



***Newsletter of the NJ Audio
Society
July, 2018***

***George Witterschein, Editor
Igor Kuznetsoff, proofreader and formatting editor***

About the NJAS

Our meetings are held on the 3rd Sunday afternoon of every month (with what seem to be more and more numerous exceptions), and meeting sites alternate between northern and south central New Jersey locations, usually at a member's home. We encourage and welcome anyone interested in high performance playback systems (LP, CD, and all other technologies) to join and participate through active membership. Annual dues are \$60. Membership includes a subscription to *The Source*, the publication of the New Jersey Audio Society, and invitations to attend meetings. Also with membership are opportunities to communicate through the submission of material or letters for publication in the newsletter, and to participate in our website, <https://www.njaudiosociety.com/>. If you have any questions use the 'Contact us' link to reach us, or call:

Jon Moberg, President, (908 654-5243), or Jim Glynn, Treasurer (732-377-3773).

Neal Patrone, President, 2013-2017

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Editor's Comments

My friends, I think you're in for a treat with this issue of *The Source*! For one thing, it's a long, meaty issue at 34 pages.

Much of that is due to one very long and very excellent article – **Mike Pacholick's** wonderfully in-depth account of his visit to **Ron Bauman** of Omega Mikro/Insound. Ron is a longtime partner of **Pierre Sprey** on the cutting edge of audiophile design and manufacture. Ron has so much to say, of such quality and importance for audiophiles, that I decided to give my friend Mike Pacholick a lot more space than I would normally ...so as not to cut out any good stuff and deprive you all of it. Once you've read it, I think you'll agree with my decision.

I've also indulge myself with what I call the "Final Word" in the "pseudoscience in audio" roundtable discussion of the last several issues. Read it, and see if you disagree. If you do, make me eat my Final Words by sending me your reply, refutation, heartfelt agreement, whatever.

Before I forget, we've got another bang-up meeting coming up. **Phil Slepian**, how do you do it? Anyhow, on July 15, will be meeting at **Leon Paboojian's** in River Vale. Leon has a fabulous array of new gear for us to sample, and a guest you may have heard of: the same Pierre Sprey I mentioned above! How can you miss that one? And while you're at it, please be sure to RSVP on our website, as of press time, only a handful of us had done so, and that's just doesn't cut it!

And there's a picture-intensive account of our June 10 meeting, hosted by DAC Amplifier Company in Allentown, PA. Plus "Bits and Pieces." including a welcome to new members.

You don't want to miss any of this, I assure you!

--George Witterschein, Editor

July Meeting Announcement

Our July meeting will be on Sunday, July 15, at 2 PM at **Leon Paboojian's** in River Vale.

Leon, one of our mainstay members, has a well-earned reputation as a barbecue chef. So don't let your imagination run away with you: this will *not* be our annual summer barbecue meeting. That will occur next month on August 19 at **Paul Pomerantz's**. Paul is right up there with Leon as a handy guy at the coals, so if that's what holds your interest, you won't be disappointed this summer.

Back to audio: Leon has an exceptionally attractive meeting lined up for us. For starters, his new goodies include the Mytek Manhattan II DAC, Rockport speakers, REL Studio 3 sub, and Anthem DV2 processor. (!)

Of exceptional interest: **Pierre Sprey** of Mapleshade Records is definite to be there and will showcase tweak items he manufactures. I've always found Pierre to be one of audio's more fascinating personalities...not to mention a truly great recording engineer and designer/maker of tweaks and other gear. Now is our chance to meet him in person! PS there is a dandy article by our own **Mike Pacholick** in this issue about a visit he made to Ron Bauman at Omega Mikro/InSound in West Virginia. Bauman and Omega are partners of Pierre Sprey/Mapleshade! Coincidence is alive and well in audio I guess! [Editor]

Date/time: Sunday, July 15, 2018 at 2 PM

RSVP: absolute must! Remember the warning I gave everybody last month about calling my Cousin Nunzi if you don't ~smile~. [NOTE: as of this writing, **Only Six NJAS People** had RSVP'd for the July 15 meeting. That's ATROCIOUS! We can do better, can't we?]

FOLDING CHAIRS: yes!

BRING:CD/SACD/VINYL/THUMB DRIVES (INCLUDING HI-REZ)

ADDRESS & DIRECTIONS: end of newsletter.

June Meeting Report

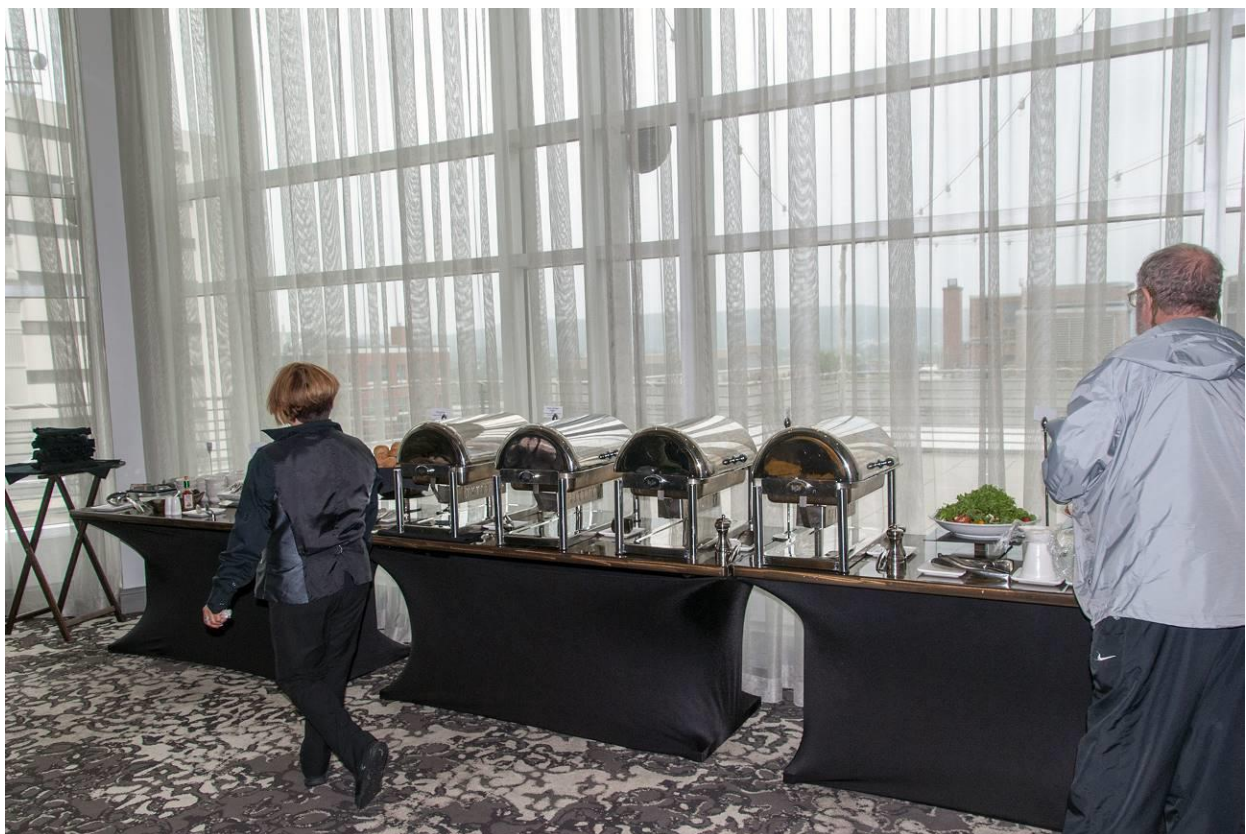
--Editor

We had a great meeting on June 10 in Allentown, PA, hosted by **Tommy O'Brien** and his **Digital Amplifier Company**.

D.A.C. rented a ballroom in the Renaissance Allentown Hotel, served catered food and drink, and generally pulled out all the stops for us.

I had a fine time, starting with the carpooling. President **Jon Moberg** was behind the wheel, chauffeuring me and our good buddies, meetings guru **Phil Slepian** plus all-around great DIY'er and audiophile **Victor Ranieri**. It's nice to be driven around by the boss! The banter was terrific, with liberal politicians taking a 90-minute verbal beating in Jon's Altima all the way from Mountainside to Allentown. ~smile~

And then, after we had negotiated the long walk from the rooftop parking lot to the ballroom Tommy had waiting for us, we spent some time chatting with friends until the time came for us to chow down in high fashion on the superb catered food.



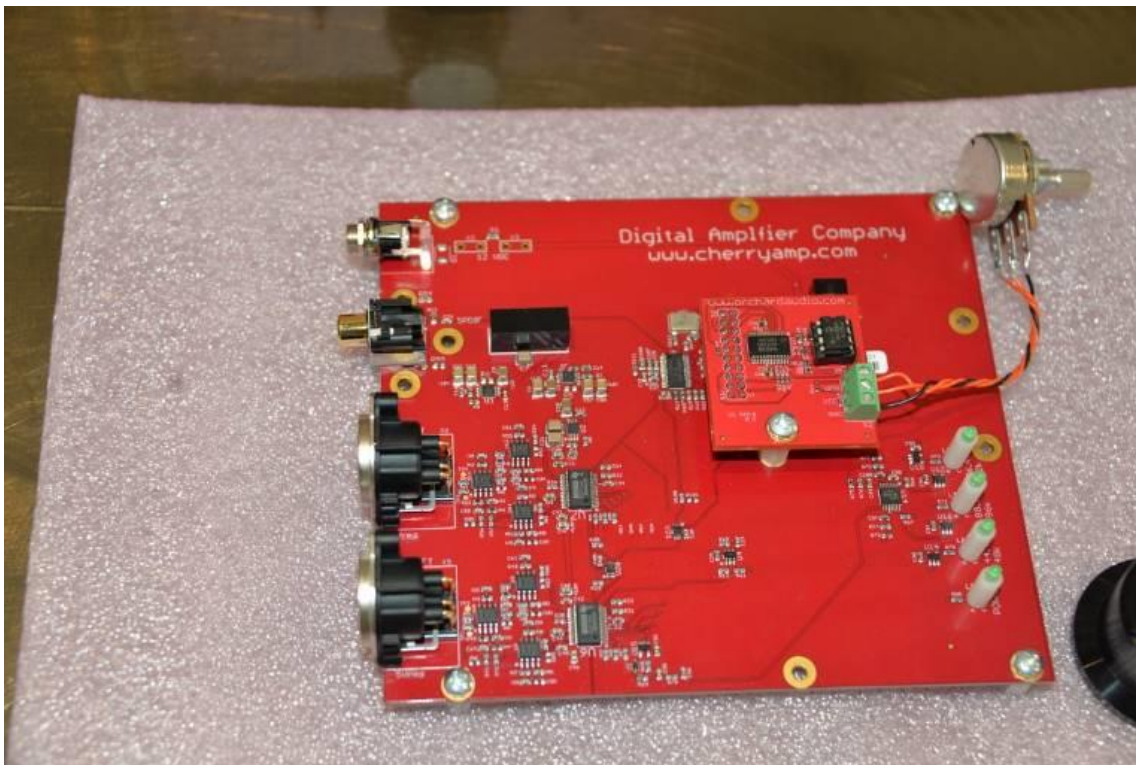
Your Editor (R.), first in line for the food [Hyman photo]

Mr. O'Brien then told us about his products and his company's estimable audio design and build philosophies. All the while, we were listening to at least two audio setups consisting of his gear. While a ballroom is not the ideal place to evaluate audio components – in this case, the room was too cavernous, whereas at shows the problem is usually lack of space. But what we heard convinced me and others I spoke to in our

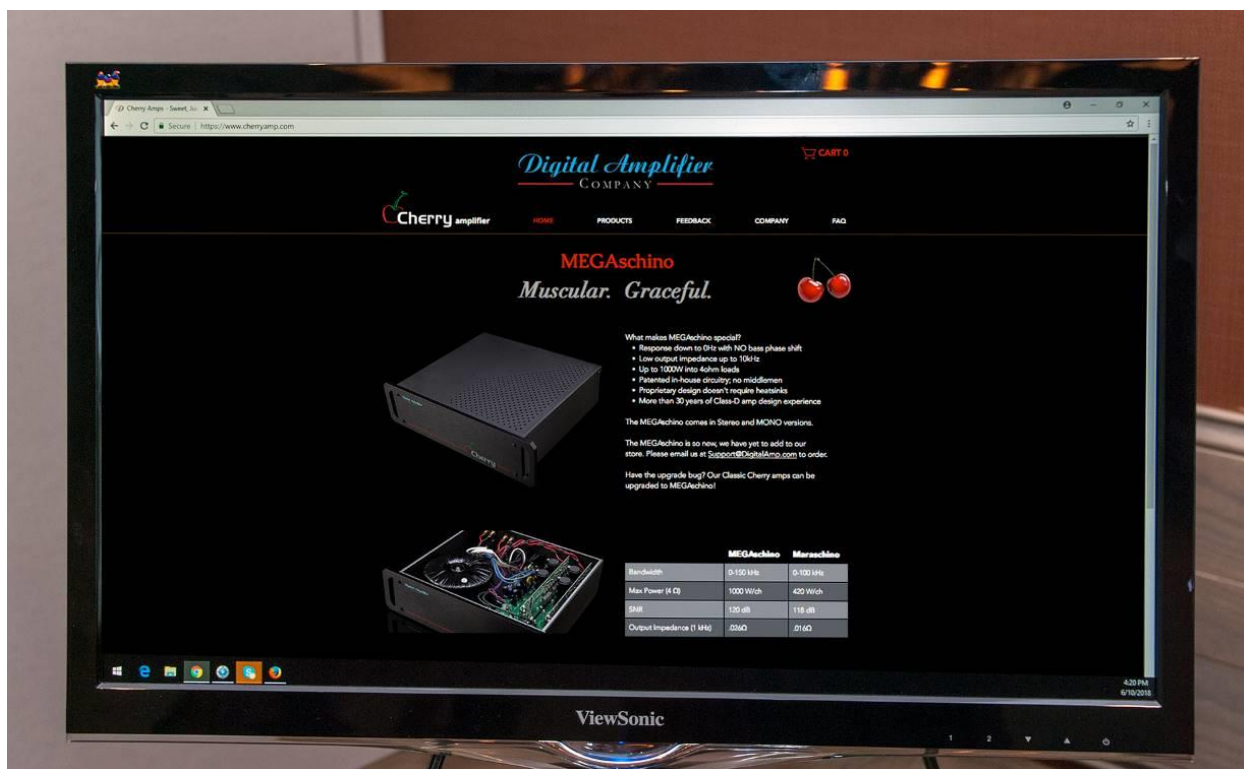
Society that we would really love to get a chance to hear D.A.C hardware in more properly audiophile listening spaces. Can't wait! (You listening, Tommy?)



Looking over the boss's shoulder in Allentown [Hyman photo]



D.A.C. PC board [Feneran photo]



The D.A.C cherries page [Hyman photo]

The attendance was a surprisingly high 29, despite a day of dark wet gloomy weather and the fairly long drive to Allentown from our NJAS north central Jersey heartland. Three of our members who live in Pennsylvania – **Steve Perlmutter**, **Izzy Marrone** and **Arnis Balgalvis** –got to the meeting, and afterwards a few of us retired to Izzy’s for a mini meet (see article next in this issue).It was especially nice to shake hands with Arnis and Steve, whom we don’t see often enough.

Victor Wynnytsky
with prospective
member
Bernard Medina

[Feneran photo]





New member
James Kasdon
and
Paul Pomerantz
[Feneran photo]



Tommy O hiding behind PC and stacks of his gear [Hyman photo]

June meeting report, part 2: Mini meet at Izzy's

As I noted briefly above, after the June 10 meeting in Allentown, Izzy Marrone invited a few of us over to his house in nearby Macungie for a mini meet: Jon Moberg, Phil Slepian, Victor Ranieri, and Steve Perlmutter (Steve arrived too late to make it into the picture taken below, but it was terrific to see him there).

As you might expect, the bunch of us had a fine time playing with Izzy's audio toys, especially his Rane active user-controllable crossover. I tried to eat him out of house and home, but he cut me off after four sfogliadells (or was it five?).



Our mellow Macungie crew [photo K.Marrone (Izzy's daughter)]

WELCOME, NEW MEMBERS

We've had a nice run of new members coming on board the NJAS lately, and it is the policy of *The Source* from now on to welcome folks as they join us.

James Kasdon signed up in early June.



Hailing from Millburn, James tells *The Source*: "I've been in a few pictures already on the NJAS website from the Roger's Audio and Stereodisc tours. I'm married with two teenage daughters. I'm a self employed lawyer and my practice is in Manhattan. I am a vinyl guy, moving coil, tubes all the way, though with recent vintage JanzZen floorstanding electrostat speakers. Musical tastes are mostly rock from 1960s to 80s and some jazz. Started with audio in junior high, got my (now replaced) Linn LP12 early in college in 1985. Hope that covers it."

Andrew Rizkalla came to us in January, and *The Source* apologizes for not welcoming him until now in these pages.

A resident of Clark, Andrew tells us: “I am a big music fan and fortunate enough to work from home most days, which enables me to enjoy music. I listen to a variety of music from jazz, classical, rock, and even Caribbean based music. I have a bunch of hardware I use. I have an Exasound e38 DAC, including a modwright Oppo Sonica DAC, both sound wonderful and do a great job with all the formats – hooked up to a self-made music server running Roon with HQPlayer for upsampling. Speakers are Zu Audio Soul Supremes, in addition to a pair of bookshelf Polk Audios. Amps include a Woo Audio WA5 which are great tube amps for the 16-ohm Zu speakers and headphones that I used.



Andrew Rizkalla [his photo]

“From time to time I will throw on the Stax SR-009 headphones when I know I will have some time to read or don’t have any meetings for a several hours. I am also a big fan of vintage McIntosh gear. I have a pair of MC30s and M240 including an mx100z preamp. I have paired the MC30 with the McIntosh mx110z preamp, and I just love the combinations, especially with the older jazz music I play. I have some other gear including headphones (HD800, Audeze LCD3, and Beyerdynamic T1 gen 2) I use but the above is my primary setup. I also listen to vinyl on a VPI Prime Signature. I enjoy listening to all formats, Vinyl, Digital, CDs, etc. From time to time I may pay for Tidal for exposure but I am part of the old-school that likes to own their music. I feel this is part of passing on to my kids the music and time we have enjoyed. I have bought many Disney and Pixar CD albums, ripped to my server. I also have a Sony turntable that can digitize vinyl at DSD 128 or 192/24.

“I work for a regulatory agency that regulates banks and non-banks, helping consumers. I was a banker myself and worked at two other regulatory agencies and have a good working knowledge of the laws and regulations. Before moving to Clark 10 years ago, I volunteered up at the Fort Lee Volunteer Ambulance squad for about 14 years and I am a life member there. Given the proximity to NYC and due to the fact that the George Washington Bridge enters the town, I have had some very interesting experiences, including being onsite on 9/13/2001 shortly after the 9/11 attacks.

“I have been married for 12 years with three little kids ranging from ages 7, 4, and 2. I also enjoy travelling, playing chess and photography and any good discussions of art and STEM.”

Thanks, Andrew, and especially for being such a good writer: you make your Editor’s job a lot easier. We should also note that some of your photos appeared here earlier this year in our coverage of the Stereodisc meeting.

Mark Work came our way via an invitation from his father-in-law, my good friend and ace photographer Bob Feneran. Like Bob, Mark resides in Woodland Park. He tells us:

“Graduated from the US Military Academy in 1980. An Army veteran and licensed civil engineer focused on transportation design – roads, bridges, airports, and highways – working for a consulting firm in Manhattan. Married with two children. My father-in-law is Bob Feneran – he introduced me to your august body of audiophiles. I like the technical aspects the best. Married to a wonderful woman who attends the meetings with me, Cheryl Feneran-Work.



Mark Work [his photo]

“Musically, I can play a stereo. Grew up on both types of music: Country AND Western. Have since expanded my tastes to include rock and roll, and classical. I have no particular item of audiophonic import - I listen to a radio or mp3 player and I'm fine. Hobbies - I like to read; go for long walks with my wife (need to go longer to lose some more weight <grin>); paint military miniatures.

“That's about it.” Great to have you among us!

PSEUDOSCIENCE IN AUDIO: THE FINAL WORD

-- Editor

Over recent issues we have seen a lively discussion about pseudoscience versus science in audio. It began with **Jim Glynn**'s thoughtful article, "Good Pseudoscience Versus Bad Pseudoscience" in March, when Jim defended some at least occasionally valid uses for pseudoscience; and then continued in April with valuable and sharply contrasting points of view from **Jens Waale** and **Andrej Ljolje**. My thanks to all three for thinking enough of the newsletter to submit their excellent essays.

Even though the discussion was terrific, well reasoned and well worded, I'm still going to exercise my Editor's privilege and have the final word.

Recently **John Pluta** and I went to see the 50th anniversary showing of *The Producers* at the fancy modern AMC Theater on Route 46 in Rockaway . After laughing ourselves silly, we drove down Route 10 to Chef Jon's (no relation to our president, I think) Chinese restaurant in Whippany, a favorite of ours. The food there is at least two cuts above your average New Jersey Chinese restaurant IMHO, and the high proportion, usually 75%+, of Asian diners you'll see there bears me out.



Chef Jon's in Whippany, where this essay was born [photo: Yelp.com]

While we were driving and dining, I told John about my plans to write a Final Word to the *Pseudoscience In Audio* discussion in the newsletter. John immediately responded: “Accuracy and double blinds and all that are just fine when you are *testing equipment*. But when you are *listening to music*, not so.”

That kind of sums up my feelings in a nutshell. But let me continue at greater length:

I am in fact a great fan of pseudoscience, judiciously applied of course (please, *please* remember I said that). This stems from the experience of having my life nearly destroyed by chronic fatigue back in the nineteen eighties, and getting it back again via pseudoscience. It was about that time that chronic fatigue became a diagnosis officially sanctioned by the CDC. This meant that my doctors, after considerable interviewing and a little bit of testing, concluded that I met the criteria of the New Jersey State Medical Society protocol for a recognized disorder – namely chronic fatigue.

Now I had a diagnosis. So what? My life was a mess. I was so tired that I would get up at 11:30 AM and struggle across the street to the noonday Mass at St. Peter’s College in Jersey City, only to find that I *could not understand* what was happening at the Mass. This despite the fact that the words of the Mass do not change much from day to day, are in English, and I had been listening to them for years! I was so tired that I had *lost the association between sound and meaning*... So that the words spoken by the priest and other ministers were just sounds, period. Plus, I was ungodly tired all the time; plus, I couldn’t sleep, because, not doing anything, I didn’t tire my body out at all, and just lay awake all night ruminating fitfully.

The diagnosis made no difference at all! My very good doctors, including one guy I had gone to high school with, told me, “Go home, take vitamins and aspirin, and rest. Maybe it will go away. We have absolutely no treatment for it.” At least they were honest.

I lived like that for half a year until somebody – at Mass at St. Peter’s! – mentioned that the famous diet/alternative medicine doctor Robert Atkins was successfully treating chronic fatigue at his New York practice. Keep in mind that my mainstream medical doctors, fine MDs all, to a man contemptuously regarded Atkins as a pseudoscientific quack.

So despite them I went to see Doctor Atkins in January 1990, unable to understand much of what I heard being spoken in my presence, not having had a good night’s sleep in maybe two years. Result of Atkins’s quackery: six months later, I bicycled all the way around Block Island by myself! (And earned a place in the Atkins newsletter as a star patient success story).

So, when I see the word *pseudoscience*, my ears prick up. I’m very positively disposed towards pseudoscience. Remember that “proper,” “real” science had nothing for me beyond bland and useless anecdotal advice almost literally consisting of “take two aspirins and you’ll feel better in the morning.”

Ever since then my favorite New Yorker cartoon is one showing a doctor in the exam room taking off his white smock, Superman style, in front of his patient and saying, “Medical science as we know it cannot help you, but fortunately for you I happen to be a quack!”

Back to audio. Most of you know that I'm a tube guy. Wherever possible, I choose not to listen to solid-state components; all three of the audio systems in my house include tubes. What you may not know is that I've taken some grief for that, and from a couple of our better-known NJAS members, on several occasions! One Society stalwart entered my music room and snipped at me: "You listen to *tyoobs*? Don't you care about *accuracy*? Don't you realize what you're *doing*?" as if I were a child pornographer. One of them went so far as to say in a deep rich Eastern European voice, "So you're *adding* distortion?" That guy at least had the decency to smile afterwards, and I of course forgave him on the spot. Don't get me wrong. These guys are beautiful. Without them, there'd be no high-end (or even low-end) audio! (Please, *please* remember I said that).

Now back to Pluta's Rule. Having established, in my own life, that pseudoscience is *not necessarily* (please, *please* remember I said that) a bad thing, and sometimes a lifesaver, I'm going to go right on listening to tyoobs. THD numbers notwithstanding. In fact, I'm going to go out on a limb and say that I *almost* (please, *please* remember I said that) *don't care* about THD numbers. Harmonic accuracy is in my mind no more than an "objectivity anchor" to keep people like me from drifting too far into vague realms of audio solipsism.

I could argue from the well-known experiments involving even-order versus odd-order harmonic distortion, to the effect that the human central nervous system *expects* even-order, especially second-order, distortion in the real world.

I could argue that certain kinds of distortion are the natural, organic (two words we may not argue with in the 21st Century, nahhhhhh!) way of sound in the real world that we human beings have learned to expect over millennia of music listening. I could also talk about the well-known fact that some extremely expensive solid-state audio equipment that achieves astonishingly low levels of distortion is utterly uninteresting (and occasionally revolting) to the audiophile listener.

But I won't say any of those things. Pluta's Law is enough for me. I'm here for the listening, and unlike some of us, I'm actually able to relax and enjoy music without fretting about THD statistics. I'm a natural born liberal arts/languages/art/music type; many of us audiophiles belong to another type, which I will call the scientific/mathematical/analytic/quantitative. They're welcome to it. But I *don't* want them "legislating" their own preferences as somehow binding on the rest of us. This tendency to legislate in matters of personal difference is I think one of the worst characteristics of the audiophile personality. I've been guilty of it myself, and who knows, maybe I'm guilty of it here? (Please, *please* remember I said that)

I actually pity those science type guys, especially the ones among them who cannot relax and listen to the music for fretting about test-bench-type performance numbers. While at the same time, I have to admit that I'm often fretting about whether my tubes are crackling or not. (You see, I believe levity has a place in argument. It's bleeping *audio* for God's sake!)

My thanks to John Pluta for clearing this one up.

And: am I serious about this being the last word in this discussion? Not really. *If and only if* (I remember that one from Mister Fallon's algebra class at St. Peter's Prep in 1961; there are a few scientific/quantitative bones in my body after all) I receive thoughtful and reasonably well written replies, I will print them. Even if, or *especially* if, they disagree with my essay here. Controversy is good for the newsletter, and anything that's good for the newsletter is good for the Society.

Enough said?

A VISIT TO RON BAUMAN, INSOUND, AND EXCEPTIONALLY FABULOUS AUDIO

-- Mike Pacholick

InSound Audio – A Journey Into the Time Domain Universe

It was back on August 21 when I approached InSound Audio, the country retreat of its founder, audio engineer and designer Ron Bauman. For this I had driven a little ways past Harrisburg, PA to Berkeley Springs, West Virginia. I didn't know it yet, but I was on one of the most unusual journeys in high end audio I would ever make. Everything was beyond the ordinary and the typical, and so were the results. One look at the photos of Ron's room and you will most likely think "this is unlike any hi-fi rig I've ever seen." That's certainly what I was saying to myself.



Ron Bauman's rig, listening room, West Virginia [Pacholick photo]

However, it's the unconventional that moves industry, invention and improvement. Just look around you at the iPhone or the Tesla and you will see what unconventional engineering and design can accomplish.

Ron Bauman, who is almost a dead ringer for Albert Einstein, lives, eats, breathes and worries about high end audio 24/7/365. I was curious about his passion and wanted to learn more: about his background; why he came to his unique design and engineering principles. I even tried his active digital cable, which is nothing short of outstanding in performance and clarity. Was it trial and error? Theory? or some irrational, Ouija-board methodology [pseudoscience? –Editor]? or just luck? I was determined to find out and wound up spending an entire day listening to his products. Several others joined me that day, including **Pierre Sprey** of Mapleshade Audio fame, who collaborates with Ron and sells some of Ron's products from his (Sprey's) website. [In fact it was author Mike Pacholick who helped set up Pierre's appearance at our next meeting on July 15 at Leon Paboojian's – Editor]



Ron Bauman “forest-womb” woodpile sample [Pacholick photo]

The first thing that struck me as unusual was the audio/room-man cave itself. It was like being in a forest-womb, with pure, natural, age-dried maple and ebony all around.

Rather than relying on synthetic fibers for diffusions and absorption, Ron's approach is that the diffusion coming from nature is second to none.

While we were getting the day started, Pierre show up in a minivan filled with more slats of natural maple, all cut from an Amish-owned foundry and hand-selected for Ron's listening room. The feeling one got from sitting in this nature-scented room was warm and relaxed. No other listening room I've heard of could compete with the texture and serene feeling I enjoyed that day.



No-crossover speaker design, Ron Bauman studio West Virginia [Pacholick photo]

Q: Describe your background in audio engineering.

I grew up in a very musical family: my grandfather composed and sang, an uncle played violin for the Boston Symphony Orchestra, an aunt began playing piano at the age of 2 and had the uncanny ability to play back anything she heard on the piano. Yet she never took a music lesson in her life nor could she read music. My cousin played and composed music for piano, sax and clarinet, another aunt is a professional singer. (Being surrounded by musicians has carried into my adult life; my son (a shredder guitarist) opened a concert at Carnegie Hall for Sting, James Taylor and Bruce Springsteen, my wife Marcia is a singer and entertainer, and many of my customers are musicians).

My parents had a 78 RPM Zenith console radio and hundreds of albums – mostly classical, opera and country and western. So I was surrounded by music throughout my childhood. I also spent a lot of time in front of that Zenith (with its single, very hummy, 12” electromagnetic speaker) listening to 78’s.

My interest in audio began when I was ten. My cousin had given me a 33 1/3 RPM turntable/crystal cartridge/arm, but with no way to listen to the then-new LP format. He also gave me my first LP – a 10” Bill Harris album (I was taking trombone and piano lessons and Bill was and still is my favorite trombonist). One day my parents left me home alone with nothing to do but recuperate from a mild cold. I got the bright idea that I could somehow connect my new 33 1/3 TT to our Zenith console.

I do not know how I accomplished that hookup but when my parents came home they no longer had a 78 RPM playback option: instead they had been “upgraded” to the new LP format. They found me listening in ecstasy to Bill Harris through the Zenith. That event started me on my lifelong audio journey.

Thirteen years later I had an EE degree from Lehigh University, but with the Vietnam War in full swing my audio engineering ambitions had to take a back seat. The option of a civilian job with the US Naval Air Engineering Laboratory assured me an exemption from the draft.

But from that backseat I managed to design custom hi-fi systems. This was during the period when high end meant hiding your system in cabinets so no one knew you had it. I linked up with a woodworking company who made radio cabinets for Philco. For our first customer I designed a dual-chamber bass reflex cabinet around a single full range 8” JBL driver pointing vertically into a conical deflector. It was a full-time battle to manage the quality I wanted from an otherwise fine woodworking team. They were so used to working with thin veneered wood and perforated Masonite rear panels that they could not imagine what I was trying to achieve with solid maple panels and weird conical deflectors. That lasted until we had our first listen in their very large workshop. They were stunned! And proud of what they had achieved of course. I must say that even many decades later the sound of the glorious stereo image in that huge space is still branded on my brain.

Soon thereafter I moved to the DC area where my day job was communications electronics R&D. I found parallels in my day job with audio. For example, designing preamps for electrically small shipboard antennas or moving coil or capacitive cartridges (remember the Weathers FM phono cartridge?) is nearly the same process.

The Navy needed to develop very high-dynamic-range, low noise, wideband RF power amps for communication to operate compatibly with collocated shipboard receivers. Intermod, harmonics and noise had to be at least 120dB below the kilowatt-level carrier power. The numbers aren’t so important but the knowledge we gained from that research is directly applicable to audio:

- 1) Balanced topologies result in generating higher levels of higher order intermods (IM) than unbalanced topologies.
- 2) When currents are induced in ferrous metals, aluminum, nickel, chrome and alloys thereof, they radiate IM to nearby circuitry (translation: any electronic enclosure should avoid those metals (that is why INSOUND AUDIO INC (IAI) uses wooden enclosures for its electronics).
- 3) Higher order IM and harmonics are the most troublesome. That is true for shipboard comms and also for audio. We characterized SOA OPAMPS as part of our research and found that all had substantial and audible higher order IM. (That's why IAI avoids using OPAMPS).
- 4) We measured higher order IM in copper wires and ribbons: ribbons had inherently lower higher order IM than wires- correlating directly with skin effect i.e., the lower the skin effect the lower the high order IM.
- 5) Corroded electrical junctions, especially those of dissimilar metals, generate high order IM. Lesson: keep all your hifi contacts clean.
- 6) Semiconductors can act as piezoelectric generators. Thus mechanical isolation of critical semiconductor circuits is essential to ultra-linear amplification or low-jitter circuitry.
- 7) Amplifiers are particularly sensitive to power returning from the load. Most amp designers ignore this phenomenon. We pay particular attention to it.

So, my background in audio engineering is my experience in RF engineering that, fortuitously, happens to be directly applicable to audio and my love of music. It was natural, then, to bring my experience in Navy communication research to my night job designing hifi systems for customers. One of those customers was also a customer of Pierre Sprey's (CEO Mapleshade records) and thought that Pierre and I should meet...



**L to R: Ron Bauman; an InSound customer;
Pierre Sprey; Ron's wife Marcia
[Pacholick photo]**

Q: When were INSOUND AUDIO INC and Omega Mikro born?

..and meet we did some 28 years ago. Pierre and I hit it off from that first minute; we were both passionate about music and audio. Mapleshade was already incorporated when Insound Audio Inc (originally INSOUND INC) was born. Pierre and I had the same basic goals for our cable/interconnect products: deliver as much of the source material as honestly as possible to the next component. And we had the Mapleshade recording studio to help us do just that.

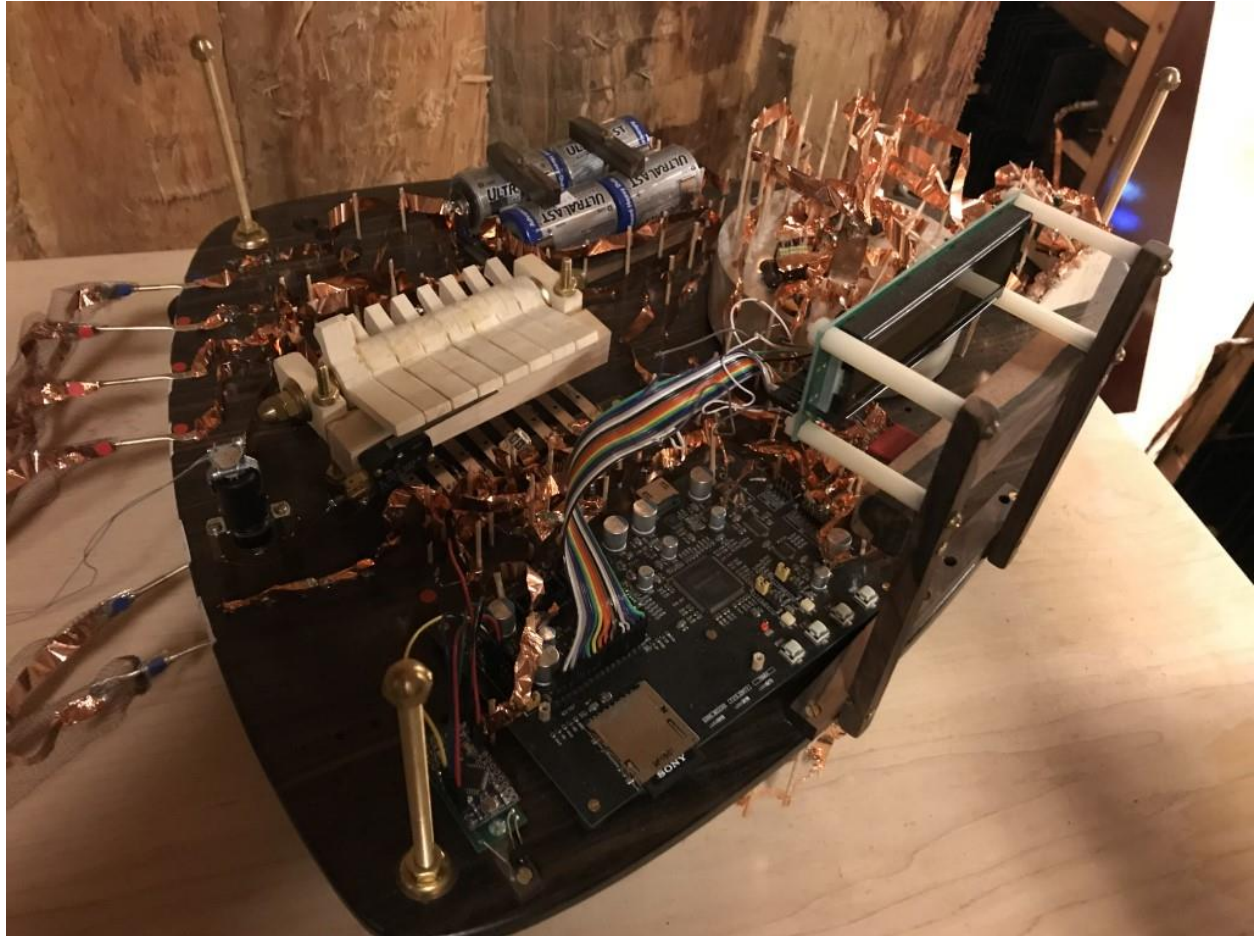
Although we have always been separate corporate entities, we jointly developed the OMEGA MIKRO and CLEARVIEW brands. IAI manufactures all the OMEGA MIKRO products and Clearview analog and digital interconnects you see on the Mapleshade website and in their catalogs.

Q: What differentiates your cable products from most high end audio products?

To properly answer this question I'll first lay a foundation so you'll have a better idea of where I'm coming from, audio-wise. Based on observations, years of testing (mostly by listening), and from researching the literature, it is fair to say that the medical and engineering communities have an incomplete understanding of hearing, especially when it comes to music. We find that characterizations of human hearing based on sinusoidal (pure tone) stimuli often yield misleading results. For example, using pure tones, researchers concluded that we can't hear absolute phase. But if you've ever listened to a piano recording out of phase you'll hear immediately that the piano sounds artificially "soft," but in-phase the notes strike sharper. Using pure tones as stimuli is characterizing hearing in the frequency domain and I find that a frequency domain characterization of an audio component cannot reliably tell you how good or bad it will sound: it can't even tell you which component will sound better than another.

My working hypothesis is that we are extremely sensitive to impulsive sounds (in fact, research shows that hearing sensitivity is more acute with complex stimuli than to pure tones). When a new, unexpected, sound is experienced, before (to be exact it's about 80 milliseconds) we figure out what the sound is, we already know its direction, and whether or not it's a potential threat. (For more on this see <https://www.omegamikro.com/how-our-ears-really-work---part-i-.html>>)

And since music is composed almost entirely of impulsive sounds it is no wonder the static place or frequency theories (both are based in the frequency domain) of hearing do not explain what we hear. But we've been persuaded by our listening tests that we humans are *far more sensitive in the time domain than in the frequency domain*. Accordingly, in our product development, we pay particular attention to the transient nature of musical cues. We've found that when we improve transients every other aspect of the resulting musical experience sounds more alive: instruments voice much more naturally when your system can more accurately reproduce the original leading and trailing time envelope of each note, and the spatial location and separation of each instrument also improves. When I listen in "analytical" mode, I hear each note played by each musician as having a beginning, a peak, and an end: i.e., each note has a "life" defined in the time domain. One goal of the playback system is to accurately reproduce in time and space the individuality of each note played by each instrument by each musician.



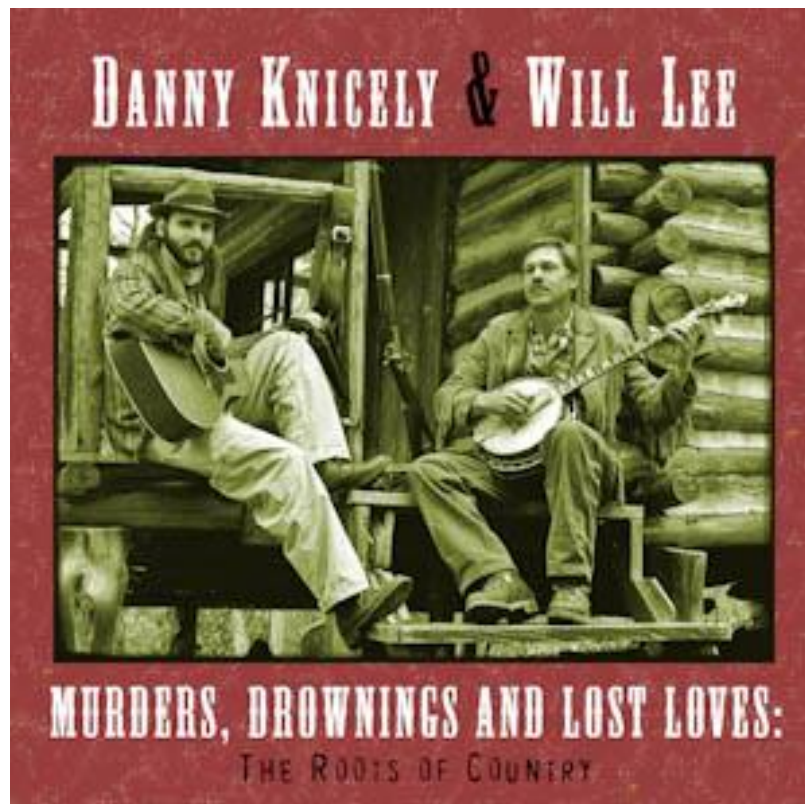
Dealing with those impulsive sounds requires this kind of thing [Pacholick photo]

Another important piece of background information is based on the following observation: Audiophiles fall into one of three camps: 1) those that want to recreate the sound they hear at a live concert sitting in the audience, 2) those that believe the first camp's goal is unachievable and so create their own interpretation of what a recording should sound like by selecting components that sound the way they want them to sound and 3) those that want to reproduce what the microphones have received during a recording session. BTW, none of camps are right or wrong, it's just that which camp you're in strongly influences what you buy for and expect from your sound system. High end audio magazines tend to fall in the second camp. I'm firmly in the third camp.

With that as background, OMEGA MIKRO and CLEARVIEW products share a family sonic resemblance: a very clean, clear, natural, musical sound with the least possible intrusion. After all, our job is to get out of the way of the music so you can hear more of what the production team and musicians created. Turns out that's not so easy to do.

With the Mapleshade recording studio as part of our lab (the other part is in Insound Audio Inc's DC and West Virginia facilities) we are very fortunate to have access to the live recording session, the master tapes and the gold CD's as our references. They are our main references but we use a variety of other recordings too: notably opera and especially female jazz singers (nuances in female voices are easily smeared by jitter).

We also regularly attend live performances – unplugged whenever possible- so we have a good idea of how all genres of music sound - from opera to WV mountain music and everything in between, including, jazz, gospel, metal, folk, small and large classical ensembles.



The Bauman/Sprey musical taste [Pacholick photo]

What we learned from this process of hearing the live performance and then trying to capture that “live” quality in our products is this: designing using industry standard frequency domain benchmarks does not get you that “live” sound.

Q: Describe in detail the historical research and development of your cable products and how you came to the conclusion that the thin-film copper design was best?

Mapleshade was already making an analog interconnect, based on British research, using small diameter wires, when I met Pierre. I heard his interconnect, saw what he was doing, and wondered: if 28 gauge copper wire sounds that good, would even smaller 40 gauge (1/4th the diameter) sound better? The answer: yes it does. And the improvement is pretty big.

That finding started a 10 year R&D effort experimenting with different wire sizes, insulation materials (dielectrics), and connector designs. We also discovered that wires had directionality! I realized that audio and RF demand similar performance from cables (albeit achieved by different means): we need low smearing, low jitter and low differential time delay (all signals, no matter what their frequency, must take exactly the same amount of time to travel from the source to the sink).

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One very significant result of that research is that smaller diameter is better sounding, and that shrinking the wire diameter results in large audible improvements in sound quality. But the problem is that small wire is extremely fragile.

We eventually made an interconnect with wire so small (60 gauge, 1/10th the diameter of a human hair) it was nearly invisible. (It was protected inside a thin-walled solid copper shield for protection). Manufacturing a product with wire so fragile was a major challenge for INSOUND.

That 60 gauge interconnect conveyed far more information from the source, and with far less smear and jitter, than any other interconnect we or our customers had experienced. We also discovered that, used in a digital interconnect, 60 gauge wire conveyed far more information with much less jitter than any other digital cable on the market (and that is still true today with the exception of our ribbon line) significantly transforming the basic sound of every digital front end we could get our hands on.

But the difficulty of manufacturing remained. One day, the RF light in my head went ON: what if we used thin ribbon instead of small wire to make interconnects? After all, in the RF world, ribbon is known to be a superior conductor over round wire because of its lower skin effect and skin effect was the only physics we knew of that could explain why smaller diameter wire always sounded better than larger. And I also knew that ribbons had inherently less higher order IM than wire. However, the audio community published papers concluding that skin effect is not a problem for audio so I was not at all sure it would be worth the expense of experimenting with copper ribbon for audio.

Our first experiments confirmed that skin effect is not only important in audio; it is *the* most important design element of a conductor (if live sound is your criterion). We already knew that dielectric absorption smeared and jittered the music, but we had not realized that skin effect is even more powerfully destructive. Other factors e.g., copper purity, ribbon aspect ratio, edge geometry, are also important, but tertiary.

Ordinary frequency domain measurements do not reveal the psycho-acoustic effects of smearing and jitter caused by skin effect and dielectrics. However, higher order IM products have the effect of smearing and so are important to characterize but almost never are (characterized). And, by the way, smearing and jitter are not just problems with interconnects: they are just as important in power cords, speaker cables, amps, cartridges, turntables, speakers and their enclosures, FM tuners and their antennas, CD players and file servers (in other words everything that is part of the signal chain (some parts of which are not at all obvious)).

So those experiments lead to our current and evolving line of cable products all of which have the same design requirements: minimize skin effect and dielectric absorption. The use of thin bare ribbon with loosely fitting mesh insulator tubing and minimal dielectric material (the dielectric insulation we use for our top of the line speaker cables, analog and digital interconnects, weighs 1/20th that of the air contained within its tubing). What about silver as an alternative conductor? We tested silver against copper (processed with our proprietary rolling and annealing process) and copper was always better sounding. (We also tested gold and other very promising alloys but copper was always better or more practical).

We do use silver very sparingly as a monomolecular surface on our Ebony Series speaker cable and also on our Planar Analog AVI, and as plating on brass hardware for our T-O Series RCA and Tau Series AC plugs.

Q: What is your conclusion about digital audio formats, and how did you come to those conclusions? Many readers will want to know your thoughts about DSD, DXD, SACD, etc.

DSD and SACD use delta modulation as the basic transform between analog and digital. Delta modulation is fine for video A/D/A but has a serious flaw when applied to audio: although Deltamod measures impressively in the frequency domain, the live feeling of audio can only be captured by accuracy in the time domain, and Deltamod does not accurately track the constantly changing signals that define music...and so it lacks the excitement of a live performance.

An audio club visited us with a state-of-the art DSD system: sampling rates up to 512KSPS and up to 64 bit resolution and the ability to change dithering, interpolation and oversampling algorithms on-the-fly. The sound was very nice (a few combinations were much better sounding than others), but still we felt the music lacked that feeling of “live” that comes from very accurate time domain fidelity. I hear that same lack of liveness in SACD’s and other DSD sources.

When evaluating the DSD SOA system we were comparing DSD to our latest file player called the MAXWELL DIGITAL JUKEBOX: it is a 16-bit system with sampling rates to 192KBPS. The 16 bit DAC we use has 16 switched current sources that can be perfectly timed to create the analog signal with minimal jitter and no requirement for an OPAMP (or any other kind of amp or filter or up/down/sampling (based on the work of Kusunoki) to distort the pure output current. We have yet to find a DAC at any bit depth or architecture that has the liveness of our DAC and its surrounding jitter-reduction architecture.

I have not yet heard a DXD-mastered file but since it does not have the inherent drawbacks of Deltamod I have high hopes that DXD may succeed where SACD and DSD have failed.

And for ripping we find WAV is better than FLAC and any other format offered so far.

Q: What were the design goals of your new digital sources and how do they differ from most high end digital sources that you've heard or had the chances to explore?

Some 15 years ago we thought that digital could not be as live sounding as vinyl – based strictly on listening to the “best” CD players compared with a vinyl playback system of our own design. See picture of the turntable (based on Oracle bearing/platter):



<https://www.omegamikro.com/customer-systems.html>.

We wrote a paper on that general topic <see <https://www.omegamikro.com/vinyl-vs.digital.html>>. Low expectations notwithstanding we began the development first of our planar digital interconnects and then of a complete CD player. As we progressed we slowly realized that much of what we didn't like about digital was its high sensitivity to jitter – especially correlated jitter (i.e., jitter induced by the music signal). Jitter causes very fine details to be confused and instead of hearing those musical details jitter causes an annoying confusion of these details that our brains can't unwind. We're so used to it we simply call it "digital" sound or digititis.

Once we began to understand some of the causes of jitter we developed jitter-reducing networks for our planar series of digital interconnects. During development, our customers graciously lent us their digital front ends e.g., DCS, 47 Labs, EMM Labs, Esoteric (with a \$20K Rubidium clock).

In every case our planar digital IC transformed the sound so that it was more lively and approaching the best of vinyl. Encouraged by these results we took the next steps: first we developed a purist Galileo CD player then 10 years later we developed the MAXWELL DIGITAL JUKEBOX (Faraday and Shannon versions).

The GALILEO CD Players and the MAXWELL DIGITAL JUKEBOX file players are designed and manufactured by INSOUND AUDIO INC. However, we incorporated what we had learned from our earlier joint experiments with Mapleshade, where we evaluated the sound qualities of various woods and metals as chassis materials, and wood also as electrical insulation.

Here are some of the features that collectively distinguish the GALILEO and MDJB from other players:

- 1) Battery operation (implemented with IAI's proprietary battery system) outperforms any mains-operated power supply we tested.
- 2) I²S interconnection with integrated jitter-reduction networks and no intermediate serial- parallel converter (SPDIF receiver) eliminates phase-locked-loop jitter inherent in the SPDIF conversion process.
- 3) Mechanical isolation of jitter-prone circuitry (especially the CD turntable in the case of the Galileo).
- 4) Use of wood chassis rather than metal.
5. Bare copper ribbons, properly directionalized to interconnect most of the circuitry on the chassis. (minimal use of printed circuit boards)
- 6) IAI RCA silver- plated thin-walled brass RCA jacks.
- 7) IAI purist power switches using pure silver-plated copper contacts and wood cams.
- 8) PURE Mode shuts down the DSA process between the CD turntable and its controller and turns off the display process in the Galileo, and for the MDJB the pure mode entirely shuts down the microprocessor-based display.
- 9) Mechanical and electrical isolation of the main oscillators.
- 10) We pay particular attention to the way impedance changes, on an instantaneous basis, to the impulsive nature of the I²S signals.

We were able to compare early versions of the Galileo in the same system using the same source music captured in both CD and vinyl. The conclusions? They sounded nearly identical with no salient differences (except the occasional pop or click from the vinyl). But later versions of the Galileo were clearly retrieving more of the recording session nuances than the vinyl. We had not expected this.

As we improved the Galileo we began to notice deficiencies in vinyl that had not been so obvious before: namely vinyl also has jitter, albeit different-sounding than digital. But when it was absent in the CD, it became clearly audible in the vinyl playback.

What are the sources of vinyl's jitter? They include mechanical connections that are vibrated by the motor and the stylus:

- 1) Turntable bearings
- 2) Arm bearings
- 3) Stylus coupling to cartridge body
- 4) Springs and other interfaces between the TT plinth and supporting platform.
- 5) The connection mechanism between the motor and the turntable
- 6) The motor and whatever drives the motor: whether servo, DC or AC (Interesting anecdote: we developed a 2 phase crystal-based controller to drive a synchronous phono motor. It used stereo amps to drive each phase. We discovered that the sonic signature of each amp we used to drive the motor imparted a sound quality to the vinyl that was the same sound quality the amp had when driving speakers).(See any recent *Stereophile* turntable reviews. You'll notice that turntable speed is virtually never what it should be and is constantly changing from about 10 HZ too high to 10 Hz too low. The absolute error in speed does not worry me as much as what that constantly changing speed error represents in the time domain: it means that time is inherently jittered by the wow and flutter). In the case of mains operated ac synchronous motors we found that our planar power cords, appropriately directionalized, made the vinyl sound better.

Our goals for our latest playback system – the MAXWELL DIGITAL JUKEBOX, Faraday and Shannon versions- are not much different than our goals for our vinyl and CD systems: eliminate or minimize time domain jitter and smearing so that more of what the source's musical and tech production team has created becomes available for you to hear in your listening room.

The MDJB, because it has no mechanically moving parts, makes it easier to achieve our goals. CD motors and some phono motors are controlled by phase-locked-loops. PLL's, by their nature, create jitter. By comparison, the phono motor controller has a much easier job than CD: it only needs to keep constant speed whilst the CD speed must constantly and accurately change as the laser sled moves across the CD. The main advantage the MDJB has over the CD (and vinyl) is that it eliminates a primary source of jitter – the phase-locked-loop (PLL)-controlled motor drive. Instead, it uses a low-jitter, stable and accurate clock to read out the data.

Moreover, any file player that is compatible with a variety of file formats, e.g., WAV, AIFF, MP3, AAC, and Apple Lossless, and various bit depths and sample rates, will need at least one or more PLL's to allow the user to switch between the various formats. The MAXWELL DIGITAL JUKEBOX eliminates the need for a PLL by accepting only WAV files at 16 bits. We have so far experienced that lower jitter at 16 bits sounds more live than 32 bits with its inherent PLL jitter.

Q: Why so few female audiophiles (a working hypothesis, not science)?

I've been an audiophile throughout my 50+ year marriage. My wife Marcia and I share a love of music and have experienced most musical performances together. She's a singer and entertainer and has a very good ear. I saw her put the mic down and sing without it when the PA system she was using didn't sound right. She has also walked out of live concerts when the PA system is too audible. But throughout all that time she has not shown any interest in listening to any hi fi system, created by IAI or anyone else. Until she heard the MDJB. Without fanfare or any formal announcement, she now listens as much as I do – hours at a time- to music at our WV facility (see <https://www.omegamikro.com/home-theater-components.html>). (Also see the door she created to help diffract the sound and the cabinetry for the V-AMPS in that same set of pics < <https://www.omegamikro.com/home-theater-components.html> >. She also conceived and designed the TRIAD cable lifts.

In fact, she has a quicker, less tolerant ear than I do. During one of our listening sessions she heard a nearly inaudible speaker nut rattling that I could easily ignore. That prompted her to leave the room until I was able to find and correct the culprit. Nut tightened, she came back to listen to more music. We've had several other female visitors that have joined us for many-hour listening sessions.

My working (*but totally non-scientific*) hypothesis as to why females seem to like to listen to music sourced from the MDJB? Women do not put up with music that annoys them. When the music has jitter or other distortion it seems males are willing to tolerate it while females won't. I can easily listen to a group of musicians who know what they're doing in the noisiest of clubs with really bad PA's. She won't. So perhaps there is a basic male/female difference in tolerance: men can put up with more than females. I'm talking strictly about listening to music here: nothing else.

Another, much written about factor, is the visual perception differences between men and women. Men like the looks of hifi gear and speakers. Women don't. Of course there is more to this M/F audio perception than just taste: See <<https://www.omegamikro.com/the-mcgurk-effect.html>> which suggests our brains have connections that make what we see influence what we hear. Perhaps this connection is stronger in women than in men? We need much basic research to answer *Why so few female audiophiles?* But, for the moment, I am very happy that I am living with a rare exception: albeit it took us 50 years to get here.

BITS AND PIECES

DOUG WHITE A VIMBERG DEALER

Our friend **Doug White** of The Voice That Is dealership/showroom in Newtown Square, PA announces that he is now a dealer for German audiophile manufacturer Tidal's startling new line of loudspeakers called the Vimberg. See Doug's ad below for captivating pictures. And read all about this new product line at <http://www.vimberg.de/wp-content/uploads/2018/06/Pressrelease-Vimberg.pdf>

STEVE PERLMUTTER REVIEWS TERMINATOR DAC

Ace NJAS member Steve Perlmutter informs us that his recent review of the Terminator DAC has appeared on the manufacturer's website: <https://www.denafrips.com/single-post/2018/06/03/DENAFRIPS-TERMINATOR-Pennsylvania>

(Sneak preview: Steve likes it!)

NJAS MEMBERS UNDER THE WEATHER

The Source has learned that two of our well-known members have had some health troubles of late. **John Pluta** suffered one of his intermittent bouts of septicemia about three weeks ago (in your Editor's home!, but that's a story for another time). John is much better, and up and about and reports being fully recovered, so give him a shout if you like. **Al Mirabella**, however is resting after some recent unpleasantness and unlike John he requests being left to the peace and quiet of his home without interruptions.

Ads from Members



"Spend wisely." All of these products were selected for their good value. Call for a demo.



iFi USB 3.0 reclocker \$400, NAD M12 Preamp/DAC (MQA) \$3500, KEF Blade Loudspeakers \$32000/pair, NAD D3020 Int Amp/DAC \$399, \$300 for demo model, Salamander Cabinet (price varies)



Bryston BDA-3 DAC \$3495, JVC RS520 Projector (4k) \$8000, \$4000 for demo model, Bluesound Node 2 Audio Streamer (MQA) \$500, KEF LS50 Loudspeakers \$1500/pair



NAD T748 AVR \$699, Bryston Mini-A Speakers \$1500/pair, Bluesound Pulse Network Speaker \$299, NAD C268 Stereo Amp \$799, Rogers High Fidelity EHF-200 Integrated Amp \$12,900



PSB Alpha Speakers \$299/pair, Sony UBP-X1000ES SACD/DVDA/4K Player \$500, Roon Music Software \$119/yr-\$500/lifetime, DH Labs Mirage USB Cable \$240/meter

DH Audio and Home Theater, 11 Mitchell Road, Parsippany, NJ 07054. (917) 923-0552



The Grungesnuffer

5 Volt *An affordable, linear-clean,*
USB direct-bypass power **supply.**

The Grungesnuffer

It is a well-known fact that the USB power supplied by a computer is about as clean as the average sewer. The Grungesnuffer is a superior way to eliminate that grunge.



About the size of a man's hand, the Grungesnuffer power unit, a compact and cosmetically attractive (rather than industrial looking like some) starts with a high quality *linear power supply* boasting a hefty transformer feeding an adjustable regulator supplying a Nichicon Muse output cap. The in, out caps and bypass jack/plug combo are all bypassed with film caps and the setting resistors are metal film types. The output is a clean and solid 1.5A, which is more than all but a few devices need and a custom version can be built that can supply in excess of 2A as well.

This supplies a unique *direct-bypass USB jack/plug* back-to-back, with RF absorption and the last Polystyrene final filtering bypass cap built right in, via a shielded umbilical. And the best trick: the data signal never gets anywhere near the power supply, eliminating additional connections, traces, or other impedance disturbing factors, found in other devices meant to do this sort of thing. The bypass plug/jack is about 2" long and the effective data path length inside of it when connected is about all of 1.75". All in one, correctly impedance

matched path, straight through because the jack and the plug are mated directly to each other, preserving the spacing between the contacts all the (short) way from one end to the other! Even the + power pin is removed from the plug at the computer end so RF can't jump across to the working pin!

You plug this into your computer, and a USB cable into it and whatever is after that receives clean, "fast", uncontaminated 5V power.



There is at least one cheaper unit meant to do this for under \$100

around but that uses a *switching* supply - not really much of an improvement, hardly a step up from the garbage that comes out of a computer. The better *linear* units that the Grungesnuffer competes with start at around \$400 and go up from there. In fact, **K Works makes an all-out big brother to this capable of either 1.5A or 3A**, in that price range **if you want the last 1% of performance with all the tricks, and uses the same plug/jack design that has trickled down to the economical Grungesnuffer**. And none of the better units have the Grungesnuffer's unique bypass plug/jack design. Most pass the data signal through the box itself, resulting in signal damaging impedance reflections, and any noise on the data line shares nearby space with the DC power components - way too close to those for comfort.



NanoMax



Carbon USB

The new K Works play everything USB DAC and revelatory new companion USB cable.

**You can't touch their sound for anywhere near their price!
(Available separately or as a package.)**

Contact: Igor Kuznetsoff at: gorkuz@yahoo.com or 845-267-8882 after 3 PM.

Directions to Leon Paboojian's

Address:

220 Highland Ave.
River Vale, NJ 07675

Phone: Leon's home number: 201-358-6234

Mobile: 201-248-5417

Driving Directions:

Google Maps directions from Morristown (those without GPS, adjust to suit):

- Interstate Route 287 N to NJ Route 208 in Bergen County
- NJ Route 208 S, following signs for Franklin Lakes, to NJ Rt 4
- NJ Rt 4 to NJ-17 N
- NJ-17 N 1.4 mi. to GS Parkway N
- Parkway N 3.8 mi.
- take exit 168 toward County Rd 502/Washington Westwood/Hohokus
- Take Washington Ave. to Highland Ave in River Vale
- Leon's house is at 220 Highland Ave.

[Google Maps says trip from Morristown is about 1hr. 10 minutes' drive time]

PS: if you're using your GPS, I strongly urge you to enter Leon's address into your GPS starting with the ZIP Code first. There are several River Vales (or Rivervales, grr) in New Jersey, and I know from bitter experience that you can easily wind up getting perfect directions to the wrong town. Since there is only one ZIP Code for Leon's address, start with that! (Editor)