that the session was more a showcase of amazing equals than the band chain-of-command that we usually see.

Dominick Leslie on mandolin, for instance, had studied with Mike Marshall (who has played with Stephane Grappelli, Edgar Meyer, Bela Fleck and just about every legendary acoustic musician you can name), Grisman the elder, and Chris Thile (Nickel Creek, the Punch Brothers and the new host of A Prairie Home Companion). Dominick’s the youngest-ever winner of the Rockygrass mandolin competition, and won or placed second in a few others. He was invited to join Mike Marshall’s Young American Mandolin Ensemble, and since his years at Berklee, has appeared in several acoustic hot shot groups like Deadly Gentlemen (another group I’ve recorded, also featuring Sam Grisman on bass), toured with Noam Pikelny & Friends, and is currently traveling the world with an American music exchange program. To my ears he’s one of the most inventive, emotional mandolin players I’ve ever heard—let alone recorded.

On violin, Alex Hargreaves brought a similarly unique style to the mix. He’s been called “the best young jazz violinist in America” by the artistic director of Berklee, and “one of the greatest improvising violinists in America today” by Mike Marshall. At 15 he was the youngest ever Grand Champion of the National Oldtime Fiddlers contest, and in 2010 he won a full ride to Berklee at the Monterey Jazz Festival. He was recently recruited to join the world-renowned and Grammy winning group Turtle Island Quartet.

Rounding out the quartet is Nathaniel Smith on cello. He plays in a way you’ll never forget, once you see it. And you do have to see it, because just listening to his use of percussive chops, string bending, harmonics manipulation and sliding really makes you think more than one cellist is playing. -Or more likely, that perhaps a cellist is performing a duet with a djembe. Take a look at the way he fills out the sound by playing chords, riffing like the cello is a guitar, and keeping time with his rosin-powered chopping.

The group’s compositional techniques were every bit as unusual as the skill of the players. Alex and Dom were living in Brooklyn, while Nat and Sam lived in Nashville, and they told us that they write in pairs in their respective cities, and then bring these ideas together when they all meet. Something about the pairings of the bottom and the top of the spectrum in composition came through their compositions. See what you think when you watch this video:

Next time I’ll go into the challenges I faced while recording these young hotshots.

Duncan Taylor is a product specialist at PS Audio, and recording engineer and producer of live-track video recording studio Second Story Garage. He also plays a few instruments, pens a weekly music column for college students, and likes to build speakers and amps in his spare time.
Acoustic Research Part 2

By Bill Leebens

At the end of Part 1 we left Acoustic Research in 1954, just after the company had launched the AR-1, its first loudspeaker. 62 years later, the concept of “Acoustic Suspension” that caused Edgar Villchur and Henry Kloss to launch the company (and in many ways, an industry) is still synonymous with AR. In this installment we will look into other technological innovations at AR, along with the company’s influence and legacy.

That legacy is ensured by AR’s spot at the top of a family tree of audio manufacturers. The company’s characteristic, extended but mellow sound inspired a category of loudspeakers often called “the Boston sound” or “East Coast sound”—as opposed to the dynamic and more-aggressive sound of “West Coast” or “California sound” speakers like JBL. An early adherent to the “Boston sound” was founded by none other than AR partner Henry Kloss, who left AR and with backers Malcolm Low and Anton “Tony” Hoffman (who had previously helped bankroll AR) started KLH (Kloss, Low, Hoffman) in 1956. Villchur later explained Kloss’ departure simply by saying, “you can’t have two presidents.”

Kloss was one of the first licensees of the Villchur patent, and his first KLH model looked more than a little similar to the AR-1: a two-way speaker of roughly two cubic feet in volume, with an acoustic suspension cone woofer and a cone tweeter. AR themselves expanded their offerings; first with the AR-2 in 1957, and the AR-3, in 1959.

The AR-2 was both smaller and less-expensive than the 1, with a 10” woofer, two angle-mounted 5” mid-tweeters for better dispersion than the 1’s larger Altec driver. At a price of $89, the AR-2 was less than half the price of the original model, and rapidly became hugely popular. J. Gordon Holt—who a few years later would launch Stereophile magazine—wrote about the AR-2 in High Fidelity magazine, “the low end is remarkably clean, and like the AR-1, prompts disbelief that such deep bass could emanate from such a small box. Like the AR-1, the AR-2 should be judged purely on its sonic merits...not on the theoretical basis of its ‘restrictive’ cabinet size.”
Villchur wrote another paper describing new technology, “New High-Frequency Speaker”, which appeared in Audio in 1958, four years after the paper on acoustic suspension. The paper described the design and construction of domed midrange and tweeter drivers, which offered both more extended highs and better dispersion than cone mids and tweeters. The AR-3 was launched in 1959 featuring the new drivers, and was the company’s third model, and its first three-way system.

Regarding the prices of that era, and how the speakers were used: understand that while the AR-2 was cheaper than the 1, it still was not cheap: $89 in 1957 translates to $754 in 2016 bucks. The AR-3 was clearly a luxury purchase; its initial price of $216 equates to nearly $1800 today! Keep in mind, though, that when these speakers were launched, most systems were still mono--- so only one speaker was required. Stereo didn’t become commonplace until the early ’60’s.

The AR-3 was commonly viewed as a reference-quality speaker, especially for those who had no desire to house behemoths such as Klipschorns, Altec Lagunas, JBL Hartsfields, or Bozak Concert Grands. The AR-3 did have some advantages over those giants; its bass actually extended lower and was tighter, and the highs from the dome tweeter were both smoother and more extended than those from compression or cone tweeters. The downside with all acoustic suspension designs is that compared to horn-loaded or reflex bass enclosures, they need power—and lots of it. Whereas a horn-loaded system might put out 90+ dB with a single watt, acoustic suspension speakers might need 20 watts to reach the same level. Luckily, higher-powered amps (meaning, more than 10 watts) became more readily available about the same time as closed-box bass systems. Even up into the ’80’s, venerable critic Julian Hirsch (Hi-Fi Review/Stereo Review) used the AR 3a (an evolved 3, introduced in 1964) as his reference for clean, extended bass—and this was from a box 1’ x 1’ x2’. The 3 and 3a are still highly-regarded and loved by many—nearly 60 years after their introduction.

Here’s an early AR-3a, which still had the 3’s Alnico woofer. This particular one was once used by Julian Hirsch:

For those who still own 3as, full details for restoring the 3a are online here.

As the ’50’s gave way to the ’60’s, AR products became more about refinement and manufacturability than about innovation. The 3 became the 3a; the 2 became the 2a and ultimately 2ax; an even-smaller AR-4 was introduced, and was quickly supplanted by the 4x and 4ax. AR speakers became the standard of the industry, and of the world; thanks to Villchur’s intelligent engineering and elegant marketing, by 1966, 1 in every 3
speakers sold anywhere in the world was an Acoustic Research loudspeaker. Such market dominance has not been duplicated since, and is unimaginable today.

As Acoustic Research moved from an upstart to a trusted, familiar brand, opportunities arose for products other than loudspeakers. Villchur designed the brutally-simple AR XA turntable, a suspend-chassis, belt-driven ‘table that predated and presaged the Thorens TD-125 and -160, as well as the Linn Sondek. Introduced in 1961 for $58, the XA was still available in the '70's for less than $90, and variants of the table were sold into the '90's. Many years, more than 50,000 units of the turntable were sold, and a cottage industry arose for mod kits and ‘tables based upon the XA, the best-known of which were made by George Merrill of Merrill Audio. Here’s the AR XA as featured in a ‘60’s mail order catalog:

Into the '70's, integrated amps and tuners made by AR were often seen in simple systems offering high performance. A full range of speakers was available, from small models (including the new AR-7 and AR-8) up to the rarely-seen AR-LST (Laboratory Standard Transducer). The LST was a large speaker intended for wall-mounting in a recording studio, and attempted to improve upon the 3a’s dispersion and power-handling by adding more drivers from the 3a. While it caught on with a few well-heeled enthusiasts, it made no dent into the pro world.

Here’s a catalog page on the AR-LST, clearly showing its 3a roots:

By the middle '70's, AR was viewed as a well-established brand, perhaps even a little old-fashioned. As younger users entered the audio world, the brand appeared to be falling behind other brands more geared to reproducing rock
music at high volume, such as Infinity, Cerwin-Vega, and Advent.

In our final installment, we’ll look into how AR changed with the times---and sometimes didn’t. We’ll also look into the individuals who made the company great, many of whom went on to found new companies.

**Bill Leebens** has bought and sold vintage gear since the days when it was new. He regrets that a goodly number of classic American components now reside in Japan, because of him. *Mea culpa.*
1969

MUSIC TO MY EARS

By WL Woodward

There is a subset of astrophysicists who believe in and monitor the possibility of cultures outside our galaxial system. On January 20, 1969, speculation of alien influence on our planet became irrefutable.

Richard M. Nixon was inaugurated the Leader of the Free World. As you were.

In that same month Led Zeppelin’s debut album released. The Beatles performed live in public (sort of) for the last time on the roof of the Abbey Rd. studios. The performance was stopped early when the neighbors complained about the noise. That noise was Get Back, still one of the great rock songs, with a keyboard solo by Billy Preston that had all of us barking. A little more than a month later Jim Morrison of The Doors was arrested for ‘indecent exposure’ at a concert in Miami. In May the Turtles performed at the White House. Lead singer Mark Volman fell off the stage 5 times. 5. At the White House.

So far, so good.

Genesis released their first LP From Genesis to Revelation and Pink Floyd put out Ummagumma, really their first without any influence from Syd Barrett and with serious influence from the new guy, David Gilmour. Yes released Yes. They thought long and hard about their first title, but settled for the obvious when the mushrooms ran out. The Moody Blues, Procol Harum, and The Nice (with Keith Emerson, RIP) all released albums and arguably cemented 1969 as a seminal year in progressive rock. Ok tweeters, I know prog rock went back even to 1963, but in ’69 it just seemed that every time you rolled another joint something new was coming out.
Early that year a couple of really young guys doing promoting, working at McDonald’s, and real estate, guys with names like John Roberts, Joel Rosenman, Artie Kornfeld, and Mike Lang, smoked some hash and came up with an idea for a music festival in upstate New York.

The guys pitched and witched, and went through several town councils, who were intrigued by the revenue until the back-assed farts found out there’d be some 50,000 broke hippies coming to town looking for a bathroom. Stamped, denied.

March 18 the super secret bombing of Cambodia by US forces began. We were told, much later, they deserved it. Tricky Dick and the Kissinger Twins, Manic and Depressive, were not wasting any time.

In April The Who released their rock opera Tommy. In May, Sly and the Family Stone came out with Stand!, an album I still own and force on anyone I love.

By the summer we knew what was going on in Upper New York. Those pesky festival kids found a farmer named Max Yasgur who was happy to have this happen on his property. After all, how much damage can 50,000 stoners do? The Woodstock town council OK’ed the deal. In their defense they were accustomed to the nearby benign existence of The Band and Bob Dylan living and recording in a house called Big Pink, and whose largest complaints were misplaced shipments of Yoo-Hoo.

Our boys on the council never saw it coming.

We started hearing about the bands that were being lined up and it seemed impossible. The list of bands that did not play, like Jethro Tull, Led Zeppelin, Bob Dylan, The Doors, and Jeff Beck Group is easier to browse than the list of who did. Roy Rogers was invited by promoter Mike Lang to close the festival. Rogers declined. Jimi Hendrix closed instead. That, sports fans, was close.

Arlo Guthrie, Joan Baez, Grateful Dead, Creedence, Janis Joplin, The Who, Jefferson Airplane, Ten Years After, Johnny Winter, Blood Sweat and Tears, Crosby, Stills, Nash and Young, Jimi Hendrix were to be mere highlights. There were acts that we hadn’t had much exposure to, if any, that would blow gaskets and set some careers in motion for a very long time. Richie Havens, Canned Heat, Joe Cocker, Santana, Sly and the Family Stone, Mountain.

On July 4 I took a girl to the movies. The April Fools, with Jack Lemmon and Catherine Deneuve. I was a big spender at 15, so after we left the movie we went for a grape drink and a doughnut. She let me kiss her, and despite my fascination with Asimov and Bradbury I don’t remember the moon landing later that month.

That summer we were all 15. Everyone we knew was 15. I have a distinct memory of being on the work bus that summer taking us to pick tobacco just before that weekend and knowing we were missing this great happening up in Woodstock NY. Missed it by one year. One year later and at least one of us boneheads would’ve had a car, license, something. I would have snuck out of my mother’s womb to have been there.
We believed this festival, even before it happened, was the white flag for a New Beginning. From here on out our love would make everything work. Everyone would understand. Except maybe our parents.

It took less than 5 months to realize we could all be wrong. That short weekend in August turned out to be the apogee of intentions. A concert put on by the Stones at Altamont Speedway in December sent us reeling. The Grateful Dead, who had helped organize this festival, had recommended the Hell’s Angels for security. They pulled out of the concert because they were afraid of the security. Very bad night.

Woodstock would turn from the beginning to the beginning of the end. We had a ball, then went our separate ways.

Christmas of 1969. I gave my girlfriend a bracelet that gave her a rash, She of the grape breath and I have been married for 41 years.

W L Woodward is the Director of Operations at PS Audio. He has been married since 1974 to his high school sweetheart and should practice his guitar more.
The British Invasion/part 1

By Ken Kessler

Luddites, purists, technofreaks, DIY types, yard sale scavengers: whatever way you cut it, audiophiles fall into categories, the most obvious being those who succumbed to the analogue-vs-digital schism. Of course, there are also moderates, those who enjoy both digital and analogue sources, and one suspects that they dominate our community. Why cut one’s nose off to spite one’s face?

How can this be, when the pro-LP guts, for example, are so militant? In actuality, though, I can’t think of anyone – civilian or member of the trade – who has completely abandoned analogue for digital (or vice versa). Even if one no longer spins vinyl, there may be legacy hardware at play, whether FM radio or open-reel tape, or even cassettes. Absolutism may seem admirable on some level, but – as I always say when asked to defend either analogue or digital to a naysayer – I read crime novels and biographies, drink Sangiovese and Nebbiolo, and love Bugattis and Pegasos. No conflicts.

Catholic tastes weren’t permitted no so long ago, and – however childish or unimportant an A-vs-D conflict might seem – enthusiasts take such stuff seriously. When CD first arrived, the hatred with which it was greeted was a direct result of, and fuelled and encouraged by the British audio scene.

It’s hard to believe that, in the period before the instant information access afforded by the internet, that a tiny little island like the UK, which wasn’t even a healthy market for hi-fi, could be so influential. It may have taken months for, say, copies of Hi-Fi News & Record Review, Gramophone, Hi-Fi Choice, Hi-Fi For Pleasure, Hi-Fi Answers and Practical Hi-Fi to reach US shores, let alone Australian, Japanese and other territories, but the influence was palpable. And for two reasons.

With the exception of the “underground press” – primarily Stereophile, The Absolute Sound, IAR and a smattering of others – the US hi-fi press was too “advertorial” to be taken seriously. Whatever the possible incorruptibility of, say, French, German, Italian or Japanese magazines (and that is as moot a point as I care to make…), one needed fluency in those languages to gain anything from, say, the works of the estimable and influential Jean Hiraga.

Curiously, though owned by highly commercial, mainstream publishing houses rather than being self-published by crusading audiophiles, the newsstand British hi-fi magazines operated to the same standards as the US underground press. In other words, with one or two exceptions, they weren’t controlled by the advertisers.
However, back in the 1970s and early 1980s, the US underground magazines were still considered a bit fringe, unlike today when Stereophile and The Absolute Sound have replaced the barely-missed Stereo Review or High Fidelity and can be found on any newsstand. The UK magazines provided an antidote to the anodyne drivel published in the US mainstream titles.

But … this feverish, golden age of audiophilia, the most influential period in the high-end’s 65-year-ish history and roughly comprising the decade before CD arrived, was also the time when the most powerful cabal in audio exerted its power. Because it originated in the UK, and because the British magazines were admired and respected enough to be taken seriously, the tentacles reached the US market to a discernible degree, if not with quite the same force that the movement – a.k.a. The Flat Earth Society – dominated the UK for nearly 20 years.

That it started with a rather ordinary turntable, one that was deified in the manner of numerous religions elevating some humble mystic, peasant or otherwise modest individual to god status, is, in retrospect, an indictment of the entire affair.

That it started with a simple turntable, one that was deified in the manner of numerous religions that elevate some humble mystic, peasant or otherwise modest individual to god status, is, in retrospect, an indictment of the entire affair. It was a turntable, for goodness’ sake, and nothing more. But Linn’s LP12 became the totem of the movement. If you didn’t buy into it, you were a leper.

For this “new order” to take over, accomplices were needed. The brands behind this cultural revolution found support through a carefully groomed network of hi-fi retailers, not least because it promised to make their lives simpler: they were told what to sell and how to sell it. They would be supported by advertising, promotions and techniques used to this day by ruthless politicians. But the final piece on the board was the press. And the way that the British press swallowed the propaganda resonates to this day.
Chris Moon has done many things in his life, from playing with and filming the “Born Free” lions, running marketing and IT companies, and hunting for the remains of lost WWII pilots, to brokering high-end audio gear through his company Higher Fi.

My conversation with him on April 22nd was about one specific part of his life back in the ‘70’s, when he ran a recording studio in Minneapolis and mentored a young kid named Prince. Whether you liked Prince or not, he was a force to be reckoned with: a superb multi-instrumentalist, writer, arranger, pioneer of the internet and artist’s rights. His loss will be felt in the music industry for years to come. ---Bill Leebens, Editor, Copper. (C.)

C: My understanding is that at one point you owned a recording studio in Minneapolis—what was the time-frame?

CM: That was in the mid-1970s...back at the dawn of time (laughs).

C: --and what was the name of the studio?

CM: Moon Sound, of course.

C: What sort of things did you record?

CM: Moon Sound was born out of my love of music, wanting to hear and make music. Up in Minneapolis in the ‘70’s, it was a country-western, rock and roll town---PERIOD. My love of music was always R&B and more soulful kinds of things. I was mostly doing black music, probably the only studio in town doing that. Probably 75% of my time was given away.

C: …so you made it up doing commercial work, things like that?
CM: I worked at Campbell-Mithun, which was the largest ad agency in town and tenth-or eleventh-largest ad agency in the country at the time (now McCann Minneapolis, part of McCann Worldgroup, one of the 10 largest digital agencies by size—Ed.). I would go to work at the ad agency in the morning, come back in the afternoon and record all day and night in my own studio producing music—usually for bands without a fee, but occasionally someone would walk in and offer me money. So it was offset with…recording paying artists so I could go out and record the kind of music I liked to produce.

C: Your first encounter with Prince was as part of a group?

CM: He walked into the studio as part of a group called Champagne, a very young group managed by one of the boys’ mothers. They were a paying group, actually! —paying to produce a demo tape. At the time, I had been writing some music but found it was hugely problematic to get, you know, a bass player and a guitarist and a drummer and a keyboardist all to show up on time. I was sitting there pondering this problem, and the band in the studio was out for lunch—except there was one player still running around, and while I was sitting there eating my lunch, I noticed him playing the drums, and then he stood up and went over and played the bass guitar, and then he stood up and went over and played the piano and then went over and played the guitar…

…and AH! VOILA! I had an aha! moment and realized that if I worked with this guy, instead of trying to get FOUR musicians to show up on time, all I had to do was get ONE. And that was Prince.

So…I pulled Prince aside, and said, “look, I think I can make you famous, and if I can’t make you famous I can at least write you some good songs, and I’ll teach you how to record and produce in the studio. Do you have any interest?”

I don’t think he even said a word, he just nodded ‘yes”. I reached in my pocket and handed him the keys to my recording studio, which was everything I owned in life…and that was the beginning of
THAT.

C: What year are we talking about?


C: So...1975, he would've been around 16?

CM: He was 16.

C: Even at that point, you saw a lot of potential?

CM: NO! I saw a guy I could work with that didn’t have too big an ego (laughs a long while) that played all the instruments, was interested in collaborating on songs with me, and was confident enough on the various instruments that I thought we could turn out a good product.

He was born in the studio. When he started out, he had no voice. It took me hours to get him to sing loud enough to record it.

C: He just lacked confidence, or…

CM: He’d never done it before, he was incredibly shy, he sang in a falsetto voice. When I went to record him the first time, we had written our first song together, I wrote the lyrics, he wrote the music…we laid down the music, once we got the music recorded, then we go to do the vocals.

I was in the control room, he was on the other side in front of a microphone, we start playing the track, and I saw him singing through the glass, and I looked down at the meters, and they weren't moving! So I shoved the faders all the way up, cranked up the volume, and I’m still watching him singing, but I can’t hear anything.

So I go into the studio, I replaced the microphone, I replaced the cable, thinking they must be faulty. I come back in, start the track again, play it again, I’m seeing him singing, but I’m not seeing any deflection of the meters at all. I walked back into the room, and he’s singing like this (speaks almost inaudibly, like a hesitant small child), so quietly you can’t even hear him. He had the quietest voice I’ve ever heard in my life.

I kept saying, "Louder, LOUDER!"...but that was all he had. Over the course of a day, I turned off all the lights in the studio, I got a couple pillows, I laid him down on the floor, I put a pillow under his head, I shoved a mike down his throat, put it as close to him as I could get, and played the track over and over again until slowly, his voice emerged to the point where it could be recorded.

C: How long did your relationship with him continue?

CM: I spent a year in the studio producing him, naming him [1], writing the songs on his demo tape and packaging him up. After that year he wanted me to be his manager, and I told him, “look, I have no interest in booking your hotel rooms and booking your flights. I don’t want to manage your life, I
just want to make music.”

So he said, “then you need to find me a manager”. I went out and found him his manager, a good friend of mine, Owen Husney[2], and Owen took him and got him signed to Warner Brothers. I got him packaged and ready to go, and Owen got him signed, sealed, and delivered.

C: So it was basically a year that you worked with him (Prince)?

CM: Yeah. It was every day for 8-10 hours a day. It was as intimate an experience as you can have with someone, because that was all we did. He was very driven. I’d like to say I was very driven, but not as driven as he was---but I was in there every minute with him, producing and writing and creating. Each day I’d write two songs, he’d get off from school and catch the bus over, and he’d pick one of the two songs I’d written and work up the music. When I’d come in from the ad agency, we’d sit down and produce the song.

C: Did you ever have contact with him after he was signed with Warner’s?

CM: Oh, yeah. He called me numerous times to say how lonely he was being famous. I remember he called and said, “you’re the only person who’s ever done something for me without wanting something back. Now it seems like everyone wants something…and I just don’t know what people’s motivations are.”

We had a couple conversations about his difficulty dealing with fame at an early age, and the last phone call I got from him was really interesting. He called me out of the blue and said, “Chris, it’s Prince.”

I went, “hey, how are you?”—’cause he was never a man of many words. He said, “I just wanted to call and let you know that I made a movie about you.”

I said, “A movie about me? Now I’m worried—I hope it’s not a tell-all. What’s it called?”

He said, “It’s called ‘Under the Cherry Moon’[3] … ‘cherry moon’, get it, ‘chris moon’? I play a character called Christopher.”

That’s the only person who ever made a movie about me…so you’ve got to appreciate that. I went to see that movie and saw it in a completely different way than anyone else ever saw that movie.

C: I would assume so. What was in the movie that others wouldn’t have noticed?

CM: Well—what was in there was that he was playing me. No one else would’ve noticed that. The movie starts out saying, “this is a story about Christopher, who only cares about two things: girls and money.” I always wanted to tell him you left one thing out: music.

C: After Prince, you went on to record other musicians who had a fair amount of success, didn’t you?

CM: I produced Jimmy Jam and Terry Lewis, who went on to produce Janet Jackson, and became
huge, multi-platinum artists and producers in their own right. I produced Alexander O’Neal, who went
on to be a double platinum artist.

After Prince, several people came up to me and said, “you were just lucky”—and that kinda pissed
me off (laughs). I thought that I’d have to do it again just to show it wasn’t luck. So I held auditions--
-anyone walking by my recording studio in Minneapolis would see a sign that said, “COME IN AND
SING—this is the studio that discovered Prince”.

Everyone walking by would come in and give it a go. Most people were dreadful on a good day….

**C:** You predated American Idol, in that regard.

**CM:** I guess I did. Finally, Alexander O’Neal walked in. He had a tremendous, deep, strong male
voice. I pulled him aside and ended up doing the same thing for him I did for Prince, in terms of writ-
ing songs and producing him, and whatnot---he wasn’t interested in learning to record himself. Alex
went on to become a double platinum artist out of Minneapolis.

**C:** Did you ever work with Morris Day and his group, The Time?

**CM:** All those guys had been in the studio. You’ve got to realize that I largely started the black music
movement in Minneapolis, just because I was the only guy recording those artists…and certainly not
charging anyone to do it in the process. Before Prince, most of the local artists had come through my
studio, and after I became known for discovering Prince, then anyone who hadn’t come in before,
certainly did then. I was fortunate to work with many of the black artists in Minneapolis back in those
days.

**C:** Rather an unusual position for a very white Brit to be in, don’t you think?

**CM:** (laughs) Yeah, well, I was a funky white boy (laughs).

**C:** That hasn’t changed. Thanks for your time.

**CM:** Thank you.

[1] Prince was insistent that he should be billed as “Mr. Nelson”. Moon eventually convinced him to go
by “Prince”.
husney-interview/4113573/
[3] Released 1986 and universally panned, it was the first screen appearance of Kristin Scott Thom-
as.

**Chris Moon** is a British-born blond-bombshell-loving, barely boozing, big-stereo-blasting bad ass
balding funky white boy who barely behaves, borders on bizarre, bothers his brother, and boasts he’s
Bond.
Record Day 2016 Revisited: Are You Experienced?

It is quite amazing, nay impressive, the renaissance in vinyl. For the past twenty-five years plus I have been doing my damnedest to promote analogue replay above and beyond digital – I’m finally being proven right! Of course digital has also made progress: higher sampling rates, deeper bit depth; and anyone not impressed with a pure DSD file, surely must be missing something…

Of course, a quarter of a century ago CD replay was the de facto format. Sure there was DAT; ‘same shite, different box’ really, Sony’s compressed Minidisc, with its clever reusable optical disc, the complete white elephant of Phillips DCC, and slowly, the computer. The rise of the recordable CD-R disc, and the ease of which a computer could scan, store and copy, the cheapness of the media itself, made the whole music industry look like charlatans charging near 15 quid (over twenty of your US dollars over here) for a new shiny record store copy; when a blank CDR could be had for pennies.

And then it happened: the download, the MP3, the portable hard disc based music player, followed by a whole raft of fairly forgettable solid state MP3 players. The biggest change being the download. Instant tunes for a couple of bucks. Sod the sound quality, and possibly sod the artist too.

The wheel has turned. The format most true music lovers never gave up on is now on everyone’s shopping lists. From the so called ‘hipsters' buying retro-inspired, record-damaging plastic junk, through the ‘collector' who buys records with no real intention of playing the damn things, akin to those classic car people who polish but never drive... Limited editions, boxed sets, 45 RPM reissues, the world’s gone somewhat vinyl crazy.

From 1990 onwards, I pretty much worked exclusively in the High End of things; and of course, my specialist line has been vintage gear. I have lost count the amount of High End turntables and arms passed through my hands. The Garrard 401 I bought reluctantly in 1991, which inspired many a word, still sits at the side of me, despite all that have cometh, it is pretty much as I wrote about it back then, in the dark digital ages. My circle of audiophile friends shared similar interests, and having heard the
beauty of the machine, invested in their own. I had been pretty sheltered from the mainstream, which had seemed to have given up on any kind of sound quality whatsoever. I mean using your phone as a music player?!? MP3, Docking stations, Bluetooth speakers, horrors of horrors.

Around three years ago I began working part-time in a regular non-High End music store (Linn, Naim, Rega etc) as part of my recuperation after some pretty serious medical shenanigans. Based in England’s finest Northern City (Manchester, for those not fortunate to have visited) and it’s really very interesting to see the breadth of customers now taking up vinyl. In fact, it’s downright breath-taking. ‘Retirees’ blowing a mint on some pretty top system; established audiophiles rediscovering records, even after some had given away their original collections. Normal, non-audio-maniac folks wanting to hear how good their own vinyl collection can be, after it has lain dormant in the garage for the past 25 years.

What has been most heartening is the amount of youngsters, teenage kids, boys and girls, draggin’ mom and pops in to buy a record deck for their very first system. Of course they have read up and Googled, but seeing the face of some kid lighting up while being treated to a proper demonstration is a real breath of fresh air, for an industry that most people under the age of 45 simply don’t get or visit. What has surprised and amazed me is these kids aren’t wanting to listen to contemporary music of their generation, but Dark Side Of The Moon and Rumours.

One young guy lives close to me, no money for speakers, he spends every spare bit of cash on buying up classic rock albums off a certain well known auction website, sitting hour after hour in his private headphone retro vinyl world. Another kind of customer knowing little about any of it, except it is incredibly ‘in’ and buying the fanciest looking deck, simply to impress his mates! (I’m not being sexist. In every other class listed above its both boys AND girls, but it’s usually just boys who would blow a couple of K on something just to look impressive) The overall demand for turntables is mighty impressive, from the stores starting point of British made deck at £230 to sales of decks selling for £3,000 - 4,000! (Around $330 to $4300-$5700, for us clueless Yanks---Ed.)

The common theme running through all these guys either taking up vinyl for the first time, rediscovering lost collections, or those that never ever caved in to the ‘delights’ or convenience of digital, is the sheer pleasure their vinyl, and their vinyl systems are giving them. With CD or streaming you can have hours of nonstop music: It is simply boring, too easy, the mind doesn’t engage. Your vinyl--- well, 20 minutes a side for your 180 gram pressing, the whole thing becomes much more theatre. You concentrate for those twenty minutes, getting excited to flip it over to the other side. The whole taking the record out of its sleeve, placing your offering on the altar (oops! I meant ‘deck), cuing up, lowering the pick up on the record; it’s a whole lot more entertaining than hitting the ‘random play’ on your iPod. It is also a lot more satisfying. Our natural ‘hunter-gatherer’ instincts can be much more satisfied with the challenge of hunting down your record of choice, than simply tapping the ‘Buy It Now’ button on your phone... let alone buying and setting up your equipment.

The whole ‘which sounds better analogue or digital?’ debate is missing the point. It is not just about the vinyl sound, it is about the whole vinyl experience!

Haden Boardman is/has been a HiFi dealer, salesman, designer, director, manufacturer, service agent, installer and scribe. Worked for Alphason Designs, Audio T, Cleartone, helped set up EAR-Yoshino, and owns Audio Classics UK.
My father Rogelio Alvarado acquired the original system from a friend of his who was an audiophile at heart, Mr. Frederick Maduro, who passed away a couple of years ago. The system was rarely used, and so needed some repairs which my father and his friend George M. carried out during a period of time until the equipment was fully functional. My father has done many changes throughout the years and they have weekly gatherings to listen to music.

Modifications done to speakers:

1) The mid bass drivers basket were damp with lead shield.

2) The inside of the mid bass cabinets were lined with lead sheets

3) The original high pass cut was at 77hz. The acoustic cut off of the baffle (wings) is around 340hz. Therefore, the Emims would struggle to reproduce down to the cutoff frequency and could not launch a pressure wave into the room below 340hz. With the addition of the mid bass drivers the original gap was filled in.

4) The original wings were not cut, they were simply removed and replaced with two partial wings
in each tower made by our carpenters. The original wings were stored and are in perfect shape to be used at any future time.

In addition to the improve mid bass reproduction the mid range was also improved due to less modulation distortion. Also, Emim reliability was improved and this is a very important point since they are no longer available.

Since the two crossovers from the Infinty IRS control the volume of the mid bass and subwoofers that enabled us to define the tonal balance between the mid bass and mid range. There is more power handling in the room with this setup.

The equipment consists of the following components:

1) Amplifier transcendent Beast OTL with parts upgraded Blackgate capacitors and solid silver with gold plated cables.

2) Converted Audio Technology Ultimate Preamplifier with double volume control and black path capacitors with additional Blackgate and solid silver with gold plated cables

3) Subwoofer towers 20-60hz driven by Infinity IRS 5 2000 watts amplifiers

4) Mid bass Rs1- B towers 60-460hz driven by Infinity IRS 3 1500 WATTS AMPLIFIERS, the mid bass towers have 4/8 Inch woofers each.

5) Midrange Tweeter crossover which crosses 460 and 5k. These crossovers are upgraded with Mun-
dof capacitors and ribbon coil inductors

6) Technics SP-10 Mark 2 turntable modified with SME-312 TONE ARM and Van Den Hul Crimson Wood Cartridge

7) Ayre DX-5 DSD Universal Player

8) All interconnect and speaker cables were handmade in our jewelry workshop. They were made of solid silver LEY 925 and gold plate with 23k gold. They were done with the philosophy of Nordost Valhalla cables.

The room measurements are the following:

23 feet long x 17 ft wide x 9 ft height till first column and after 13 ft longer.

You have to come over and listen to Pink Floyd, I’m sure you will love the experience.

The audio scene in Panama is very limited due to our small population but I’m sure you could meet great people.
Switzerland by
Paul McGowan
Swiss Alps